RF TEST REPORT

Report No.:	20230517G05470X-W10
Product Name:	Mobile Data terminal
Main Model No.:	DT50P
Serial Model No.:	DT50U, DT50E, DT50D, DT51P, DT51U, DT51E, DT51D
FCC ID:	SWSDT50P
Applicant:	UROVO TECHNOLOGY CO., LTD.
Address:	36F,High-Tech Zone Union Tower,No.63,Xuefu Road, Nanshan District, Shenzhen, Guangdong, China
Dates of Testing:	06/02/2023 - 07/03/2023
Issued by:	CCIC Southern Testing Co., Ltd.
Lab Location:	Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China. **Tel：** 86 755 26627338 **Fax：** 86 755 26627238

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Test Report

Product .....:	Mobile Data terminal
Brand Name.....:	UROVO
Trade Name .....:	UROVO
Applicant.....:	UROVO TECHNOLOGY CO., LTD.
Applicant Address.....:	36F,High-Tech Zone Union Tower,No.63,Xuefu Road, Nanshan District, Shenzhen, Guangdong, China
Manufacturer .....:	UROVO TECHNOLOGY CO., LTD.
Manufacturer Address .....:	36F,High-Tech Zone Union Tower,No.63,Xuefu Road, Nanshan District, Shenzhen, Guangdong, China
Test Standards .....:	47 CFR Part 15 Subpart E 15.407 ANSI C63.10-2013
Test Result.....:	Pass

Tested by .....:	Kim Li	2023.07.05
	Kim Li, Test Engineer	
Reviewed by .....:	Chris You	2023.07.05
	Chris You, Senior Engineer	
Approved by .....:	Yang Fan	2023.07.05
	Yang Fan, Manager	

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Change History		
Issue	Date	Reason for change
1.0	2023.07.05	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Mobile Data terminal
Main Model No.	DT50P
Serial Model No.	DT50U, DT50E, DT50D, DT51P, DT51U, DT51E, DT51D
Hardware Version	SQ53S_SUB_V03
Software Version	SQ53S_WE__DS__D_230327_02
EUT supports Radios application	WLAN5.0GHz 802.11a/n/ac
Product Type	Client devices
Modulation Type	802.11a/n: OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ac: OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 150 Mbps 802.11ac: up to 433.333 Mbps
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: 20MHz/40MHz/80MHz
Channel Number	UNII-1: 4 for 802.11a, 802.11n(HT20), 802.11ac(VHT20) 2 for 802.11n(HT40), 802.11ac(VHT40) 1 for 802.11ac(VHT80)
	UNII-2a: 4 for 802.11a, 802.11n(HT20), 802.11ac(VHT20) 2 for 802.11n(HT40), 802.11ac(VHT40) 1 for 802.11ac(VHT80)
	UNII-2c: 11 for 802.11a, 802.11n(HT20), 802.11ac(VHT20) 5 for 802.11n(HT40), 802.11ac(VHT40)) 2 for 802.11ac(VHT80)
	UNII-3: 5 for 802.11a, 802.11n(HT20), 802.11ac(VHT20) 2 for 802.11n(HT40), 802.11ac(VHT40)) 1 for 802.11ac(VHT80)
Antenna Type	Internal Antenna
Antenna Gain	-2.37dBi
Output Power (Max.)	UNII-1: 16.53dBm, UNII-2a: 16.17dBm UNII-2c: 16.83dBm, UNII-3: 16.71dBm
Power supply	Rechargeable Li-ion Battery DC3.85V/9000mAh

Note: DT50U, DT50E, DT50D, DT51P, DT51U, DT51E, DT51D compared with DT50P, only have different model name. All of the model's circuit theory, electrical design and Critical Components are the same.

1.2. Test Standards and Results

The objective of the report is to perform testing according to below standards for the EUT FCC ID Certification:

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	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

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

No.	FCC Rule	Description	Result
1	15.203 15.407(a)	Antenna Requirement	PASS
2	15.407(a)(1)(iv) 15.407 (a)(2) 15.407(a)(3)(i)	Maximum Conducted Output Power	PASS
3	15.407(a)(12)	26dB Emission Bandwidth 99% Occupied Bandwidth	PASS
4	15.407(e)	6dB Emission Bandwidth	PASS
5	15.407(a)(1)(iv) 15.407 (a)(2) 15.407(a)(3)(i)	Power spectral density (PSD)	PASS
6	15.207	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)	Radiated Band Edges and Spurious Emission	PASS
8	15.407(g)	Frequency Stability	PASS

1.3. Channel List

Operated band in 5150 MHz ~ 5250MHz

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

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

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

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

1 channels are provided for 802.11ac-VHT80.

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

Operated band in 5250 MHz ~ 5350MHz

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

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

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

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

1 channels are provided for 802.11ac-VHT80.

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

Operated band in 5470 MHz ~ 5725MHz

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

Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
100	5500	116	5580	132	5660
104	5520	120	5600	136	5680
108	5540	124	5620	140	5700
112	5560	128	5640	/	/

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

Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
102	5510	118	5590	134	5670
110	5550	126	5630	/	/

2 channels are provided for 802.11ac-VHT80.

Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
106	5530	122	5610	/	/

Operated band in 5725 MHz ~ 5850MHz

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

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

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

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

1 channel are provided for 802.11ac-VHT80

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				MCS 0
802.11n-HT40/ac-VHT40	5190	/	5230	MCS 0
802.11ac-VHT80	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				MCS 0
802.11n-HT40/ac-VHT40	5270	/	5310	MCS 0
802.11ac-VHT80	5290	/	/	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	5600	5700	6 Mbps
802.11n-HT20/ac-VHT20				MCS 0
802.11n-HT40/ac-VHT40	5510	5590	5670	MCS 0
802.11ac-VHT80	5530	/	5610	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				MCS 0
802.11n-HT40/ac-VHT40	5755	/	5795	MCS 0
802.11ac-VHT80	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 generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible 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 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 7	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

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 Sep. 30, 2023.

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 Sep. 30, 2023.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025.
The accreditation certificate number is 5721.01.

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)(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.

2.1.2. Antenna Information

Antenna General Information:

No.	EUT	Ant. Type	Operating frequency range	Ant. Gain
1	Mobile Data terminal	Internal	UNII-1, UNII-2a, UNII-2c, UNII-3	-2.37dBi

2.1.3. Result: comply

The EUT has a unique antenna connector. 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)

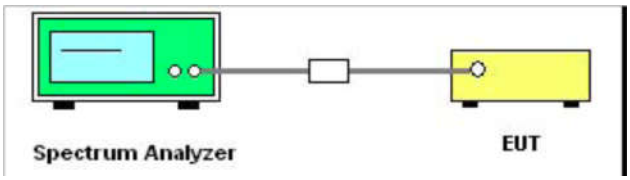
The maximum conducted output power should not exceed:

Band	EUT Category	Limit
U-NII-1	☐Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≤ 125mW(21dBm) at any elevation angle above 30 degrees as measured from the horizon)
	☐Fixed point-to-point Access device	1 Watt (30 dBm)
	☐Indoor Access Point	1 Watt (30 dBm)
	☒Mobile and portable client device	250mW (24 dBm)
U-NII-2A	☒	250mW (24 dBm) or 11dBm+10logB* Whichever is less.
U-NII-2C	☒	250mW (24 dBm) or 11dBm+10logB* Whichever is less.
U-NII-3	☒	1 Watt (30 dBm)
Note: B* is the 26 dB 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 ≥ 3MHz, Sweep time = Auto, Detector = power averaging (RMS).

6. Number of points in sweep ≥ 2 × 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)

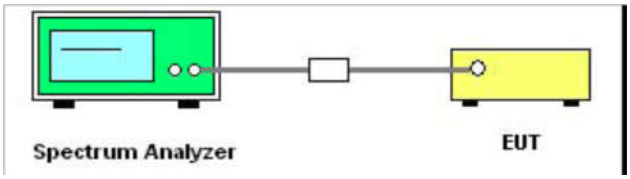
The maximum power spectral density should not exceed:

Band	EUT Category	Limit
U-NII-1	☐Outdoor Access Point	17 dBm/MHz
	☐Fixed point-to-point Access device	
	☐Indoor Access Point	
	☒Mobile and portable client device	11 dBm/MHz
U-NII-2A	☒	11 dBm/MHz
U-NII-2C	☒	11 dBm/MHz
U-NII-3	☒	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 Band: Set RBW = 1MHz, VBW ≥ 3MHz, Sweep time = Auto, Detector = power averaging (RMS).
5. For U-NII-3 Band: Set RBW = 500kHz, VBW ≥ 3MHz, Sweep time = Auto, Detector = power averaging (RMS).
6. Number of points in sweep ≥ 2 × 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. Emission Bandwidth and Occupied Bandwidth

2.4.1. Limit of Emission Bandwidth and Occupied Bandwidth

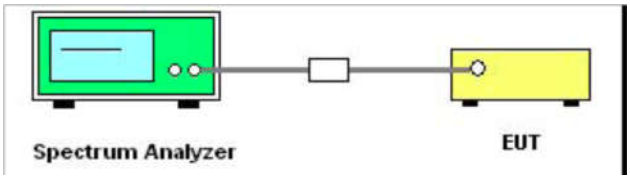
26dB Emission Bandwidth and 99% Occupied Bandwidth no Bandwidth limit.

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 ≥ 3 × RBW.
7. For 6dB EBW Measurement:
   Set RBW =100kHz, VBW ≥ 3 × 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 Emission Bandwidth and Occupied Bandwidth

Please refer to APPENDIX A for detail

2.5. Frequency Stability

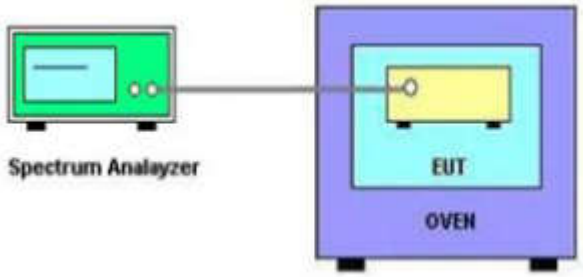
2.5.1. Limit of Frequency Stability

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 (μV/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 (uV/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 (dBμV/m)
5150 - 5250	Outside of the 5.15~5.35 GHz	-27	68.2
5250 - 5350	Outside of the 5.15~5.35 GHz	-27	68.2
5470 - 5725	Outside of the 5.47~5.725 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) EIRP[dBm] = E[dBμV/m] + 20 log (d[m]) - 104.77, d is the measurement distance in m.
2) E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm] = -27dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=105.2 dBuV/m, for EIPR[dBm] = 10dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=110.8 dBuV/m, for EIPR[dBm] = 15.6dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=122.2 dBuV/m, for EIPR[dBm] = 27dBm.

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).

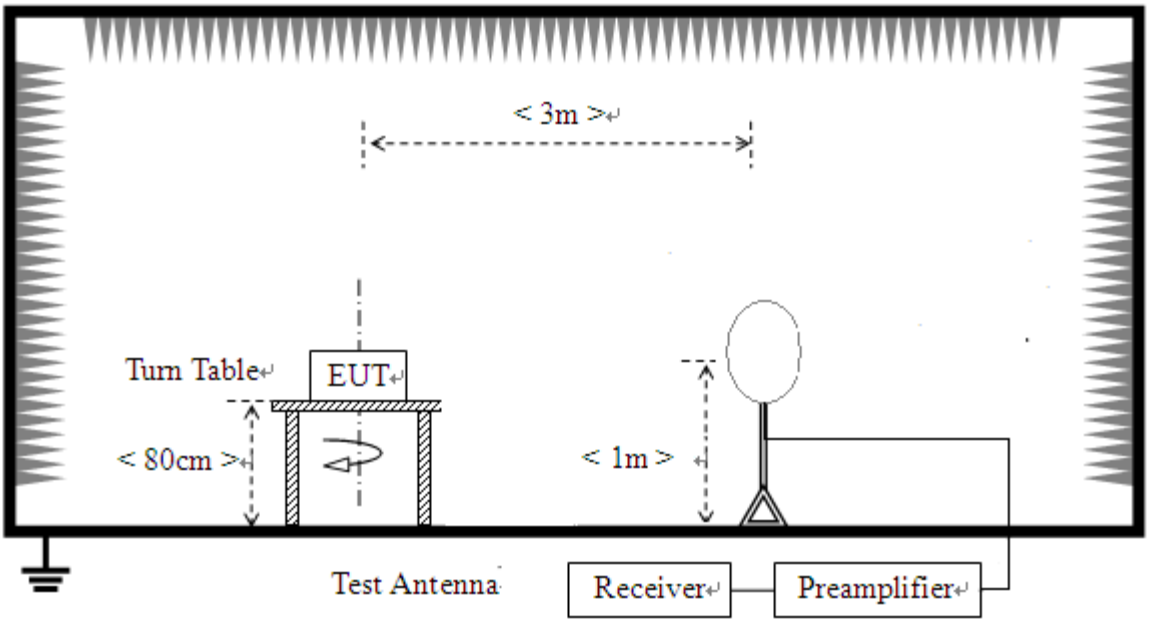
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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	([2])
13.36-13.41	/	/	/
Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. [2]Above 38.6.			

2.6.2. Measuring Instruments

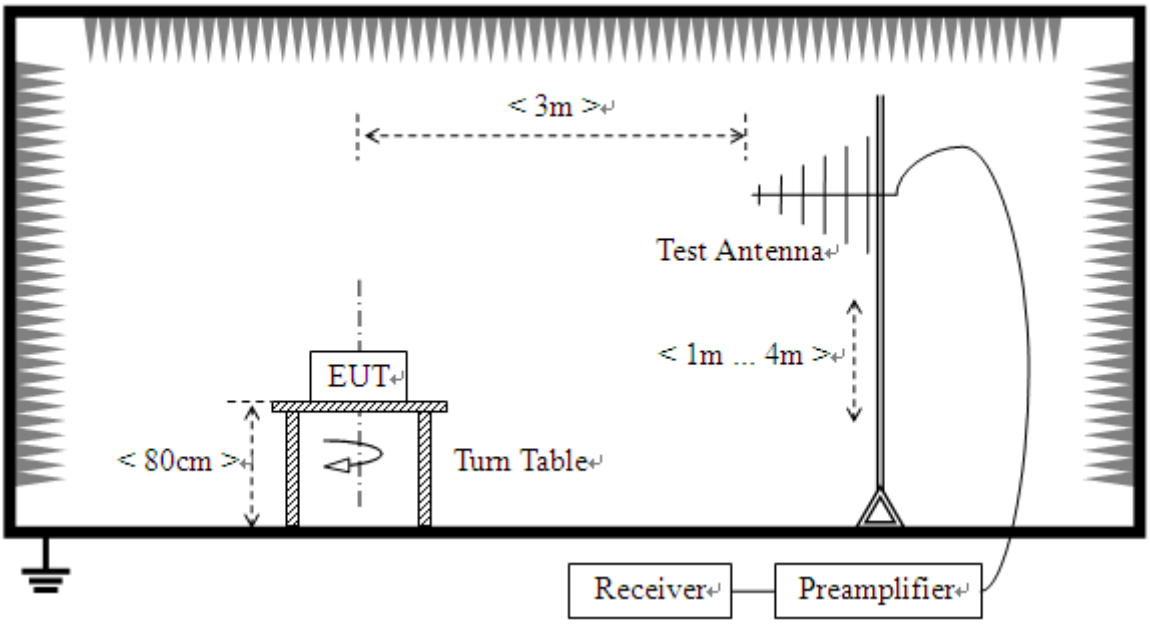
The measuring equipment is listed in the section 3 of this test report.

2.6.3. Test Setup

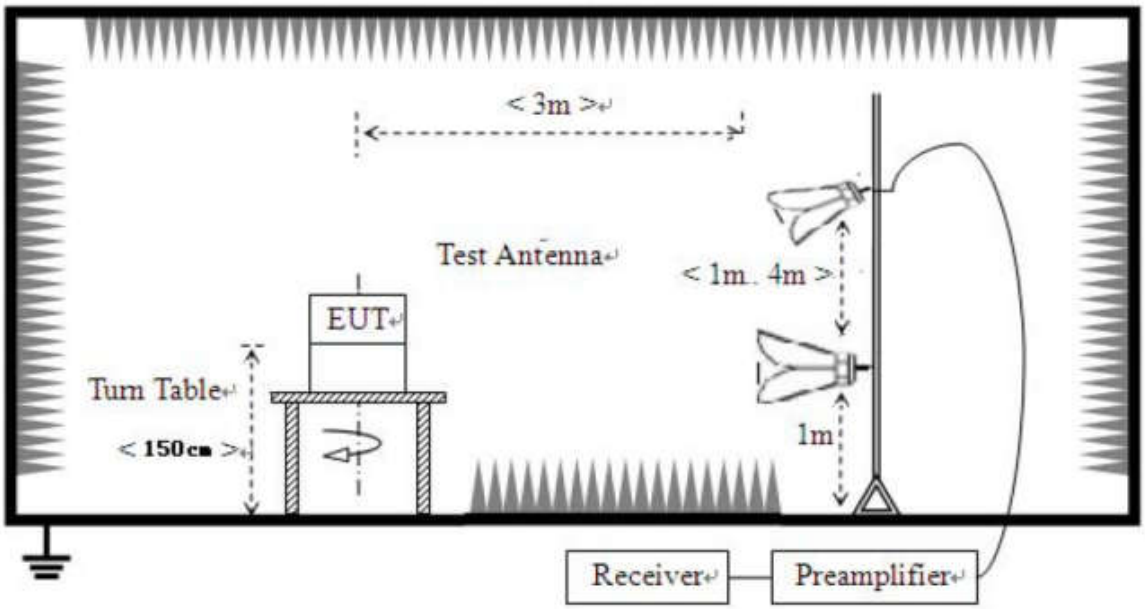
For radiated emissions from 9 kHz to 30 MHz



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/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

2.6.5. Test Result of Radiated Band Edge and Spurious Emission

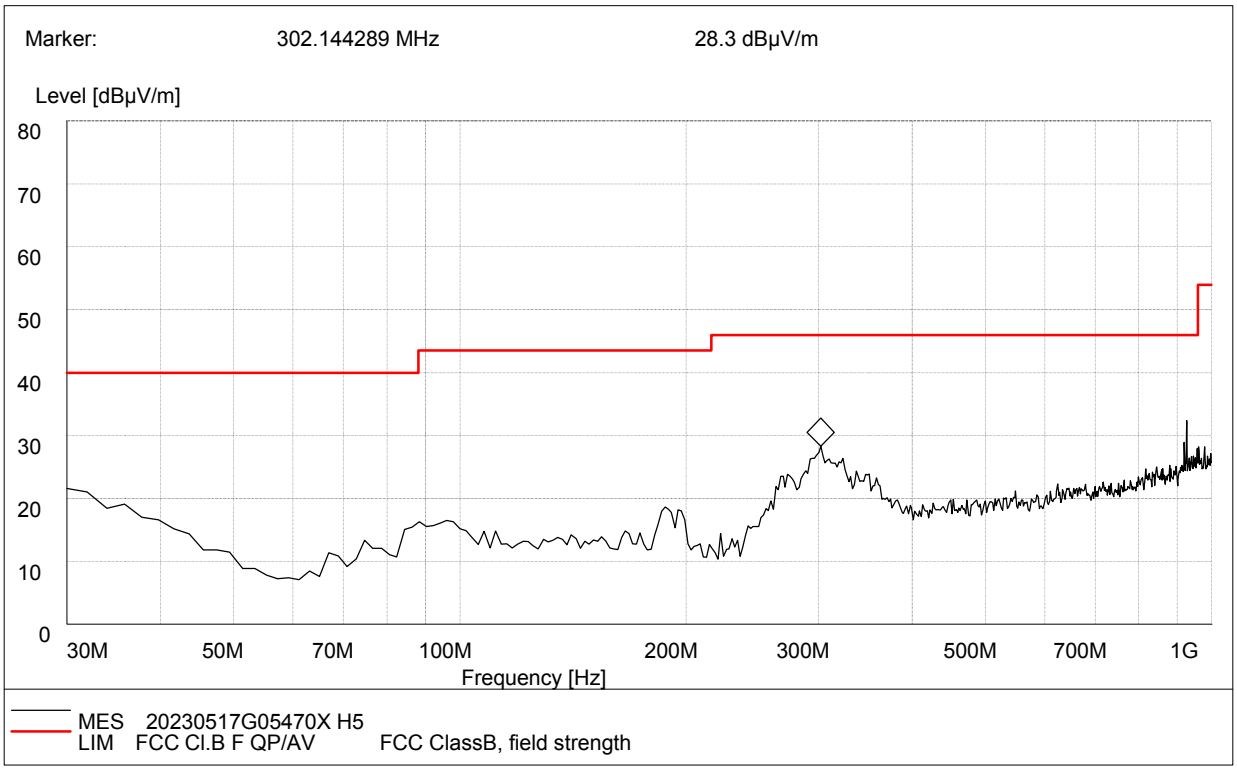
NOTE 1: For 9 kHz to 30MHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

NOTE 2: For 30MHz to 1GHz, All of the EUT Configure mode were tested and found 802.11a 5180MHz 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

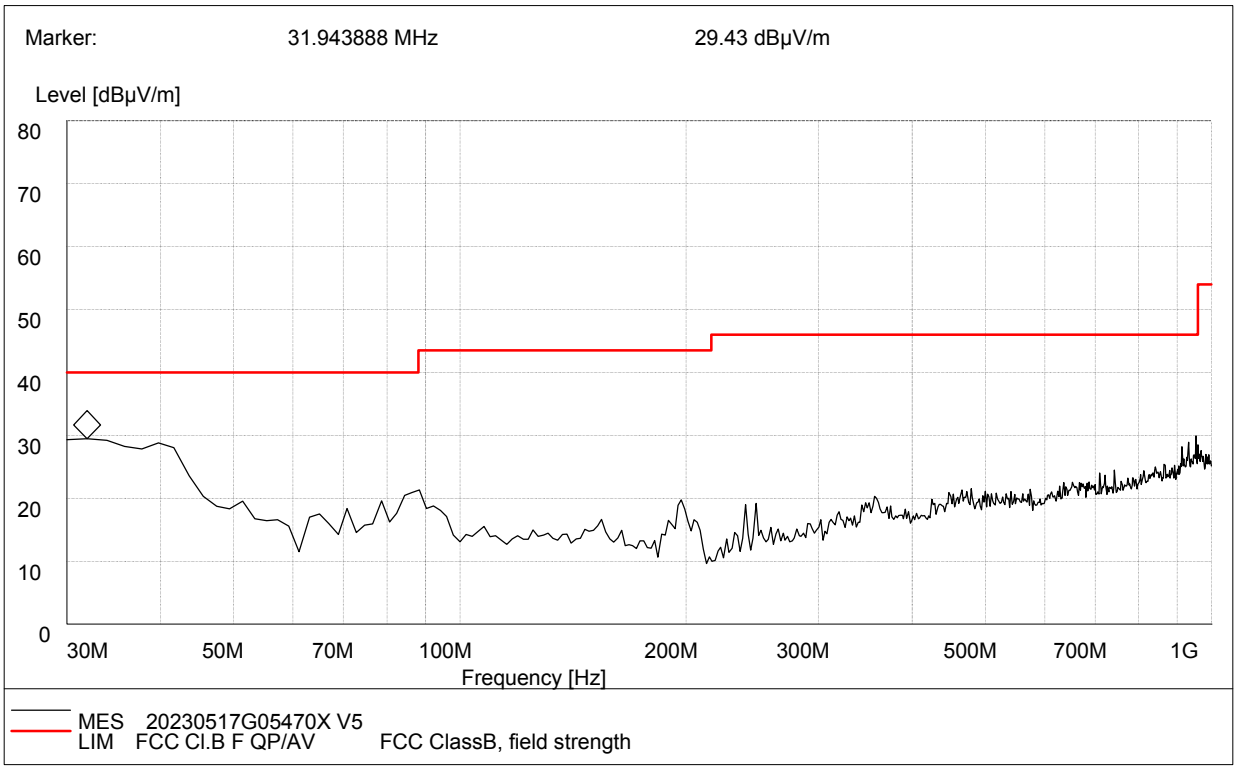


Frequency (MHz)	QuasiPeak (dB µ V/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dB µ V/m)	Margin (dB)	Polarity
30.240000	20.60	120.00	19.3	100.0	40.0	19.40	Horizontal
35.490000	19.14	120.00	16.7	100.0	40.0	20.86	Horizontal
88.310000	16.30	120.00	8.5	100.0	43.5	27.20	Horizontal
187.450000	18.67	120.00	11.0	100.0	43.5	24.83	Horizontal
302.140000	27.30	120.00	15.7	100.0	46.0	18.70	Horizontal
624.820000	21.32	120.00	19.9	100.0	46.0	24.68	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 µ V/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dB µ V/m)	Margin (dB)	Polarity
32.010000	28.43	120.00	19.3	100.0	40.0	11.57	Vertical
40.230000	27.75	120.00	14.0	100.0	40.0	12.25	Vertical
88.590000	20.30	120.00	8.5	100.0	43.5	23.20	Vertical
197.450000	18.73	120.00	10.0	100.0	43.5	24.77	Vertical
356.570000	20.33	120.00	16.9	100.0	46.0	25.67	Vertical
743.400000	23.45	120.00	21.9	100.0	46.0	22.55	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_802.11n-HT20_5180MHz									
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	47.99	68.20	-20.21	1.40	190	47.55	0.44	Horizontal	Peak
5150.00	39.01	54.00	-14.99	1.40	190	38.57	0.44	Horizontal	Average
10360.00	53.79	68.20	-14.41	1.40	190	43.33	10.46	Horizontal	Peak
10360.00	44.22	54.00	-9.78	1.40	190	33.76	10.46	Horizontal	Average
5150.00	48.52	68.20	-19.68	1.70	180	48.08	0.44	Vertical	Peak
5150.00	38.75	54.00	-15.25	1.70	180	38.31	0.44	Vertical	Average
10360.00	53.86	68.20	-14.34	1.70	180	43.40	10.46	Vertical	Peak
10360.00	43.98	54.00	-10.02	1.70	180	33.52	10.46	Vertical	Average
U-NII-1_802.11n-HT20_5240MHz									
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	47.24	68.20	-20.96	1.40	190	46.99	0.25	Horizontal	Peak
5350.00	38.20	54.00	-15.80	1.40	190	37.95	0.25	Horizontal	Average
10480.00	52.28	68.20	-15.92	1.40	190	41.28	11.00	Horizontal	Peak
10480.00	44.36	54.00	-9.64	1.40	190	33.36	11.00	Horizontal	Average
5350.00	47.31	68.20	-20.89	1.70	180	47.06	0.25	Vertical	Peak
5350.00	37.92	54.00	-16.08	1.70	180	37.67	0.25	Vertical	Average
10480.00	53.64	68.20	-14.56	1.70	180	42.64	11.00	Vertical	Peak
10480.00	44.58	54.00	-9.42	1.70	180	33.58	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									
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	47.58	68.20	-20.62	1.40	190	47.14	0.44	Horizontal	Peak
5150.00	38.83	54.00	-15.17	1.40	190	38.39	0.44	Horizontal	Average
10380.00	54.18	68.20	-14.02	1.40	190	43.65	10.53	Horizontal	Peak
10380.00	44.39	54.00	-9.61	1.40	190	33.86	10.53	Horizontal	Average
5150.00	48.11	68.20	-20.09	1.70	180	47.67	0.44	Vertical	Peak
5150.00	38.69	54.00	-15.31	1.70	180	38.25	0.44	Vertical	Average
10380.00	53.45	68.20	-14.75	1.70	180	42.92	10.53	Vertical	Peak
10380.00	44.08	54.00	-9.92	1.70	180	33.55	10.53	Vertical	Average
U-NII-1_802.11n-HT40_5230MHz									
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	47.60	68.20	-20.60	1.40	190	47.35	0.25	Horizontal	Peak
5350.00	38.33	54.00	-15.67	1.40	190	38.08	0.25	Horizontal	Average
10460.00	52.22	68.20	-15.98	1.40	190	41.31	10.91	Horizontal	Peak
10460.00	44.62	54.00	-9.38	1.40	190	33.71	10.91	Horizontal	Average
5350.00	47.50	68.20	-20.70	1.70	180	47.25	0.25	Vertical	Peak
5350.00	37.87	54.00	-16.13	1.70	180	37.62	0.25	Vertical	Average
10460.00	53.34	68.20	-14.86	1.70	180	42.43	10.91	Vertical	Peak
10460.00	44.88	54.00	-9.12	1.70	180	33.97	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									
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	48.34	68.20	-19.86	1.40	190	47.90	0.44	Horizontal	Peak
5150.00	39.35	54.00	-14.65	1.40	190	38.91	0.44	Horizontal	Average
5350.00	47.31	68.20	-20.89	1.40	190	47.06	0.25	Horizontal	Peak
5350.00	38.21	54.00	-15.79	1.40	190	37.96	0.25	Horizontal	Average
10420.00	51.71	68.20	-16.49	1.40	190	41.00	10.71	Horizontal	Peak
10420.00	43.96	54.00	-10.04	1.40	190	33.25	10.71	Horizontal	Average
5150.00	48.87	68.20	-19.33	1.70	180	48.43	0.44	Vertical	Peak
5150.00	38.72	54.00	-15.28	1.70	180	38.28	0.44	Vertical	Average
5350.00	46.96	68.20	-21.24	1.70	180	46.71	0.25	Vertical	Peak
5350.00	38.31	54.00	-15.69	1.70	180	38.06	0.25	Vertical	Average
10420.00	52.58	68.20	-15.62	1.70	180	41.87	10.71	Vertical	Peak
10420.00	43.29	54.00	-10.71	1.70	180	32.58	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_802.11n-HT20_5260MHz									
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	48.18	68.20	-20.02	1.50	170	47.74	0.44	Horizontal	Peak
5150.00	39.30	54.00	-14.70	1.50	170	38.86	0.44	Horizontal	Average
10520.00	53.78	68.20	-14.42	1.50	170	42.60	11.18	Horizontal	Peak
10520.00	44.48	54.00	-9.52	1.50	170	33.30	11.18	Horizontal	Average
5150.00	48.52	68.20	-19.68	1.70	180	48.08	0.44	Vertical	Peak
5150.00	38.55	54.00	-15.45	1.70	180	38.11	0.44	Vertical	Average
10520.00	54.26	68.20	-13.94	1.70	180	43.08	11.18	Vertical	Peak
10520.00	43.56	54.00	-10.44	1.70	180	32.38	11.18	Vertical	Average
U-NII-2A_802.11n-HT20_5320MHz									
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	46.96	68.20	-21.24	1.50	170	46.71	0.25	Horizontal	Peak
5350.00	37.83	54.00	-16.17	1.50	170	37.58	0.25	Horizontal	Average
10640.00	51.85	68.20	-16.35	1.50	170	40.53	11.32	Horizontal	Peak
10640.00	44.65	54.00	-9.35	1.50	170	33.33	11.32	Horizontal	Average
5350.00	47.07	68.20	-21.13	1.70	180	46.82	0.25	Vertical	Peak
5350.00	38.29	54.00	-15.71	1.70	180	38.04	0.25	Vertical	Average
10640.00	54.11	68.20	-14.09	1.70	180	42.79	11.32	Vertical	Peak
10640.00	45.04	54.00	-8.96	1.70	180	33.72	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									
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	48.22	68.20	-19.98	1.50	170	47.78	0.44	Horizontal	Peak
5150.00	39.18	54.00	-14.82	1.50	170	38.74	0.44	Horizontal	Average
10540.00	53.30	68.20	-14.90	1.50	170	42.04	11.26	Horizontal	Peak
10540.00	44.11	54.00	-9.89	1.50	170	32.85	11.26	Horizontal	Average
5150.00	48.88	68.20	-19.32	1.70	180	48.44	0.44	Vertical	Peak
5150.00	38.62	54.00	-15.38	1.70	180	38.18	0.44	Vertical	Average
10540.00	54.51	68.20	-13.69	1.70	180	43.25	11.26	Vertical	Peak
10540.00	43.73	54.00	-10.27	1.70	180	32.47	11.26	Vertical	Average
U-NII-2A_802.11n-HT40_5310MHz									
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	47.09	68.20	-21.11	1.50	170	46.84	0.25	Horizontal	Peak
5350.00	37.75	54.00	-16.25	1.50	170	37.50	0.25	Horizontal	Average
10620.00	51.38	68.20	-16.82	1.50	170	39.97	11.41	Horizontal	Peak
10620.00	44.97	54.00	-9.03	1.50	170	33.56	11.41	Horizontal	Average
5350.00	46.81	68.20	-21.39	1.70	180	46.56	0.25	Vertical	Peak
5350.00	38.39	54.00	-15.61	1.70	180	38.14	0.25	Vertical	Average
10620.00	54.17	68.20	-14.03	1.70	180	42.76	11.41	Vertical	Peak
10620.00	44.90	54.00	-9.10	1.70	180	33.49	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									
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	48.61	68.20	-19.59	1.50	170	48.17	0.44	Horizontal	Peak
5150.00	38.75	54.00	-15.25	1.50	170	38.31	0.44	Horizontal	Average
5350.00	47.47	68.20	-20.73	1.50	170	47.22	0.25	Horizontal	Peak
5350.00	37.39	54.00	-16.61	1.50	170	37.14	0.25	Horizontal	Average
10580.00	51.75	68.20	-16.45	1.50	170	40.31	11.44	Horizontal	Peak
10580.00	45.34	54.00	-8.66	1.50	170	33.90	11.44	Horizontal	Average
5150.00	49.31	68.20	-18.89	1.70	180	48.87	0.44	Vertical	Peak
5150.00	38.34	54.00	-15.66	1.70	180	37.90	0.44	Vertical	Average
5350.00	46.53	68.20	-21.67	1.70	180	46.28	0.25	Vertical	Peak
5350.00	38.60	54.00	-15.40	1.70	180	38.35	0.25	Vertical	Average
10580.00	54.52	68.20	-13.68	1.70	180	43.08	11.44	Vertical	Peak
10580.00	45.07	54.00	-8.93	1.70	180	33.63	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-2C_802.11n-HT20_5500MHz									
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	47.94	68.20	-20.26	1.40	190	47.98	-0.04	Horizontal	Peak
5470.00	38.43	54.00	-15.57	1.40	190	38.47	-0.04	Horizontal	Average
11000.00	52.28	68.20	-15.92	1.40	190	40.86	11.42	Horizontal	Peak
11000.00	42.35	54.00	-11.65	1.40	190	30.93	11.42	Horizontal	Average
5470.00	47.53	68.20	-20.67	1.60	220	47.57	-0.04	Vertical	Peak
5470.00	39.14	54.00	-14.86	1.60	220	39.18	-0.04	Vertical	Average
11000.00	51.27	68.20	-16.93	1.60	220	39.85	11.42	Vertical	Peak
11000.00	43.06	54.00	-10.94	1.60	220	31.64	11.42	Vertical	Average
U-NII-2C_802.11n-HT20_5700MHz									
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	49.92	68.20	-18.28	1.40	190	48.62	1.30	Horizontal	Peak
5725.00	40.74	54.00	-13.26	1.40	190	39.44	1.30	Horizontal	Average
11400.00	52.84	68.20	-15.36	1.40	190	41.37	11.47	Horizontal	Peak
11400.00	43.16	54.00	-10.84	1.40	190	31.69	11.47	Horizontal	Average
5725.00	52.42	68.20	-15.78	1.60	220	51.12	1.30	Vertical	Peak
5725.00	42.92	54.00	-11.08	1.60	220	41.62	1.30	Vertical	Average
11400.00	52.03	68.20	-16.17	1.60	220	40.56	11.47	Vertical	Peak
11400.00	43.89	54.00	-10.11	1.60	220	32.42	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									
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	48.02	68.20	-20.18	1.40	190	48.06	-0.04	Horizontal	Peak
5470.00	37.98	54.00	-16.02	1.40	190	38.02	-0.04	Horizontal	Average
11020.00	52.44	68.20	-15.76	1.40	190	40.98	11.46	Horizontal	Peak
11020.00	42.51	54.00	-11.49	1.40	190	31.05	11.46	Horizontal	Average
5470.00	47.05	68.20	-21.15	1.60	220	47.09	-0.04	Vertical	Peak
5470.00	39.09	54.00	-14.91	1.60	220	39.13	-0.04	Vertical	Average
11020.00	50.83	68.20	-17.37	1.60	220	39.37	11.46	Vertical	Peak
11020.00	43.38	54.00	-10.62	1.60	220	31.92	11.46	Vertical	Average
U-NII-2C_802.11n-HT40_5670MHz									
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	50.36	68.20	-17.84	1.40	190	49.06	1.30	Horizontal	Peak
5725.00	41.12	54.00	-12.88	1.40	190	39.82	1.30	Horizontal	Average
11340.00	52.42	68.20	-15.78	1.40	190	41.00	11.42	Horizontal	Peak
11340.00	43.22	54.00	-10.78	1.40	190	31.80	11.42	Horizontal	Average
5725.00	52.57	68.20	-15.63	1.60	220	51.27	1.30	Vertical	Peak
5725.00	43.03	54.00	-10.97	1.60	220	41.73	1.30	Vertical	Average
11340.00	52.48	68.20	-15.72	1.60	220	41.06	11.42	Vertical	Peak
11340.00	43.84	54.00	-10.16	1.60	220	32.42	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									
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	48.43	68.20	-19.77	1.40	190	48.47	-0.04	Horizontal	Peak
5470.00	37.99	54.00	-16.01	1.40	190	38.03	-0.04	Horizontal	Average
11060.00	52.55	68.20	-15.65	1.40	190	41.02	11.53	Horizontal	Peak
11060.00	42.92	54.00	-11.08	1.40	190	31.39	11.53	Horizontal	Average
5470.00	47.13	68.20	-21.07	1.60	220	47.17	-0.04	Vertical	Peak
5470.00	39.13	54.00	-14.87	1.60	220	39.17	-0.04	Vertical	Average
11060.00	50.46	68.20	-17.74	1.60	220	38.93	11.53	Vertical	Peak
11060.00	43.10	54.00	-10.90	1.60	220	31.57	11.53	Vertical	Average
U-NII-2C_802.11ac-VHT80_5610MHz									
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	50.07	68.20	-18.13	1.40	190	48.77	1.30	Horizontal	Peak
5725.00	40.83	54.00	-13.17	1.40	190	39.53	1.30	Horizontal	Average
11220.00	52.31	68.20	-15.89	1.40	190	41.26	11.05	Horizontal	Peak
11220.00	43.52	54.00	-10.48	1.40	190	32.47	11.05	Horizontal	Average
5725.00	52.78	68.20	-15.42	1.60	220	51.48	1.30	Vertical	Peak
5725.00	43.20	54.00	-10.80	1.60	220	41.90	1.30	Vertical	Average
11220.00	52.20	68.20	-16.00	1.60	220	41.15	11.05	Vertical	Peak
11220.00	43.83	54.00	-10.17	1.60	220	32.78	11.05	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-HT20_5745MHz									
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	53.81	68.20	-14.39	1.60	210	53.01	0.80	Horizontal	Peak
5700.00	54.52	105.20	-50.68	1.60	210	53.28	1.24	Horizontal	Peak
5720.00	53.89	110.80	-56.91	1.60	210	52.61	1.28	Horizontal	Peak
5725.00	55.57	122.20	-66.63	1.60	210	54.27	1.30	Horizontal	Peak
11490.00	53.28	68.20	-14.92	1.60	210	41.73	11.55	Horizontal	Peak
11490.00	43.94	54.00	-10.06	1.60	210	32.39	11.55	Horizontal	Average
5650.00	54.22	68.20	-13.98	1.40	200	53.42	0.80	Vertical	Peak
5700.00	54.74	105.20	-50.46	1.40	200	53.50	1.24	Vertical	Peak
5720.00	54.98	110.80	-55.82	1.40	200	53.70	1.28	Vertical	Peak
5725.00	60.11	122.20	-62.09	1.40	200	58.81	1.30	Vertical	Peak
11490.00	52.57	68.20	-15.63	1.40	200	41.02	11.55	Vertical	Peak
11490.00	44.51	54.00	-9.49	1.40	200	32.96	11.55	Vertical	Average
U-NII-3_802.11n-HT20_5825MHz									
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	54.47	122.20	-67.73	1.60	210	52.65	1.82	Horizontal	Peak
5855.00	54.90	110.80	-55.90	1.60	210	53.05	1.85	Horizontal	Peak
5875.00	54.48	105.20	-50.72	1.60	210	52.50	1.98	Horizontal	Peak
5925.00	55.38	68.20	-12.82	1.60	210	53.26	2.12	Horizontal	Peak
11650.00	53.94	68.20	-14.26	1.60	210	42.30	11.64	Horizontal	Peak
11650.00	44.62	54.00	-9.38	1.60	210	32.98	11.64	Horizontal	Average
5850.00	54.65	122.20	-67.55	1.40	200	52.83	1.82	Vertical	Peak
5855.00	54.03	110.80	-56.77	1.40	200	52.18	1.85	Vertical	Peak
5875.00	54.62	105.20	-50.58	1.40	200	52.64	1.98	Vertical	Peak
5925.00	55.26	68.20	-12.94	1.40	200	53.14	2.12	Vertical	Peak
11650.00	53.27	68.20	-14.93	1.40	200	41.63	11.64	Vertical	Peak
11650.00	44.86	54.00	-9.14	1.40	200	33.22	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									
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	54.15	68.20	-14.05	1.60	210	53.35	0.80	Horizontal	Peak
5700.00	54.33	105.20	-50.87	1.60	210	53.09	1.24	Horizontal	Peak
5720.00	54.02	110.80	-56.78	1.60	210	52.74	1.28	Horizontal	Peak
5725.00	55.76	122.20	-66.44	1.60	210	54.46	1.30	Horizontal	Peak
11510.00	52.84	68.20	-15.36	1.60	210	41.28	11.56	Horizontal	Peak
11510.00	43.88	54.00	-10.12	1.60	210	32.32	11.56	Horizontal	Average
5650.00	54.24	68.20	-13.96	1.40	200	53.44	0.80	Vertical	Peak
5700.00	54.50	105.20	-50.70	1.40	200	53.26	1.24	Vertical	Peak
5720.00	54.82	110.80	-55.98	1.40	200	53.54	1.28	Vertical	Peak
5725.00	60.49	122.20	-61.71	1.40	200	59.19	1.30	Vertical	Peak
11510.00	52.12	68.20	-16.08	1.40	200	40.56	11.56	Vertical	Peak
11510.00	44.35	54.00	-9.65	1.40	200	32.79	11.56	Vertical	Average
U-NII-3_802.11n-HT40_5795MHz									
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	54.17	122.20	-68.03	1.60	210	52.35	1.82	Horizontal	Peak
5855.00	54.58	110.80	-56.22	1.60	210	52.73	1.85	Horizontal	Peak
5875.00	54.96	105.20	-50.24	1.60	210	52.98	1.98	Horizontal	Peak
5925.00	55.55	68.20	-12.65	1.60	210	53.43	2.12	Horizontal	Peak
11590.00	54.29	68.20	-13.91	1.60	210	42.78	11.51	Horizontal	Peak
11590.00	44.85	54.00	-9.15	1.60	210	33.34	11.51	Horizontal	Average
5850.00	55.02	122.20	-67.18	1.40	200	53.20	1.82	Vertical	Peak
5855.00	54.30	110.80	-56.50	1.40	200	52.45	1.85	Vertical	Peak
5875.00	54.68	105.20	-50.52	1.40	200	52.70	1.98	Vertical	Peak
5925.00	55.75	68.20	-12.45	1.40	200	53.63	2.12	Vertical	Peak
11590.00	53.26	68.20	-14.94	1.40	200	41.75	11.51	Vertical	Peak
11590.00	45.03	54.00	-8.97	1.40	200	33.52	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									
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	53.79	68.20	-14.41	1.60	210	52.99	0.80	Horizontal	Peak
5700.00	54.58	105.20	-50.62	1.60	210	53.34	1.24	Horizontal	Peak
5720.00	54.26	110.80	-56.54	1.60	210	52.98	1.28	Horizontal	Peak
5725.00	56.23	122.20	-65.97	1.60	210	54.93	1.30	Horizontal	Peak
5850.00	53.70	122.20	-68.50	1.60	210	51.88	1.82	Horizontal	Peak
5855.00	55.03	110.80	-55.77	1.60	210	53.18	1.85	Horizontal	Peak
5875.00	54.74	105.20	-50.46	1.60	210	52.76	1.98	Horizontal	Peak
5925.00	55.26	68.20	-12.94	1.60	210	53.14	2.12	Horizontal	Peak
11550.00	54.37	68.20	-13.83	1.60	210	42.83	11.54	Horizontal	Peak
11550.00	44.42	54.00	-9.58	1.60	210	32.88	11.54	Horizontal	Average
5650.00	54.73	68.20	-13.47	1.40	200	53.93	0.80	Vertical	Peak
5700.00	54.76	105.20	-50.44	1.40	200	53.52	1.24	Vertical	Peak
5720.00	54.57	110.80	-56.23	1.40	200	53.29	1.28	Vertical	Peak
5725.00	60.33	122.20	-61.87	1.40	200	59.03	1.30	Vertical	Peak
5850.00	55.42	122.20	-66.78	1.40	200	53.60	1.82	Vertical	Peak
5855.00	54.45	110.80	-56.35	1.40	200	52.60	1.85	Vertical	Peak
5875.00	54.30	105.20	-50.90	1.40	200	52.32	1.98	Vertical	Peak
5925.00	55.77	68.20	-12.43	1.40	200	53.65	2.12	Vertical	Peak
11550.00	52.87	68.20	-15.33	1.40	200	41.33	11.54	Vertical	Peak
11550.00	44.65	54.00	-9.35	1.60	200	33.11	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:

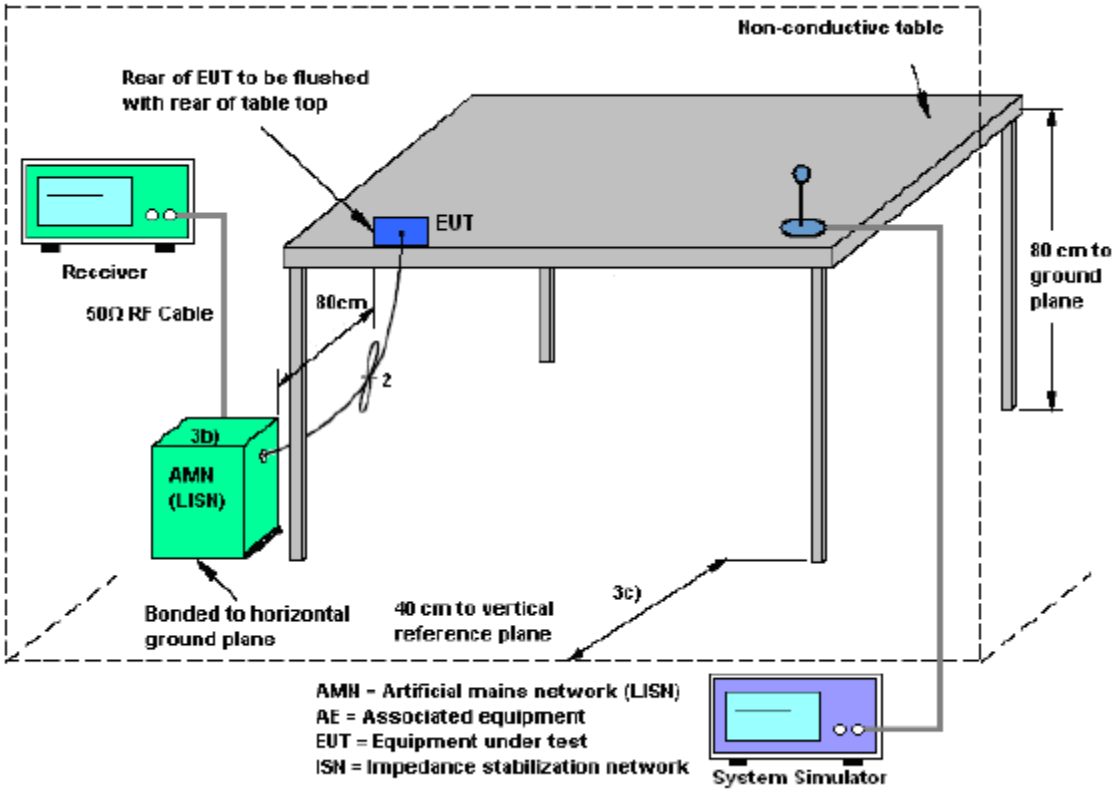
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency range (MHz)	Conducted Limit (dBμV)	
	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

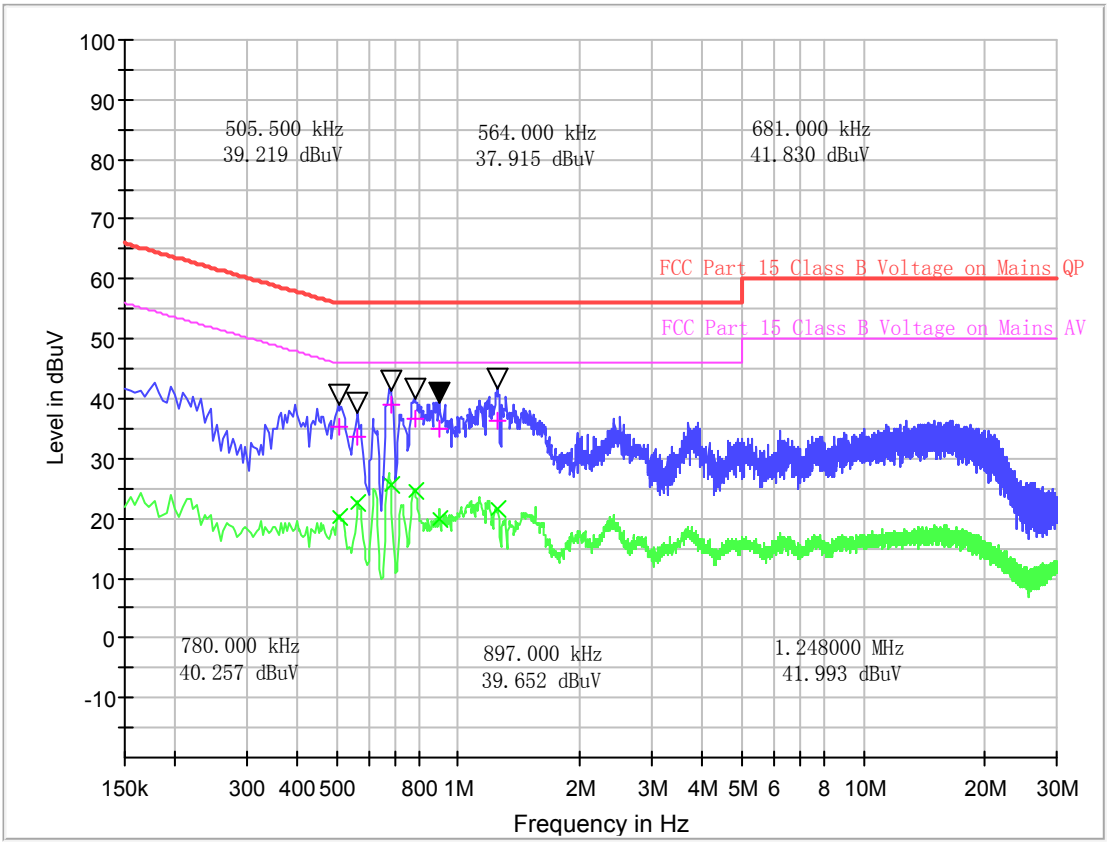
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 WIFI Link + Charging from Adapter.

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

Line Phase

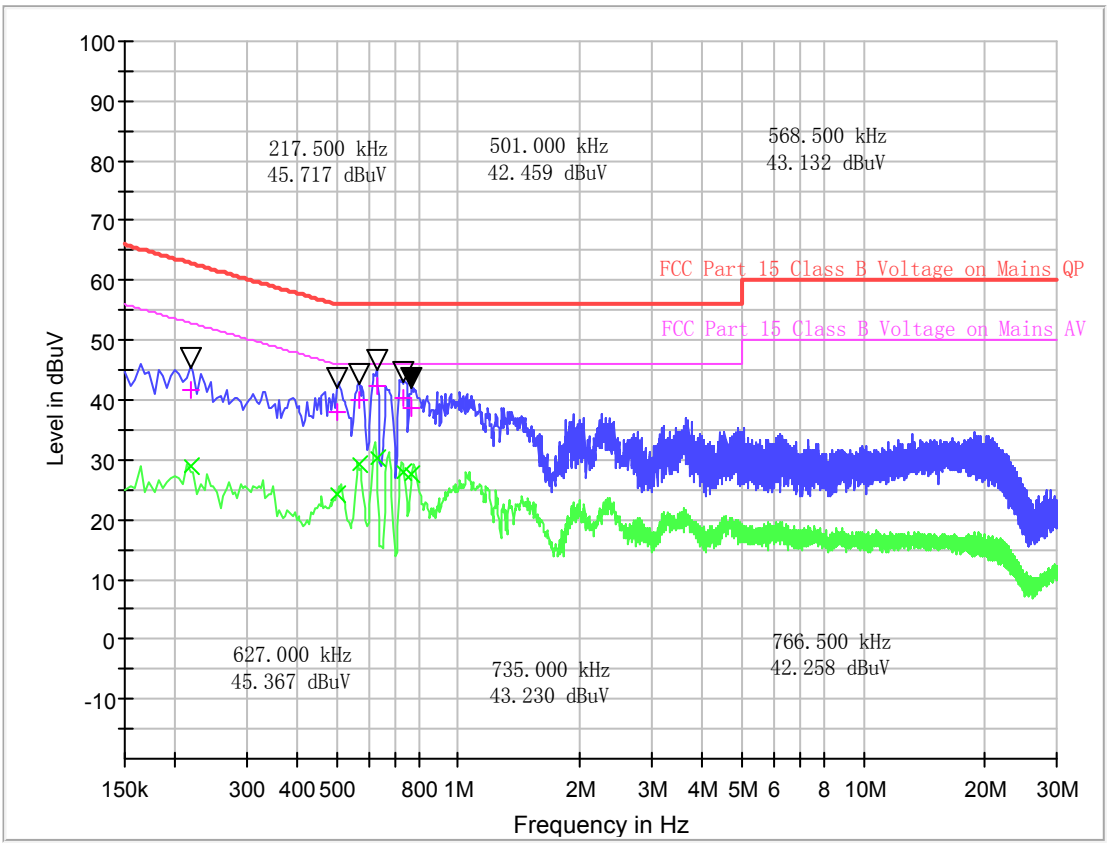


Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Corr.Factor (dB)	Margin - QPK	Limit - QPK	Margin - AV	Limit - AV (dBµV)
0.505500	35.16	20.06	10.2	20.84	56.0	25.94	46.0
0.564000	33.55	22.56	10.2	22.45	56.0	23.44	46.0
0.681000	38.96	25.54	10.3	17.04	56.0	20.46	46.0
0.780000	36.50	24.70	10.3	19.50	56.0	21.30	46.0
0.897000	34.83	19.79	10.3	21.17	56.0	26.21	46.0
1.248000	36.32	21.62	10.2	19.68	56.0	24.38	46.0

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)
0.217500	41.72	28.92	10.3	21.19	62.9	23.99	52.9
0.501000	38.14	24.37	10.2	17.86	56.0	21.63	46.0
0.568500	40.04	29.35	10.2	15.96	56.0	16.65	46.0
0.627000	42.43	30.29	10.2	13.57	56.0	15.71	46.0
0.735000	40.46	28.09	10.3	15.54	56.0	17.91	46.0
0.766500	38.53	27.52	10.3	17.47	56.0	18.48	46.0

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	2022.07.21	2023.07.20
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	2020.06.19	2023.06.18
5	Broadband antenna (30MHz~1GHz)	R&S	HL562	A0304224	2023.06.08	2026.06.07
6	EMI Horn Ant. (1-18G)	ETC	1209	A150402241	2021.01.02	2024.01.01
7	Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2023.06.01	2026.05.31
8	Amplifier 30M~1GHz	MILMEGA	80RF1000-10004	A140101634	2022.12.13	2023.12.12
9	Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2022.12.13	2023.12.12
10	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2023.02.20	2024.02.19
11	Test Receiver	R&S	ESIB7	A0501375	2023.03.16	2024.03.15
12	Broadband Ant.	2786	ETC	A150402240	2021.09.16	2024.03.03
13	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2019.03.26	2024.03.25
14	Test Receiver	KEYSIGHT	N9038A	A141202036	2022.07.21	2023.07.20
15	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2022.07.21	2023.07.20
16	Cable	MATCHING PAD	W7	/	2022.07.21	2023.07.20

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=2Uc(y))	2.8dB

Uncertainty of Radiated Emission Measurement (9kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	3.5dB

Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	3.91dB

Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	4.5dB

Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	4.9dB

Uncertainty of RF Conducted Measurement (9kHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	1.2dB

Appendix A

Output power

Test results

U-NII-1 AVGSA Output Power				
Mode	Test Frequency (MHz)	Max Power (dBm)	Limit (dBm)	Result
802.11n (20MHz)	5180	15.18	24	Pass
802.11n (20MHz)	5220	15.26	24	Pass
802.11n (20MHz)	5240	15.81	24	Pass
802.11n (40MHz)	5190	15.72	24	Pass
802.11n (40MHz)	5230	15.12	24	Pass
802.11ac (20MHz)	5180	15.11	24	Pass
802.11ac (20MHz)	5220	15.26	24	Pass
802.11ac (20MHz)	5240	15.76	24	Pass
802.11ac (40MHz)	5190	15.76	24	Pass
802.11ac (40MHz)	5230	15.21	24	Pass
802.11ac (80MHz)	5210	15.01	24	Pass
802.11a (20MHz)	5180	16.30	24	Pass
802.11a (20MHz)	5220	16.24	24	Pass
802.11a (20MHz)	5240	16.53	24	Pass

U-NII-2a AVGSA Output Power				
Mode	Test Frequency (MHz)	Max Power (dBm)	Limit (dBm)	Result
802.11n (20MHz)	5260	15.96	24	Pass
802.11n (20MHz)	5300	16.01	24	Pass
802.11n (20MHz)	5320	15.06	24	Pass
802.11n (40MHz)	5270	15.70	24	Pass
802.11n (40MHz)	5310	15.78	24	Pass
802.11ac (20MHz)	5260	15.10	24	Pass
802.11ac (20MHz)	5300	15.07	24	Pass
802.11ac (20MHz)	5320	15.05	24	Pass
802.11ac (40MHz)	5270	15.71	24	Pass
802.11ac (40MHz)	5310	15.79	24	Pass
802.11ac (80MHz)	5290	15.41	24	Pass
802.11a (20MHz)	5260	15.98	24	Pass
802.11a (20MHz)	5300	16.17	24	Pass
802.11a (20MHz)	5320	16.13	24	Pass

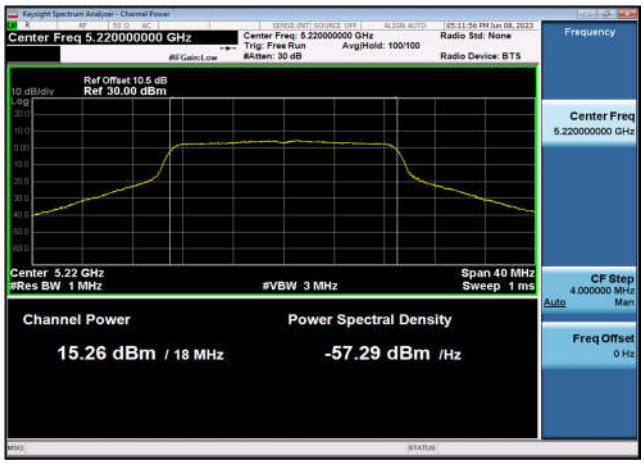
U-NII-2c AVGSA Output Power				
Mode	Test Frequency (MHz)	Max Power (dBm)	Limit (dBm)	Result
802.11n (20MHz)	5500	15.57	24	Pass
802.11n (20MHz)	5600	15.70	24	Pass
802.11n (20MHz)	5700	15.42	24	Pass
802.11n (40MHz)	5510	15.65	24	Pass
802.11n (40MHz)	5590	15.27	24	Pass
802.11n (40MHz)	5670	15.61	24	Pass
802.11ac (20MHz)	5500	15.43	24	Pass
802.11ac (20MHz)	5600	15.61	24	Pass
802.11ac (20MHz)	5700	15.34	24	Pass
802.11ac (40MHz)	5510	16.09	24	Pass
802.11ac (40MHz)	5590	15.93	24	Pass
802.11ac (40MHz)	5670	15.50	24	Pass
802.11ac (80MHz)	5530	15.11	24	Pass
802.11ac (80MHz)	5610	15.56	24	Pass
802.11a (20MHz)	5500	16.67	24	Pass
802.11a (20MHz)	5600	16.83	24	Pass
802.11a (20MHz)	5700	16.46	24	Pass

U-NII-3 AVGSA Output Power				
Mode	Test Frequency (MHz)	Max Power (dBm)	Limit (dBm)	Result
802.11n (20MHz)	5745	15.66	30	Pass
802.11n (20MHz)	5785	15.42	30	Pass
802.11n (20MHz)	5825	15.05	30	Pass
802.11n (40MHz)	5755	15.20	30	Pass
802.11n (40MHz)	5795	14.95	30	Pass
802.11ac (20MHz)	5745	15.63	30	Pass
802.11ac (20MHz)	5785	15.38	30	Pass
802.11ac (20MHz)	5825	15.04	30	Pass
802.11ac (40MHz)	5755	15.75	30	Pass
802.11ac (40MHz)	5795	15.48	30	Pass
802.11ac (80MHz)	5775	15.14	30	Pass
802.11a (20MHz)	5745	16.71	30	Pass
802.11a (20MHz)	5785	16.11	30	Pass
802.11a (20MHz)	5825	16.10	30	Pass

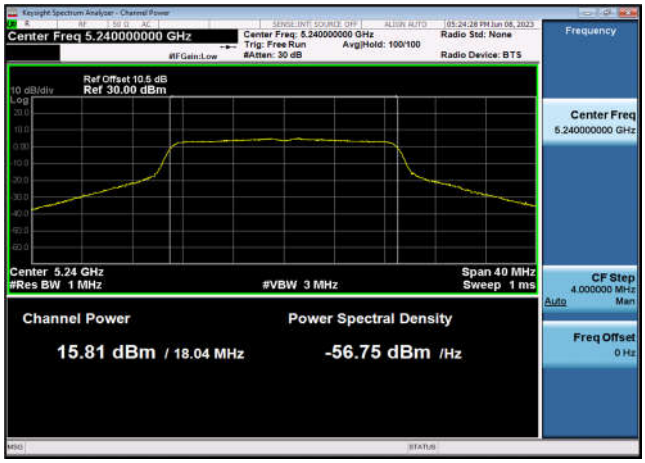
Test plots

U-NII-1 Output Power-802.11n(20MHz) ,5180MHz,Ant1

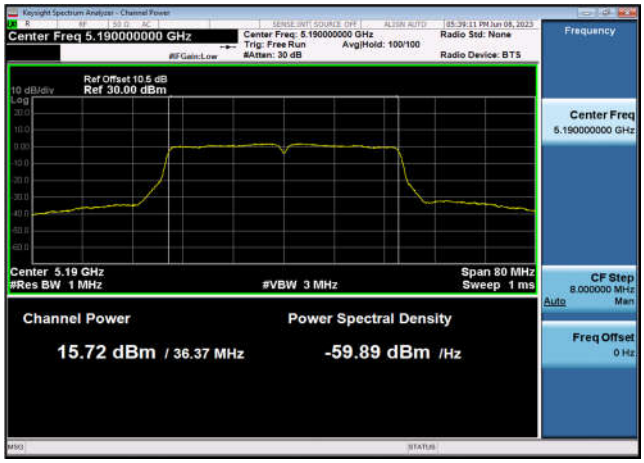
U-NII-1 Output Power-802.11n(20MHz) ,5220MHz,Ant1



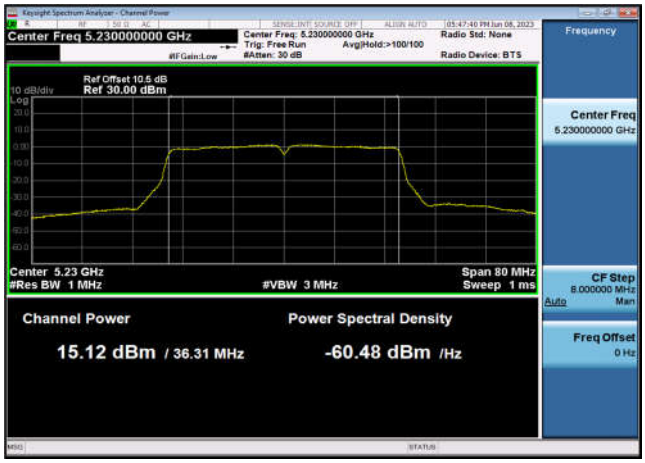
U-NII-1 Output Power-802.11n(20MHz) ,5240MHz,Ant1



U-NII-1 Output Power-802.11n(40MHz) ,5190MHz,Ant1

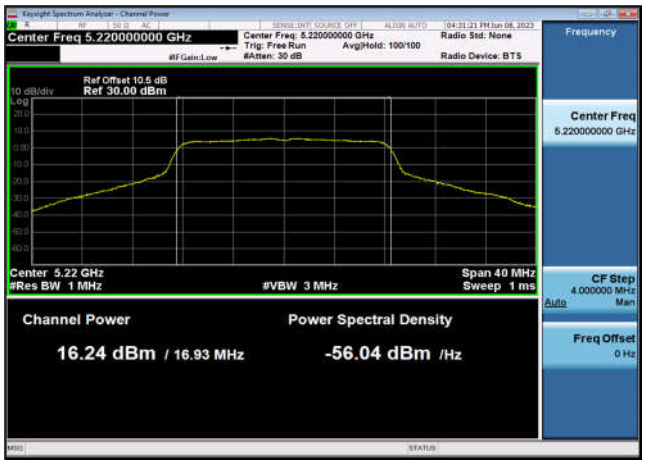


U-NII-1 Output Power-802.11n(40MHz) ,5230MHz,Ant1

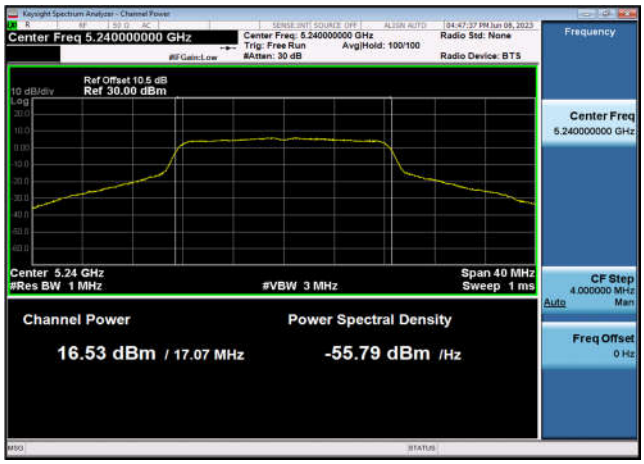


U-NII-1 Output Power-802.11a(20MHz) ,5180MHz,Ant1

U-NII-1 Output Power-802.11a(20MHz) ,5220MHz,Ant1

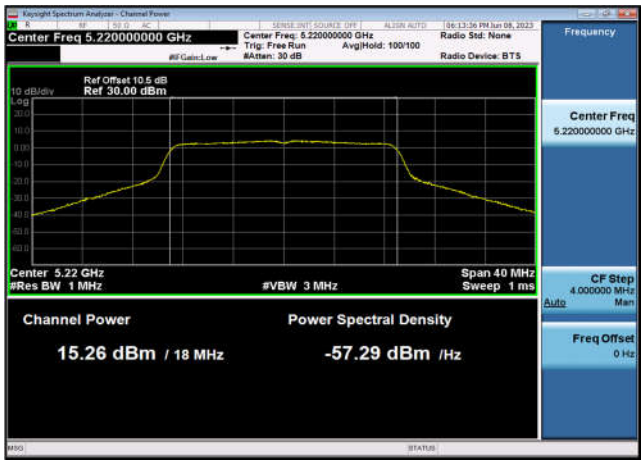


U-NII-1 Output Power-802.11a(20MHz) ,5240MHz,Ant1

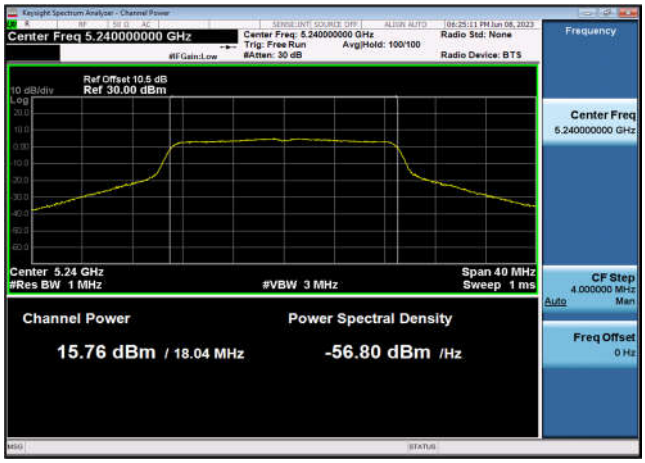


U-NII-1 Output Power-802.11ac(20MHz) ,5180MHz,Ant1

U-NII-1 Output Power-802.11ac(20MHz) ,5220MHz,Ant1



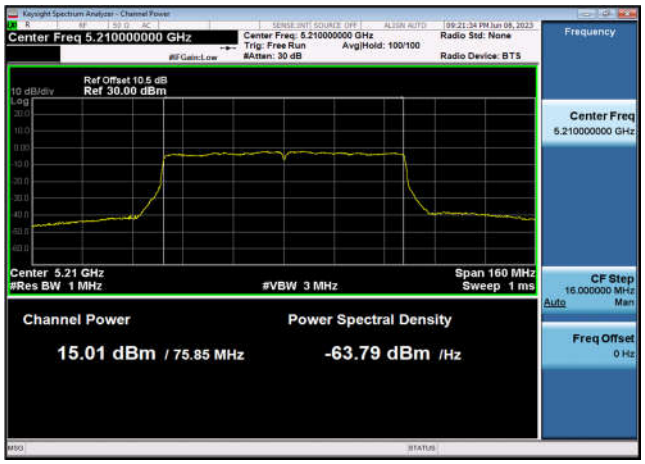
U-NII-1 Output Power-802.11ac(20MHz) ,5240MHz,Ant1



U-NII-1 Output Power-802.11ac(40MHz) ,5190MHz,Ant1

U-NII-1 Output Power-802.11ac(40MHz) ,5230MHz,Ant1

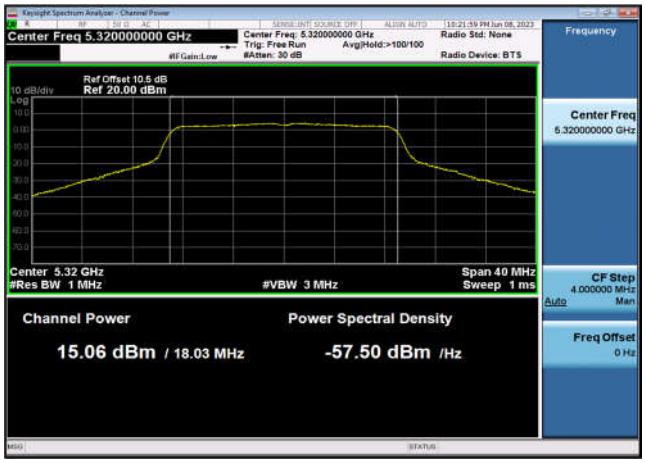
U-NII-1 Output Power-802.11ac(80MHz) ,5210MHz,Ant1



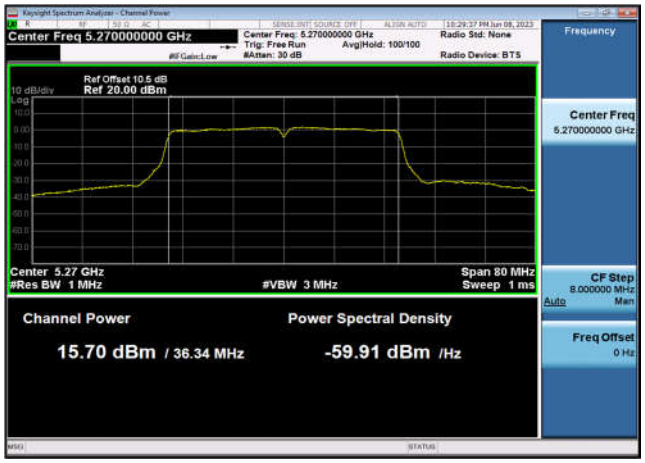
U-NII-2a Output Power-802.11n(20MHz) ,5260MHz,Ant1

U-NII-2a Output Power-802.11n(20MHz) ,5300MHz,Ant1

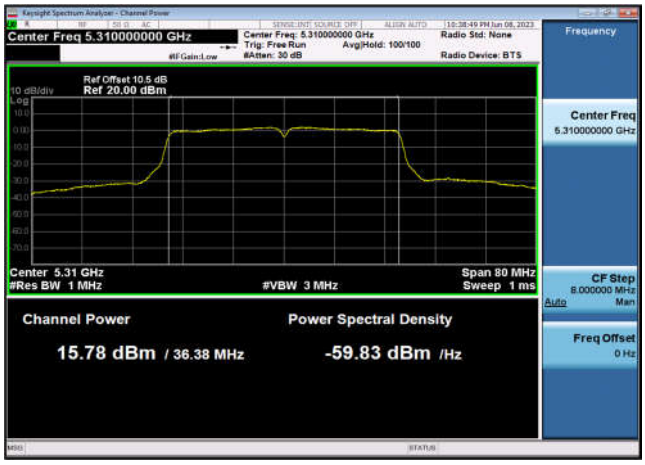
U-NII-2a Output Power-802.11n(20MHz) ,5320MHz,Ant1



U-NII-2a Output Power-802.11n(40MHz) ,5270MHz,Ant1



U-NII-2a Output Power-802.11n(40MHz) ,5310MHz,Ant1

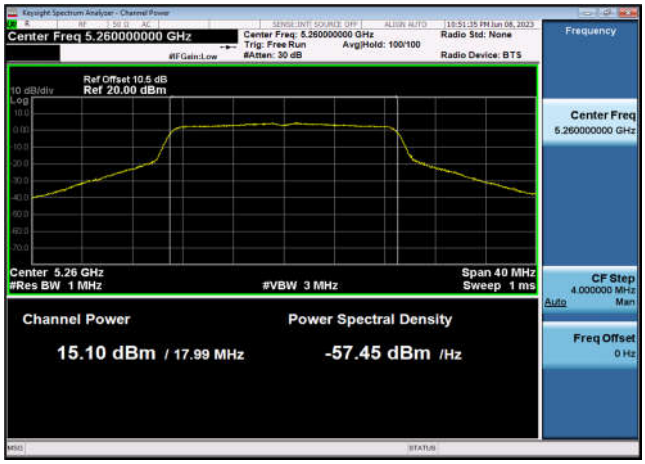


U-NII-2a Output Power-802.11a(20MHz) ,5260MHz,Ant1

U-NII-2a Output Power-802.11a(20MHz) ,5300MHz,Ant1

U-NII-2a Output Power-802.11a(20MHz) ,5320MHz,Ant1

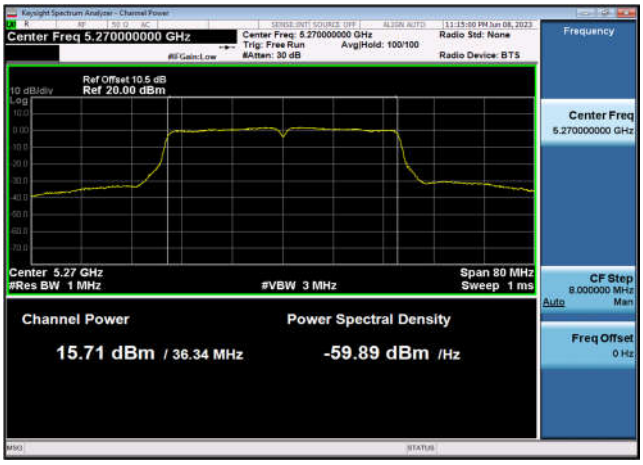
U-NII-2a Output Power-802.11ac(20MHz) ,5260MHz,Ant1



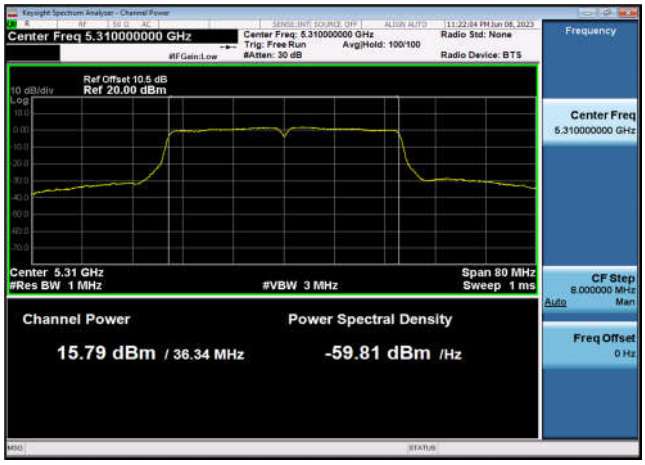
U-NII-2a Output Power-802.11ac(20MHz) ,5300MHz,Ant1

U-NII-2a Output Power-802.11ac(20MHz) ,5320MHz,Ant1

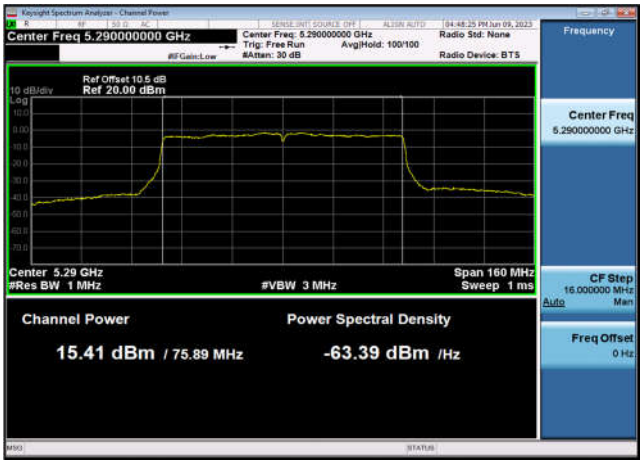
U-NII-2a Output Power-802.11ac(40MHz) ,5270MHz,Ant1



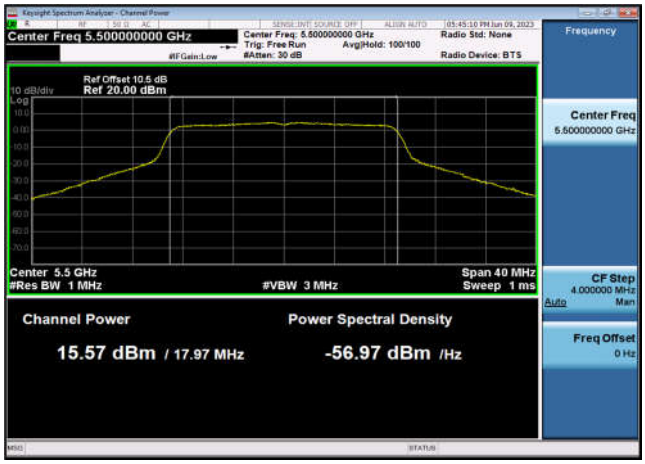
U-NII-2a Output Power-802.11ac(40MHz) ,5310MHz,Ant1



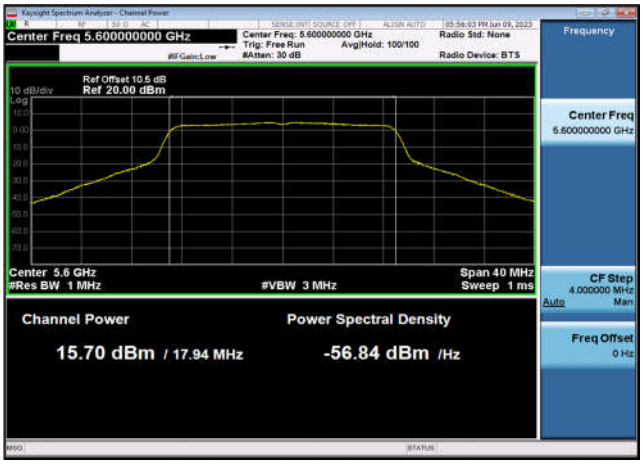
U-NII-2a Output Power-802.11ac(80MHz) ,5290MHz,Ant1



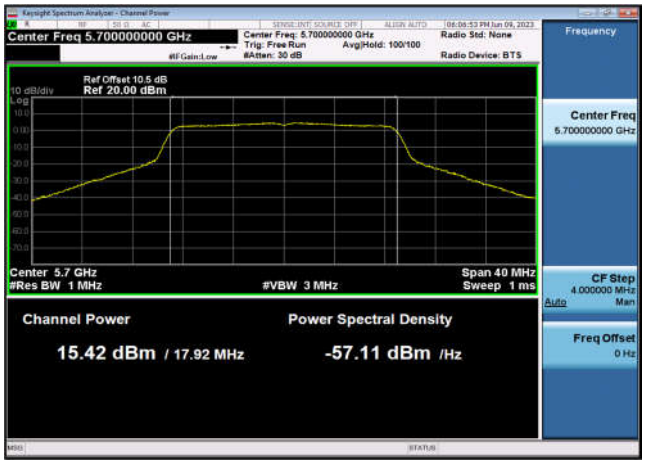
U-NII-2c Output Power-802.11n(20MHz) ,5500MHz,Ant1



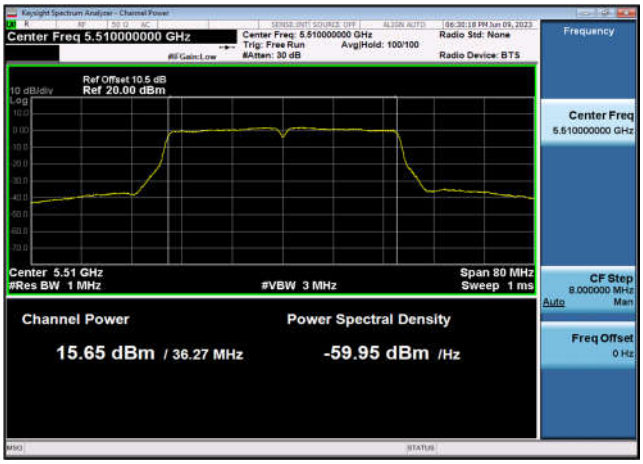
U-NII-2c Output Power-802.11n(20MHz) ,5600MHz,Ant1



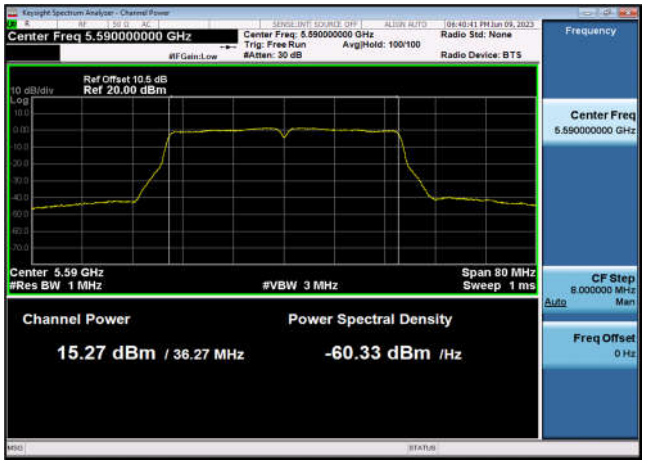
U-NII-2c Output Power-802.11n(20MHz) ,5700MHz,Ant1



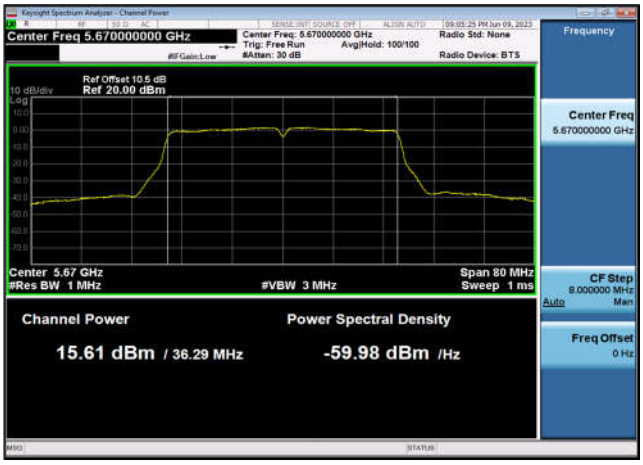
U-NII-2c Output Power-802.11n(40MHz) ,5510MHz,Ant1



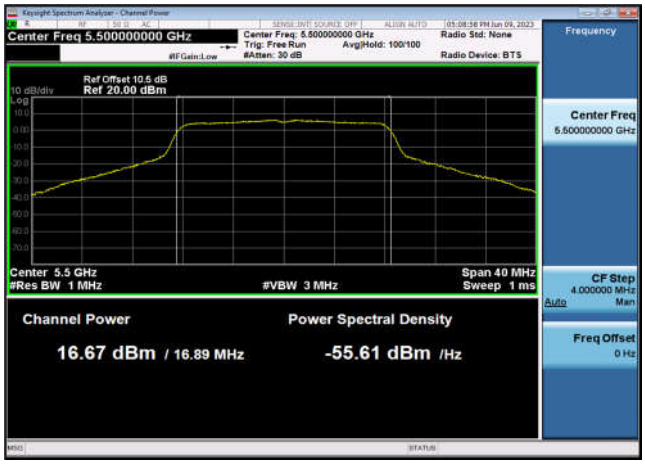
U-NII-2c Output Power-802.11n(40MHz) ,5590MHz,Ant1



U-NII-2c Output Power-802.11n(40MHz) ,5670MHz,Ant1

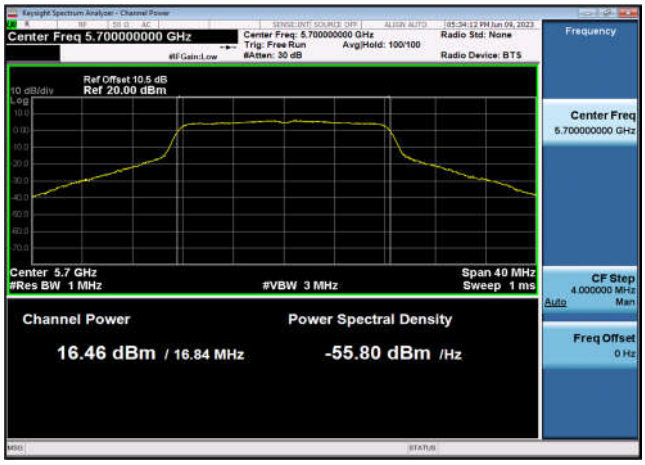


U-NII-2c Output Power-802.11a(20MHz) ,5500MHz,Ant1

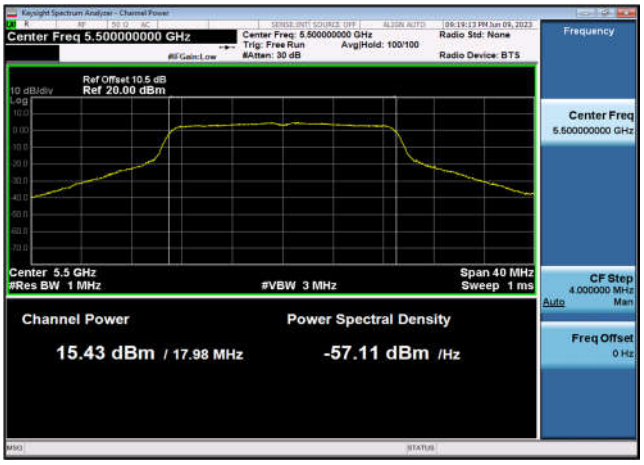


U-NII-2c Output Power-802.11a(20MHz) ,5600MHz,Ant1

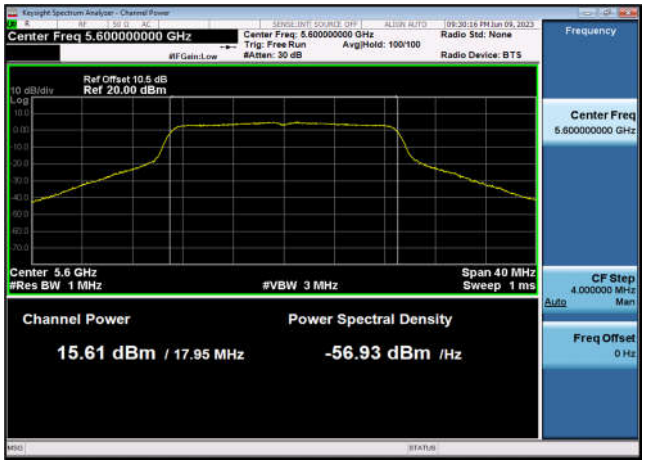
U-NII-2c Output Power-802.11a(20MHz) ,5700MHz,Ant1



U-NII-2c Output Power-802.11ac(20MHz) ,5500MHz,Ant1

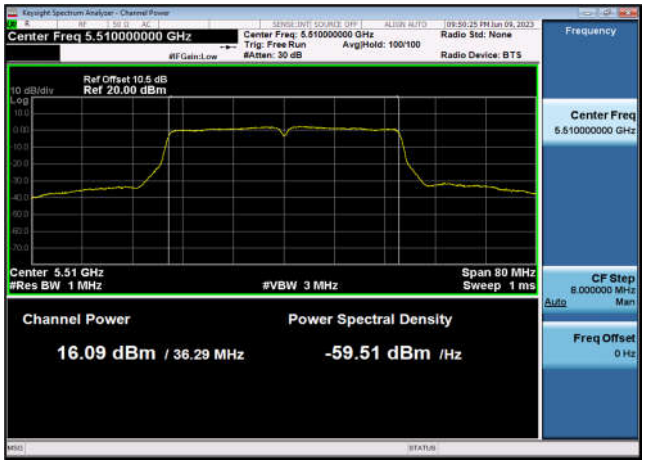


U-NII-2c Output Power-802.11ac(20MHz) ,5600MHz,Ant1

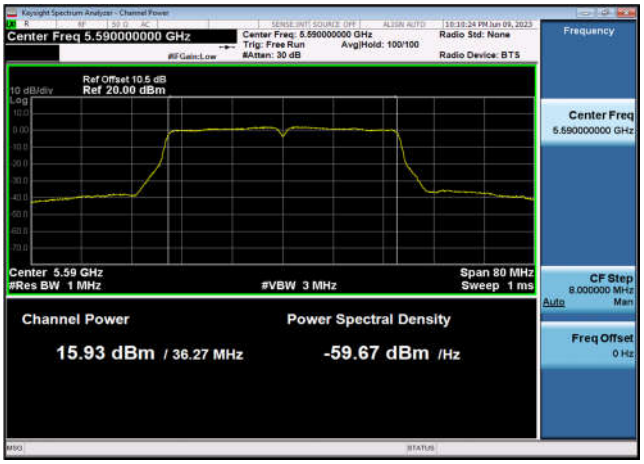


U-NII-2c Output Power-802.11ac(20MHz) ,5700MHz,Ant1

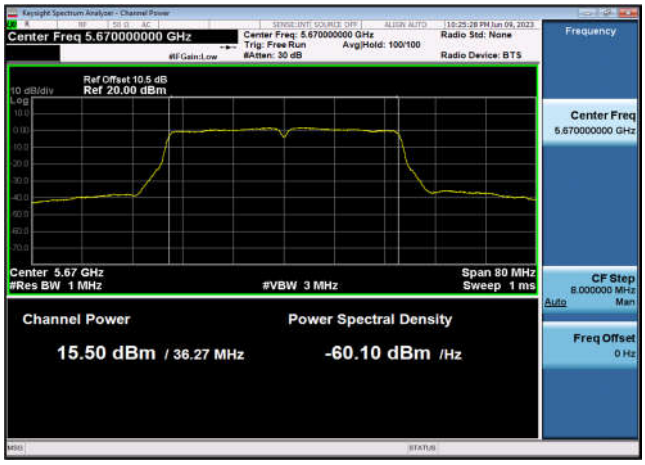
U-NII-2c Output Power-802.11ac(40MHz) ,5510MHz,Ant1



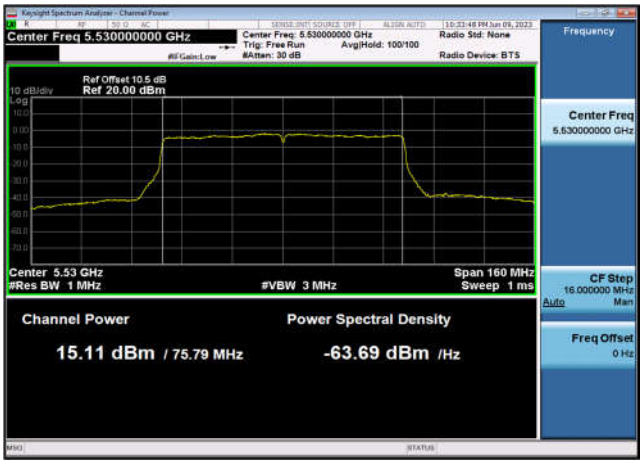
U-NII-2c Output Power-802.11ac(40MHz) ,5590MHz,Ant1



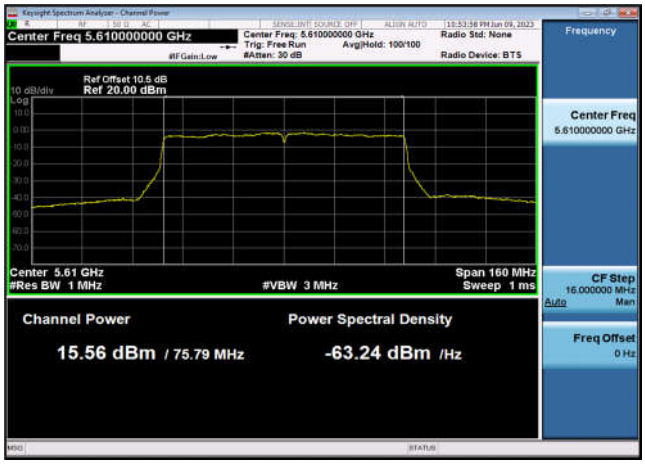
U-NII-2c Output Power-802.11ac(40MHz) ,5670MHz,Ant1



U-NII-2c Output Power-802.11ac(80MHz) ,5530MHz,Ant1



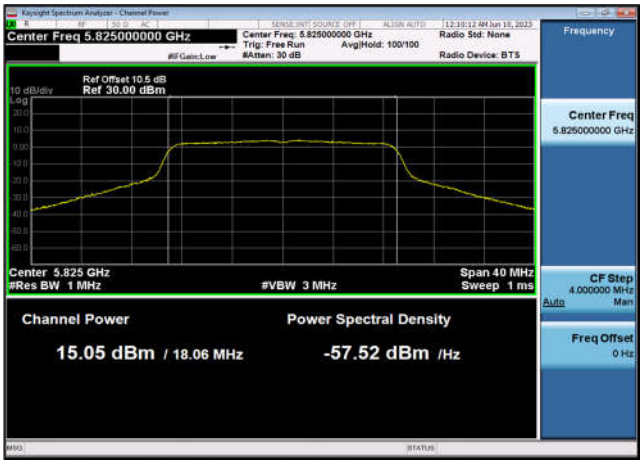
U-NII-2c Output Power-802.11ac(80MHz) ,5610MHz,Ant1



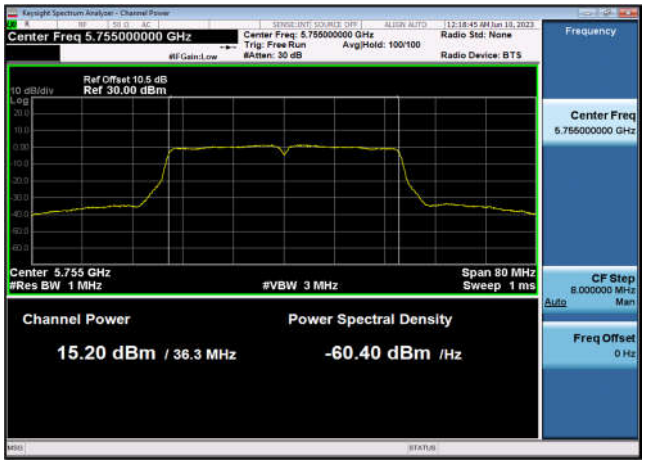
U-NII-3 Output Power-802.11n(20MHz) ,5745MHz,Ant1

U-NII-3 Output Power-802.11n(20MHz) ,5785MHz,Ant1

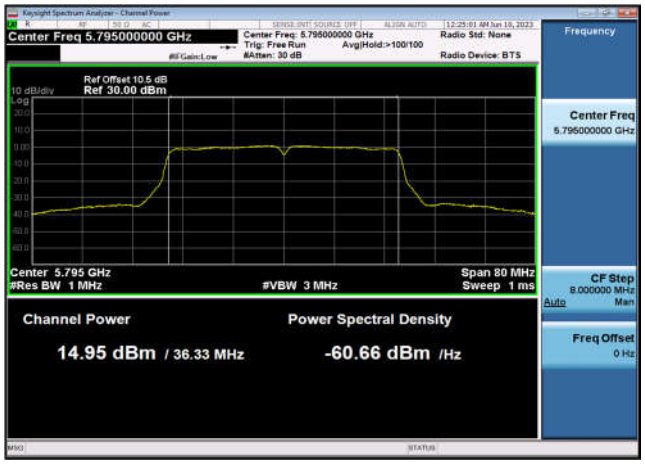
U-NII-3 Output Power-802.11n(20MHz) ,5825MHz,Ant1



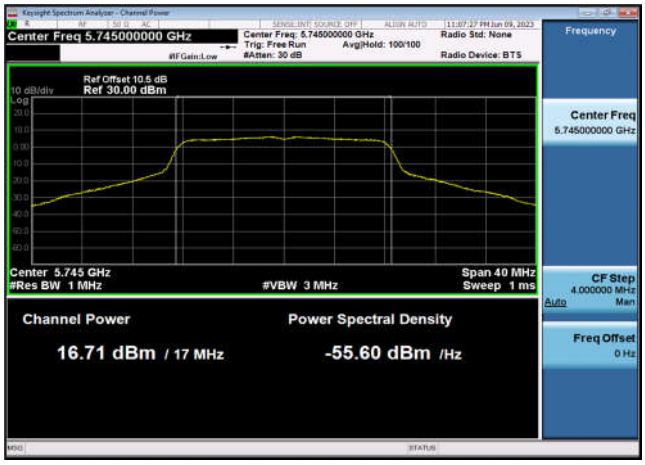
U-NII-3 Output Power-802.11n(40MHz) ,5755MHz,Ant1



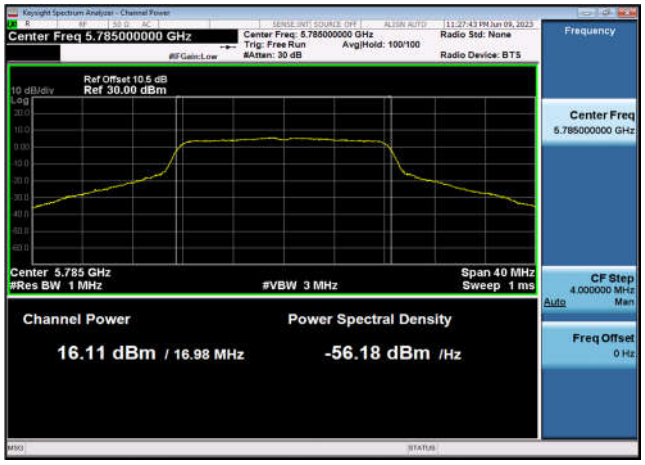
U-NII-3 Output Power-802.11n(40MHz) ,5795MHz,Ant1



U-NII-3 Output Power-802.11a(20MHz) ,5745MHz,Ant1

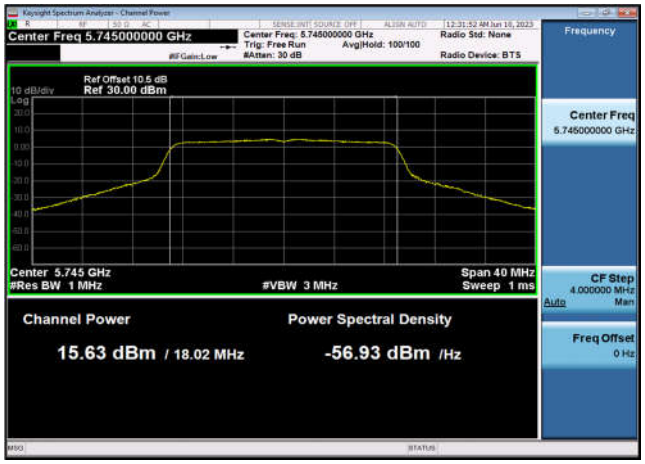


U-NII-3 Output Power-802.11a(20MHz) ,5785MHz,Ant1

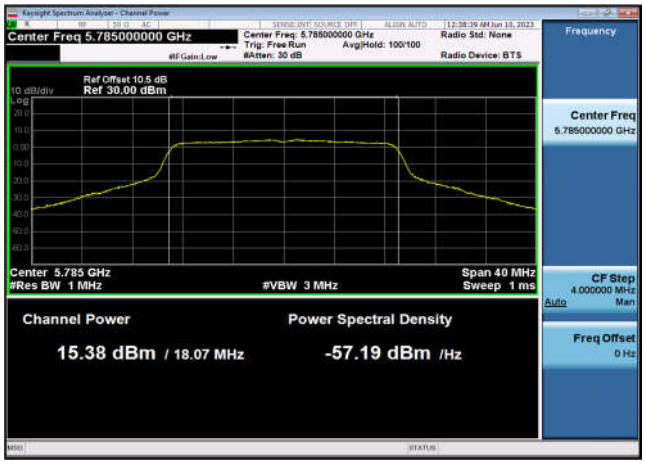


U-NII-3 Output Power-802.11a(20MHz) ,5825MHz,Ant1

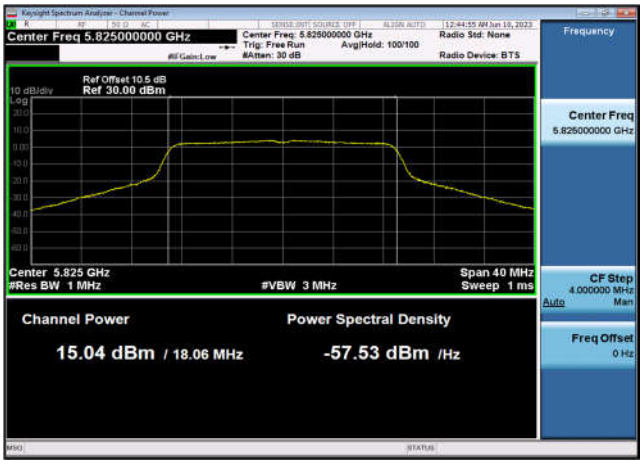
U-NII-3 Output Power-802.11ac(20MHz) ,5745MHz,Ant1



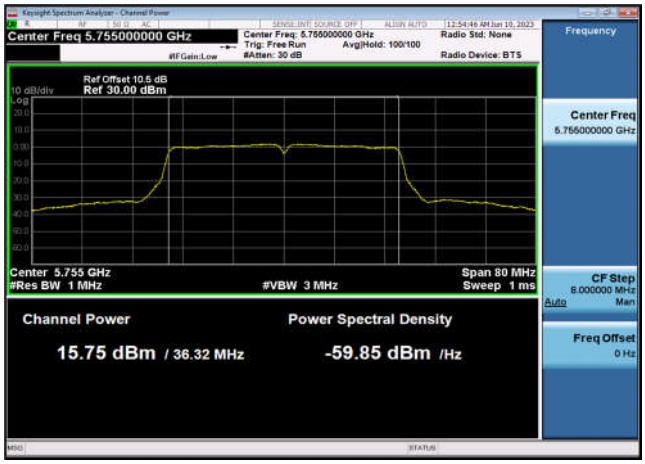
U-NII-3 Output Power-802.11ac(20MHz) ,5785MHz,Ant1



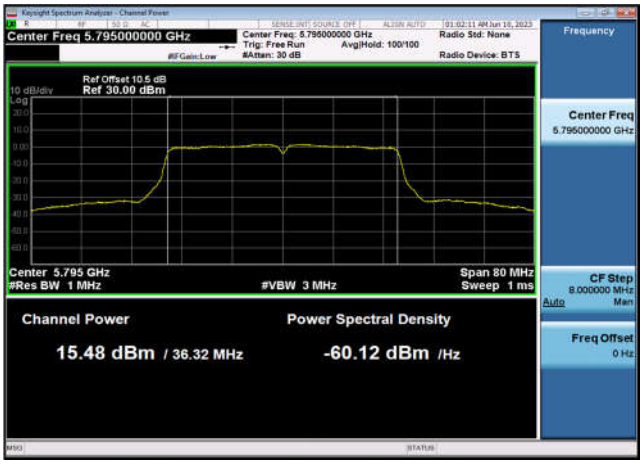
U-NII-3 Output Power-802.11ac(20MHz) ,5825MHz,Ant1



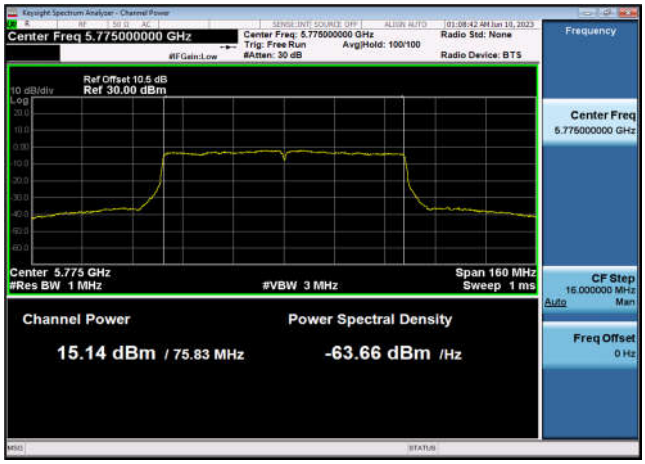
U-NII-3 Output Power-802.11ac(40MHz) ,5755MHz,Ant1



U-NII-3 Output Power-802.11ac(40MHz) ,5795MHz,Ant1



U-NII-3 Output Power-802.11ac(80MHz) ,5775MHz,Ant1



AVGSA Power Spectral Density

Test Result and Data

U-NII-1 AVGSA Power Spectral Density				
Mode	Test Frequency (MHz)	PSD (dBm/1MHz)	Limit (dBm/1MHz)	Result
802.11n (20MHz)	5180	4.845	11	Pass
802.11n (20MHz)	5220	4.428	11	Pass
802.11n (20MHz)	5240	5.063	11	Pass
802.11n (40MHz)	5190	2.117	11	Pass
802.11n (40MHz)	5230	1.621	11	Pass
802.11ac (20MHz)	5180	4.360	11	Pass
802.11ac (20MHz)	5220	4.499	11	Pass
802.11ac (20MHz)	5240	5.346	11	Pass
802.11ac (40MHz)	5190	2.062	11	Pass
802.11ac (40MHz)	5230	1.471	11	Pass
802.11ac (80MHz)	5210	-1.613	11	Pass
802.11a (20MHz)	5180	5.898	11	Pass
802.11a (20MHz)	5220	5.935	11	Pass
802.11a (20MHz)	5240	6.142	11	Pass

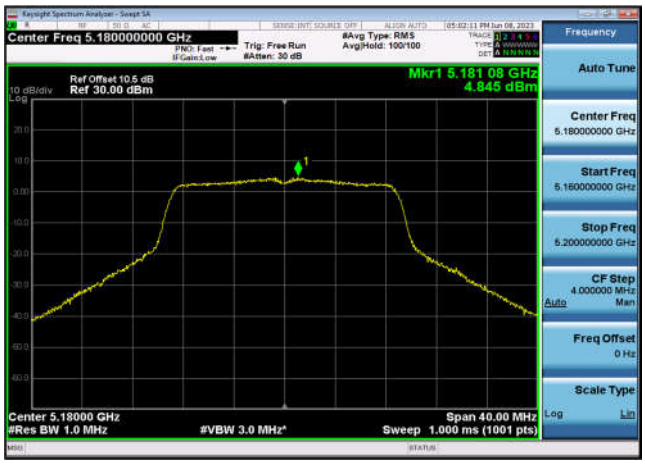
U-NII-2a AVGSA Power Spectral Density				
Mode	Test Frequency (MHz)	PSD (dBm/1MHz)	Limit (dBm/1MHz)	Result
802.11n (20MHz)	5260	5.743	11	Pass
802.11n (20MHz)	5300	5.621	11	Pass
802.11n (20MHz)	5320	4.930	11	Pass
802.11n (40MHz)	5270	2.398	11	Pass
802.11n (40MHz)	5310	2.600	11	Pass
802.11ac (20MHz)	5260	4.854	11	Pass
802.11ac (20MHz)	5300	5.041	11	Pass
802.11ac (20MHz)	5320	4.846	11	Pass
802.11ac (40MHz)	5270	2.358	11	Pass
802.11ac (40MHz)	5310	2.655	11	Pass
802.11ac (80MHz)	5290	-0.841	11	Pass
802.11a (20MHz)	5260	6.056	11	Pass
802.11a (20MHz)	5300	6.053	11	Pass
802.11a (20MHz)	5320	6.212	11	Pass

U-NII-2c AVGSA Power Spectral Density				
Mode	Test Frequency (MHz)	PSD (dBm/1MHz)	Limit (dBm/1MHz)	Result
802.11n (20MHz)	5500	5.699	11	Pass
802.11n (20MHz)	5600	5.380	11	Pass
802.11n (20MHz)	5700	5.097	11	Pass
802.11n (40MHz)	5510	2.301	11	Pass
802.11n (40MHz)	5590	2.127	11	Pass
802.11n (40MHz)	5670	2.189	11	Pass
802.11ac (20MHz)	5500	5.140	11	Pass
802.11ac (20MHz)	5600	5.354	11	Pass
802.11ac (20MHz)	5700	5.227	11	Pass
802.11ac (40MHz)	5510	2.953	11	Pass
802.11ac (40MHz)	5590	2.706	11	Pass
802.11ac (40MHz)	5670	2.178	11	Pass
802.11ac (80MHz)	5530	-1.126	11	Pass
802.11ac (80MHz)	5610	-1.048	11	Pass
802.11a (20MHz)	5500	6.923	11	Pass
802.11a (20MHz)	5600	6.976	11	Pass
802.11a (20MHz)	5700	6.519	11	Pass

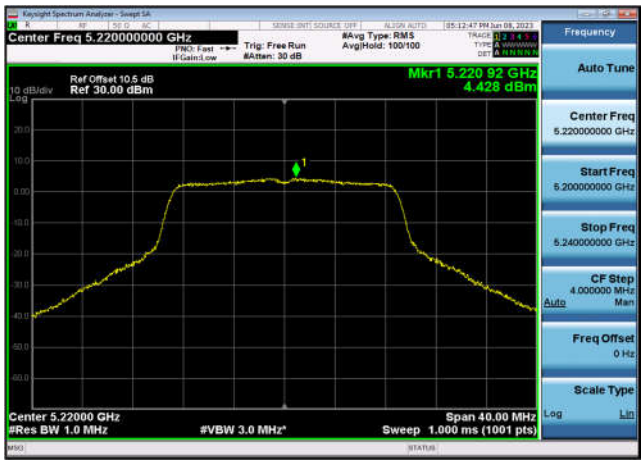
U-NII-3 AVGSA Power Spectral Density				
Mode	Test Frequency (MHz)	PSD (dBm/510kHz)	Limit (dBm/510kHz)	Result
802.11n (20MHz)	5745	2.469	30	Pass
802.11n (20MHz)	5785	2.075	30	Pass
802.11n (20MHz)	5825	2.021	30	Pass
802.11n (40MHz)	5755	-1.077	30	Pass
802.11n (40MHz)	5795	-1.226	30	Pass
802.11ac (20MHz)	5745	2.508	30	Pass
802.11ac (20MHz)	5785	2.373	30	Pass
802.11ac (20MHz)	5825	1.880	30	Pass
802.11ac (40MHz)	5755	-0.721	30	Pass
802.11ac (40MHz)	5795	-0.629	30	Pass
802.11ac (80MHz)	5775	-4.117	30	Pass
802.11a (20MHz)	5745	3.760	30	Pass
802.11a (20MHz)	5785	3.175	30	Pass
802.11a (20MHz)	5825	3.632	30	Pass

Test Plots

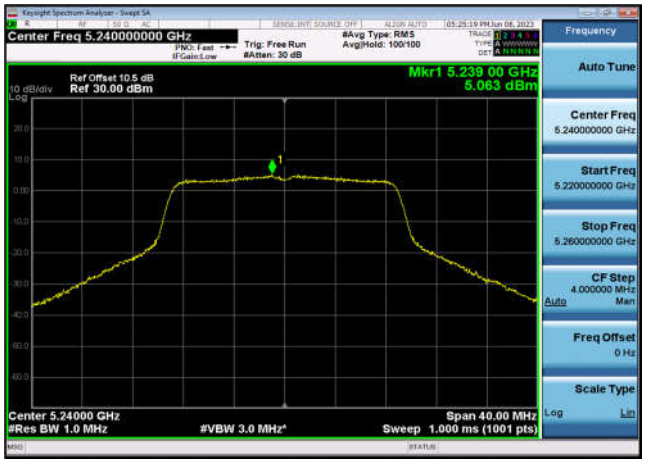
U-NII-1 Power spectral density-802.11 n(20MHz),5180MHz,Ant1



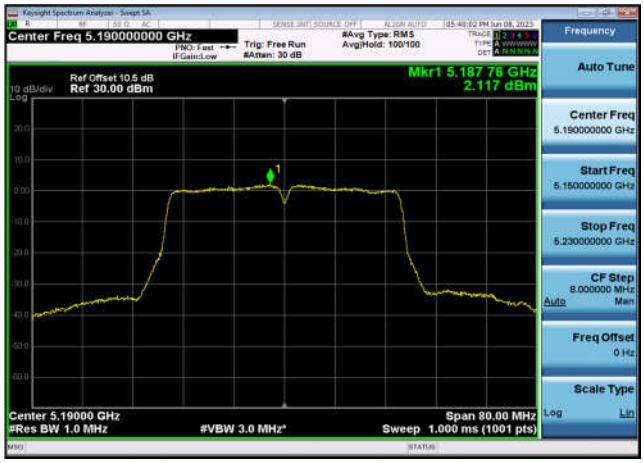
U-NII-1 Power spectral density-802.11 n(20MHz),5220MHz,Ant1



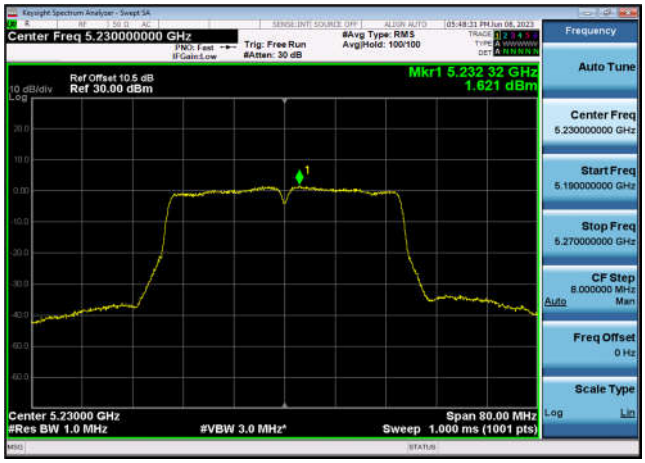
U-NII-1 Power spectral density-802.11 n(20MHz),5240MHz,Ant1



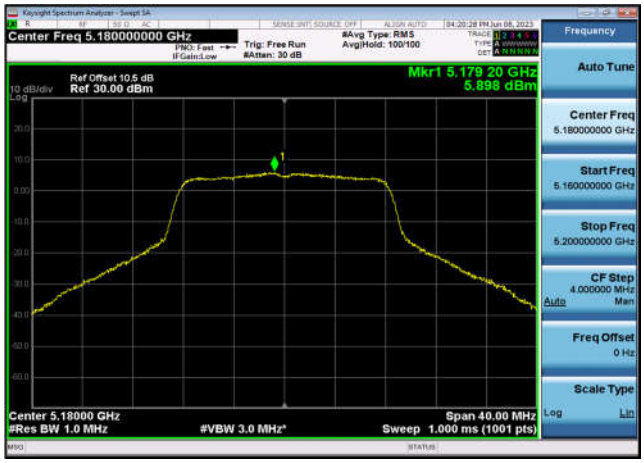
U-NII-1 Power spectral density-802.11 n(40MHz),5190MHz,Ant1



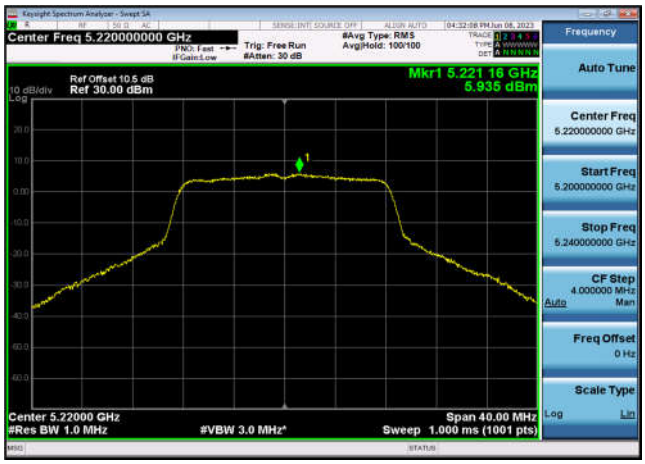
U-NII-1 Power spectral density-802.11 n(40MHz),5230MHz,Ant1



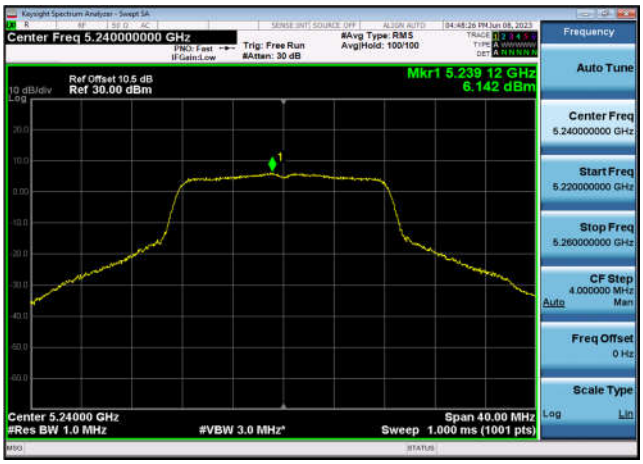
U-NII-1 Power spectral density-802.11 a(20MHz),5180MHz,Ant1



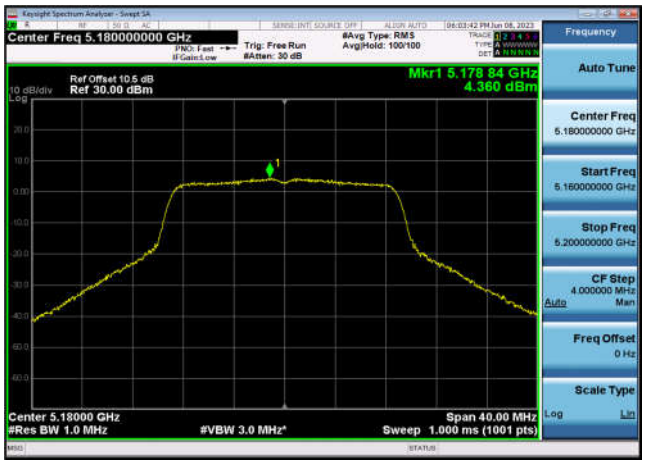
U-NII-1 Power spectral density-802.11 a(20MHz),5220MHz,Ant1



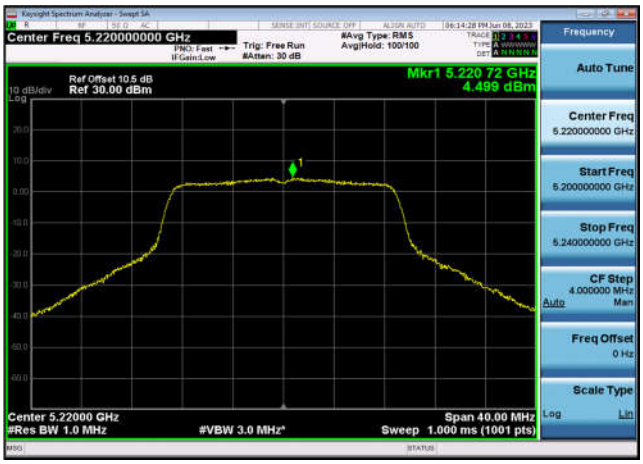
U-NII-1 Power spectral density-802.11 a(20MHz),5240MHz,Ant1



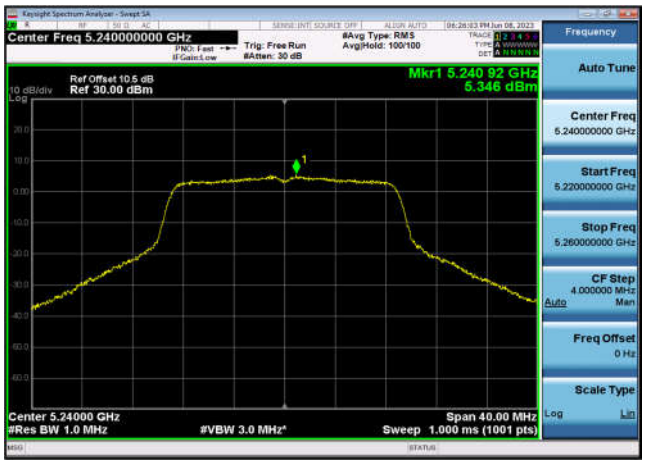
U-NII-1 Power spectral density-802.11 ac(20MHz),5180MHz,Ant1



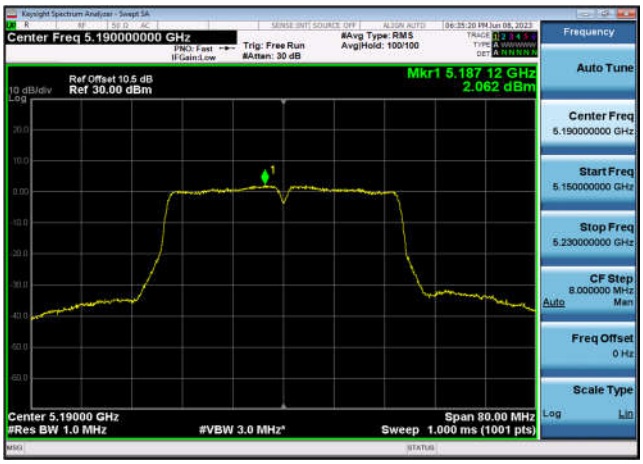
U-NII-1 Power spectral density-802.11 ac(20MHz),5220MHz,Ant1



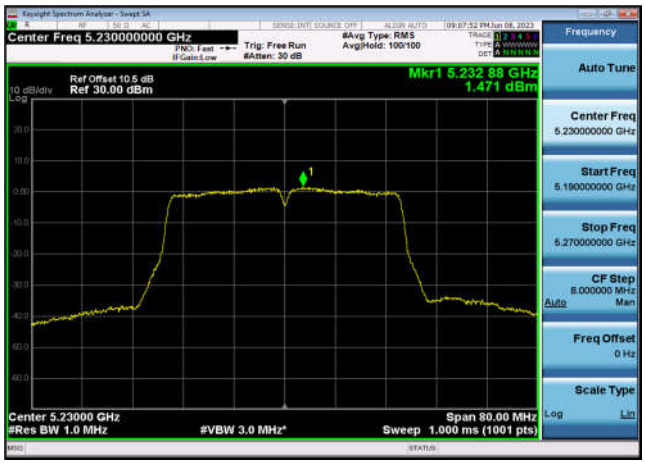
U-NII-1 Power spectral density-802.11 ac(20MHz),5240MHz,Ant1



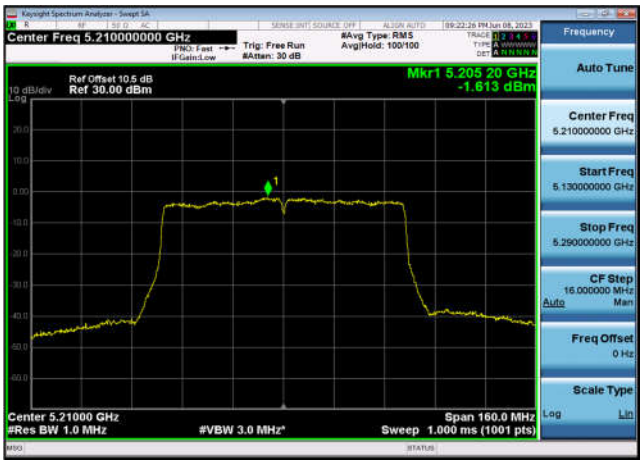
U-NII-1 Power spectral density-802.11 ac(40MHz),5190MHz,Ant1



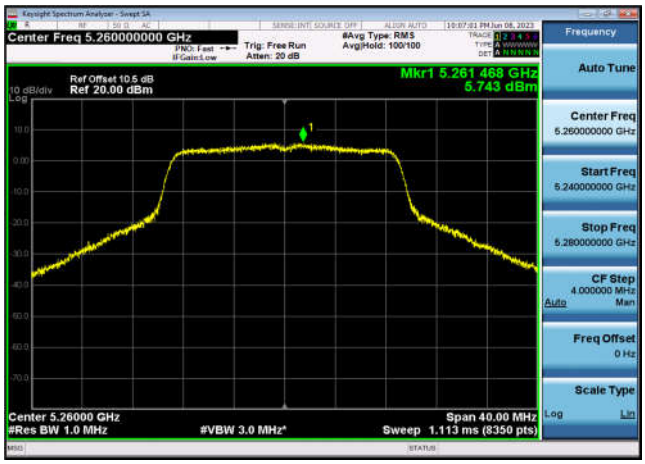
U-NII-1 Power spectral density-802.11 ac(40MHz),5230MHz,Ant1



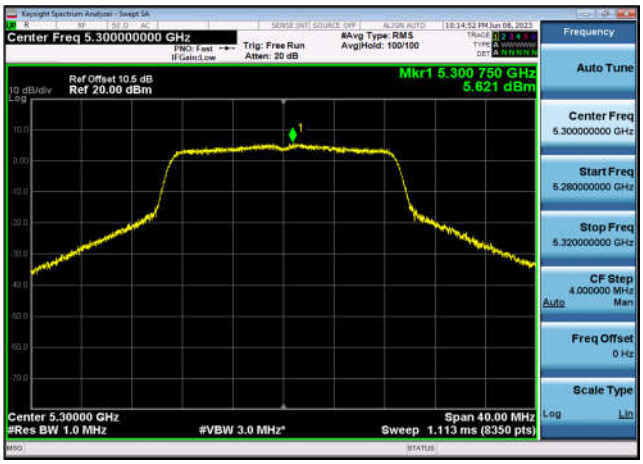
U-NII-1 Power spectral density-802.11 ac(80MHz),5210MHz,Ant1



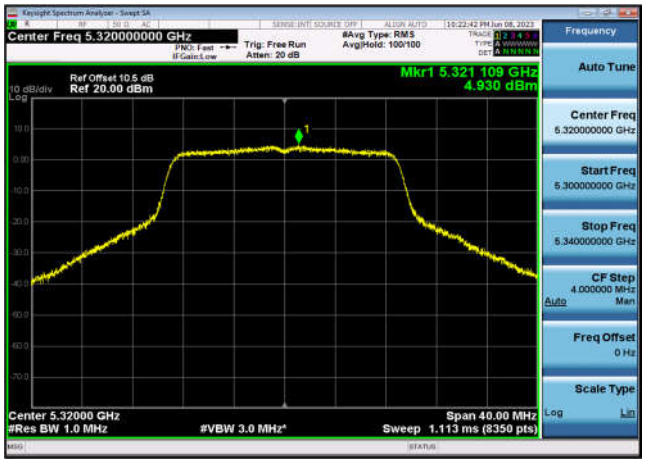
U-NII-2a Power spectral density-802.11n(20MHz),5260MHz,Ant1



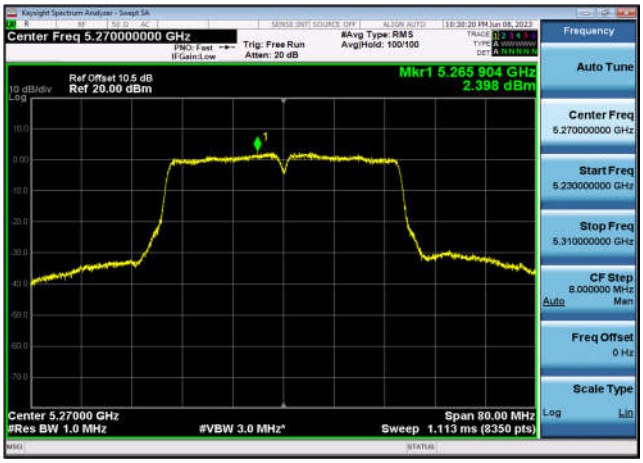
U-NII-2a Power spectral density-802.11n(20MHz),5300MHz,Ant1



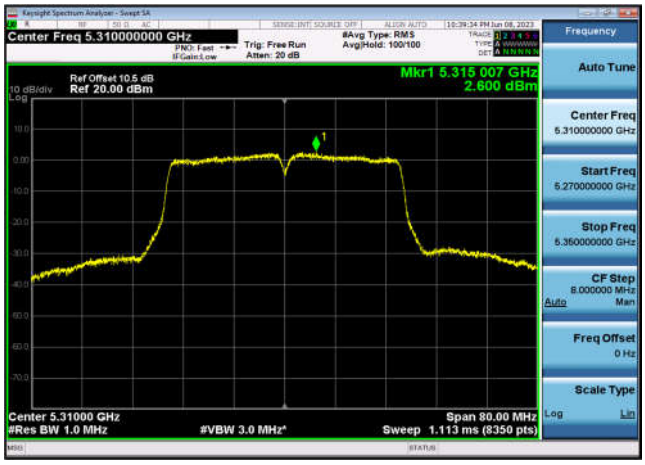
U-NII-2a Power spectral density-802.11n(20MHz),5320MHz,Ant1



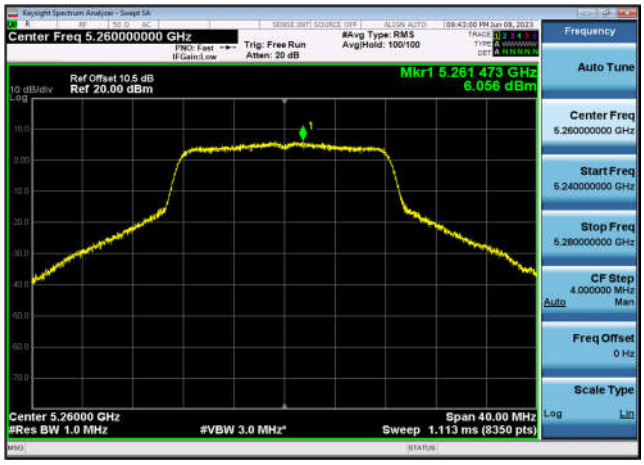
U-NII-2a Power spectral density-802.11n(40MHz),5270MHz,Ant1



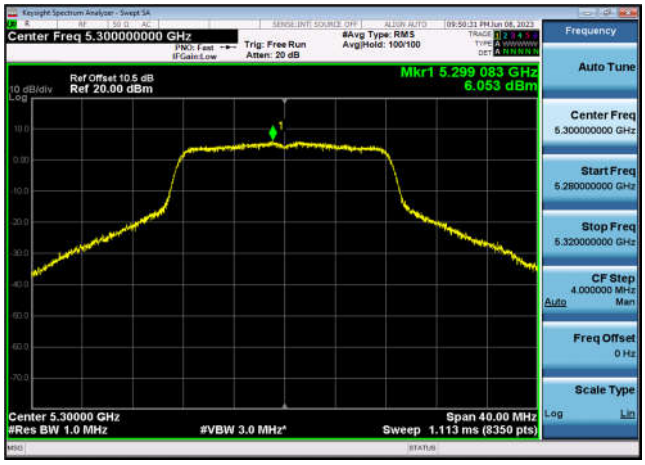
U-NII-2a Power spectral density-802.11n(40MHz),5310MHz,Ant1



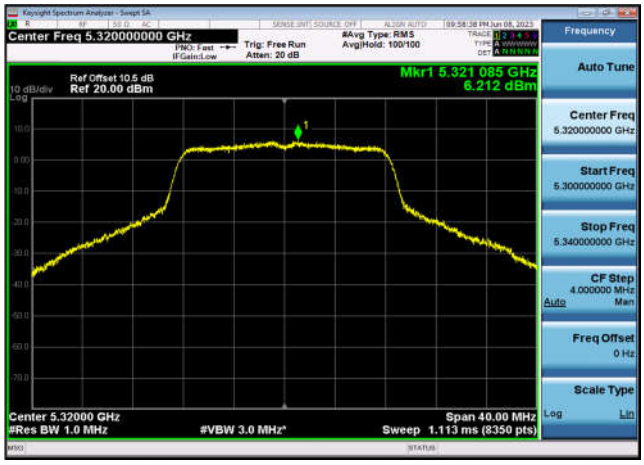
U-NII-2a Power spectral density-802.11a(20MHz),5260MHz,Ant1



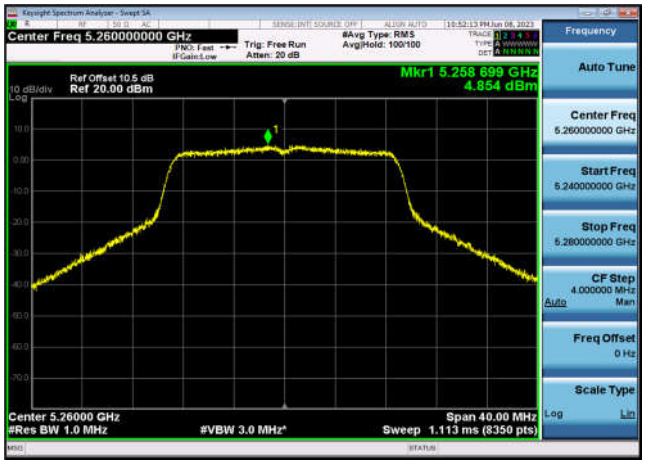
U-NII-2a Power spectral density-802.11a(20MHz),5300MHz,Ant1



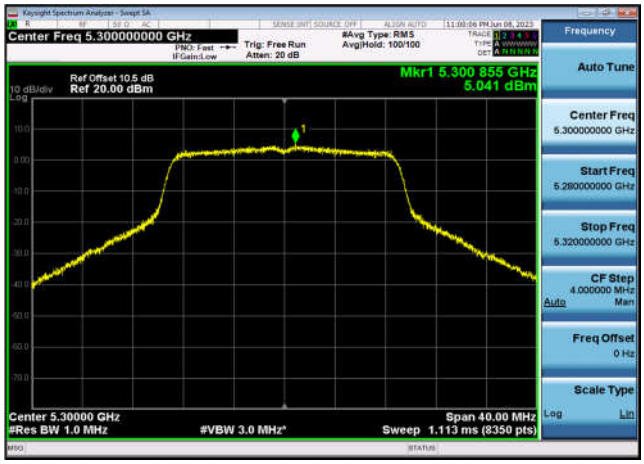
U-NII-2a Power spectral density-802.11a(20MHz),5320MHz,Ant1



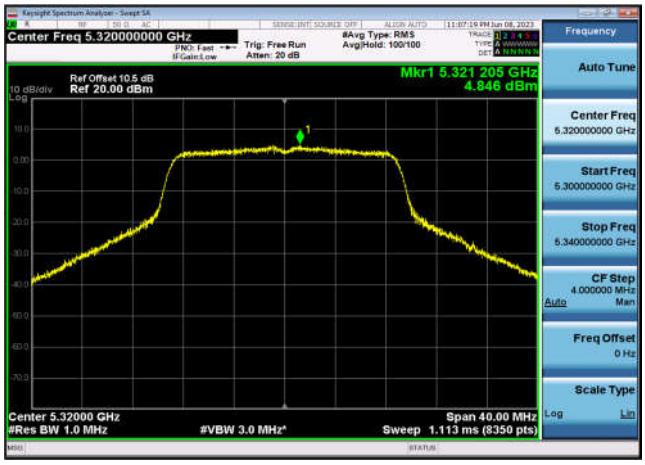
U-NII-2a Power spectral density-802.11ac(20MHz),5260MHz,Ant1



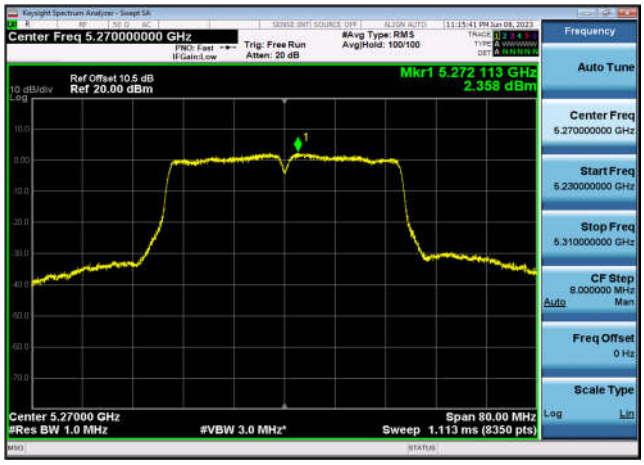
U-NII-2a Power spectral density-802.11ac(20MHz),5300MHz,Ant1



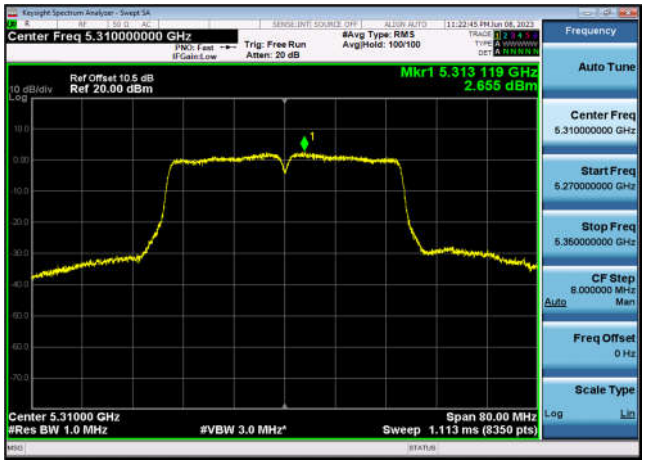
U-NII-2a Power spectral density-802.11ac(20MHz),5320MHz,Ant1



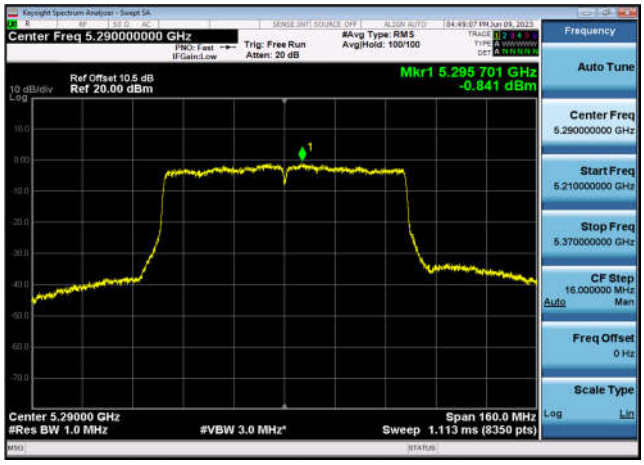
U-NII-2a Power spectral density-802.11ac(40MHz),5270MHz,Ant1



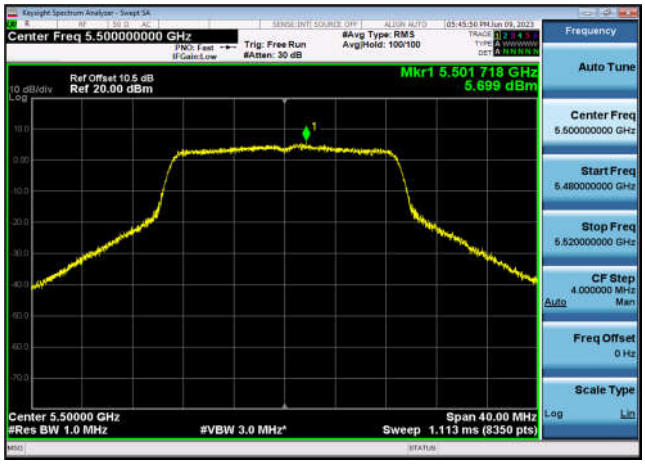
U-NII-2a Power spectral density-802.11ac(40MHz),5310MHz,Ant1



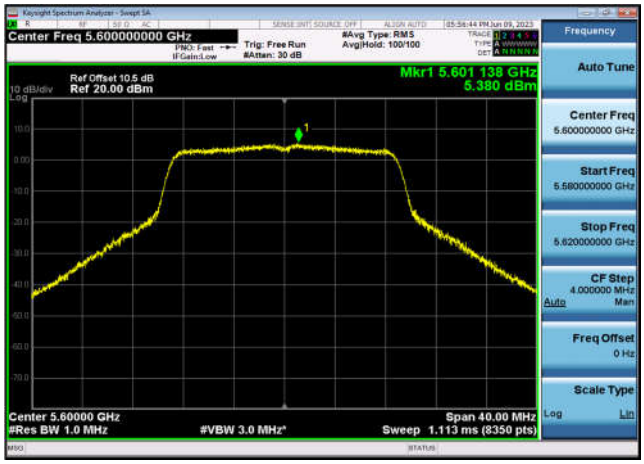
U-NII-2a Power spectral density-802.11ac(80MHz),5290MHz,Ant1



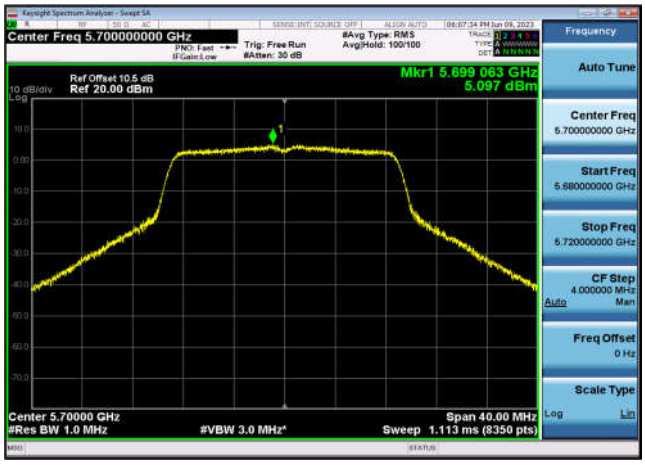
U-NII-2c Power spectral density-802.11n(20MHz),5500MHz,Ant1



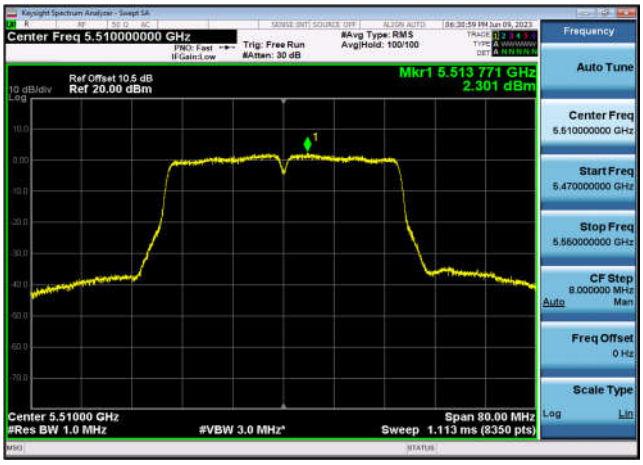
U-NII-2c Power spectral density-802.11n(20MHz),5600MHz,Ant1



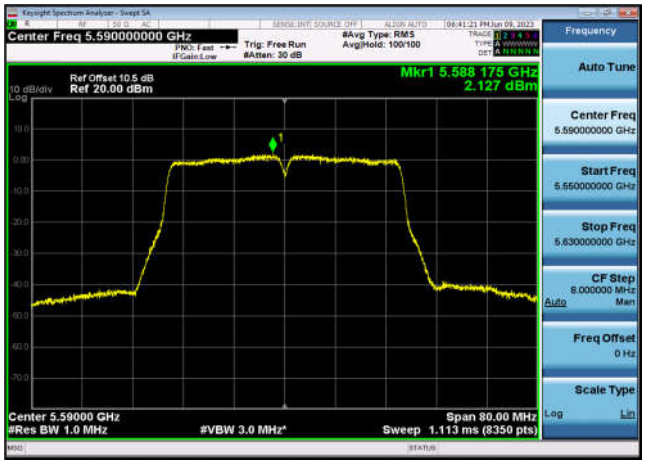
U-NII-2c Power spectral density-802.11n(20MHz),5700MHz,Ant1



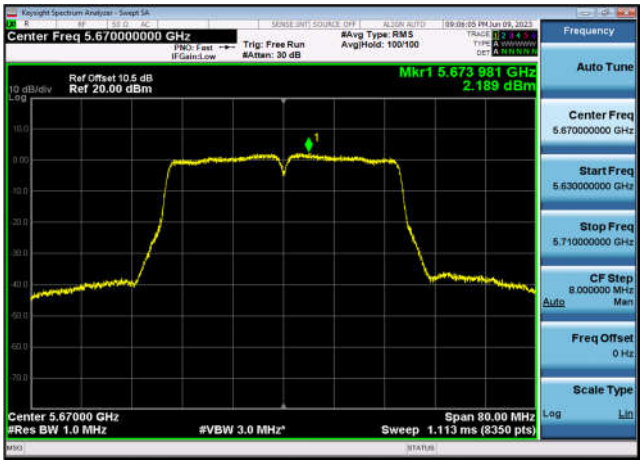
U-NII-2c Power spectral density-802.11n(40MHz),5510MHz,Ant1



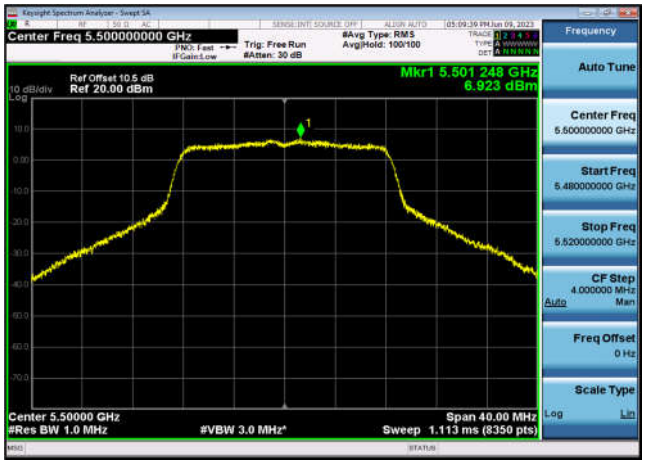
U-NII-2c Power spectral density-802.11n(40MHz),5590MHz,Ant1



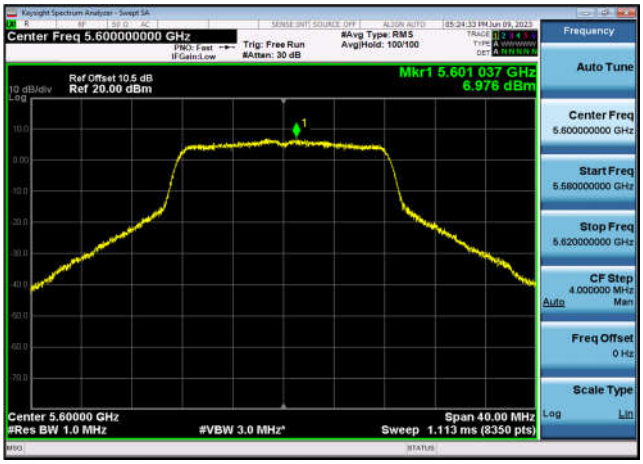
U-NII-2c Power spectral density-802.11n(40MHz),5670MHz,Ant1



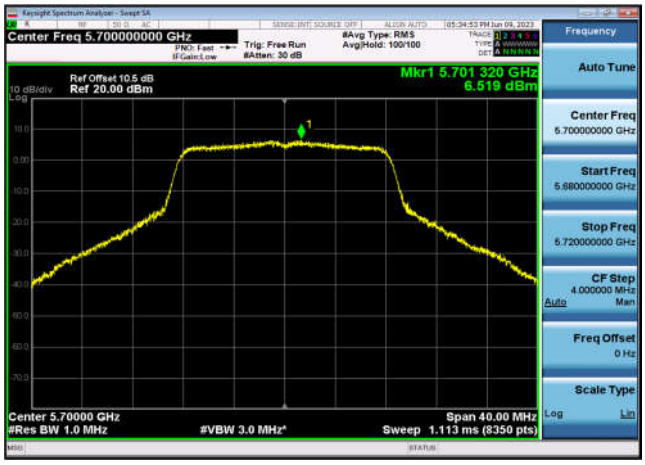
U-NII-2c Power spectral density-802.11a(20MHz),5500MHz,Ant1



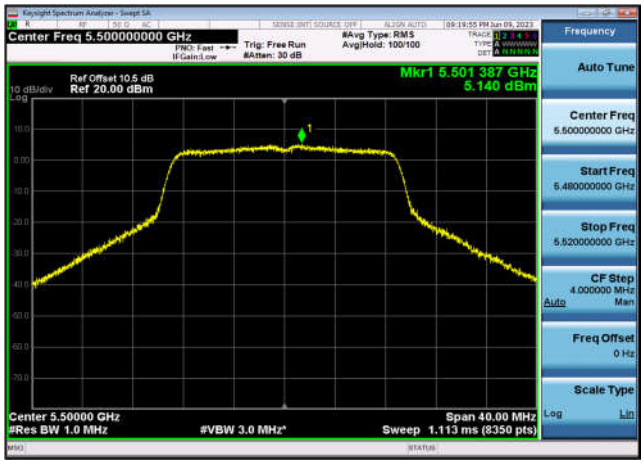
U-NII-2c Power spectral density-802.11a(20MHz),5600MHz,Ant1



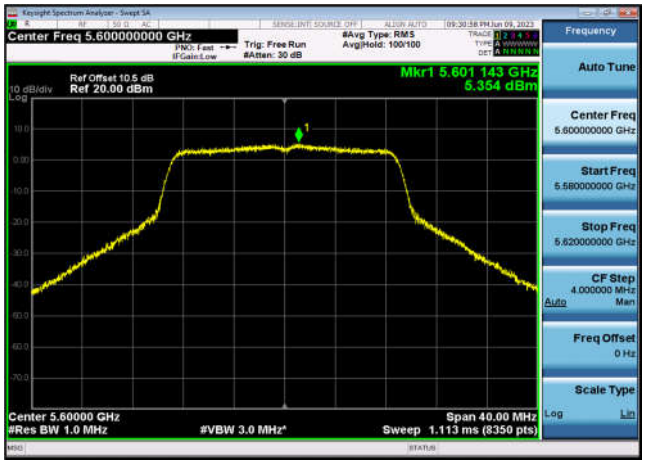
U-NII-2c Power spectral density-802.11a(20MHz),5700MHz,Ant1



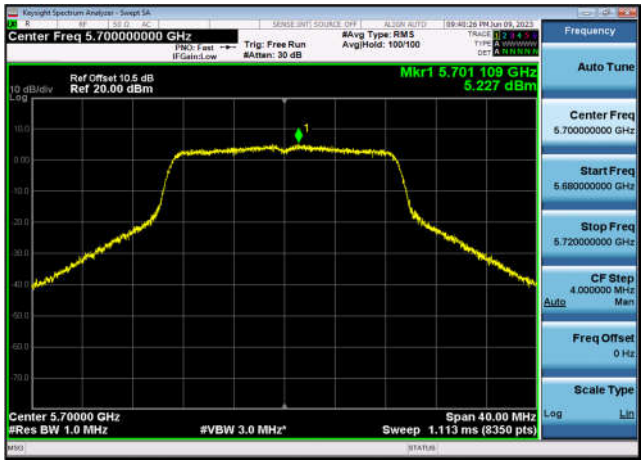
U-NII-2c Power spectral density-802.11ac(20MHz),5500MHz,Ant1



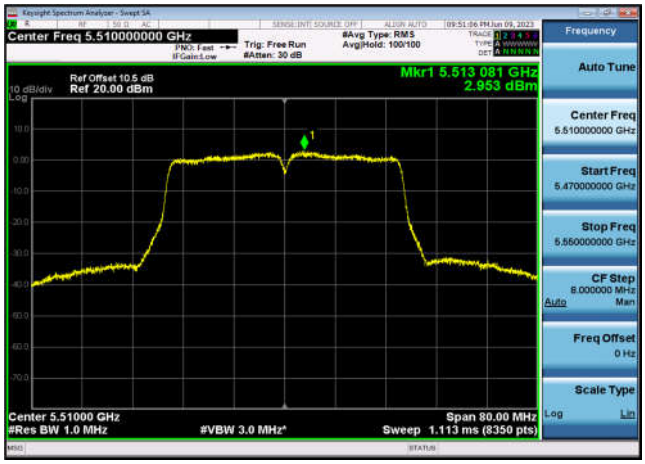
U-NII-2c Power spectral density-802.11ac(20MHz),5600MHz,Ant1



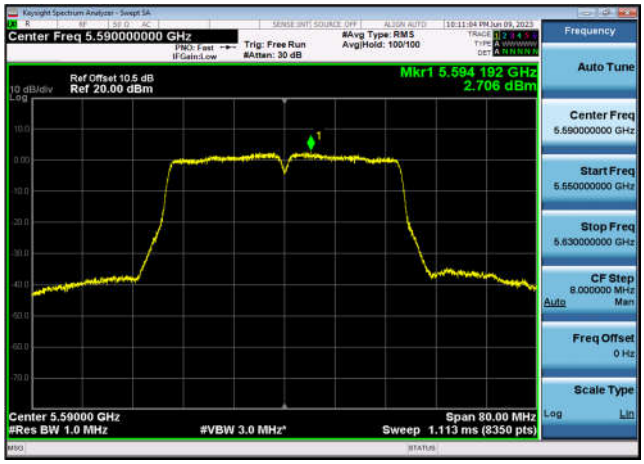
U-NII-2c Power spectral density-802.11ac(20MHz),5700MHz,Ant1



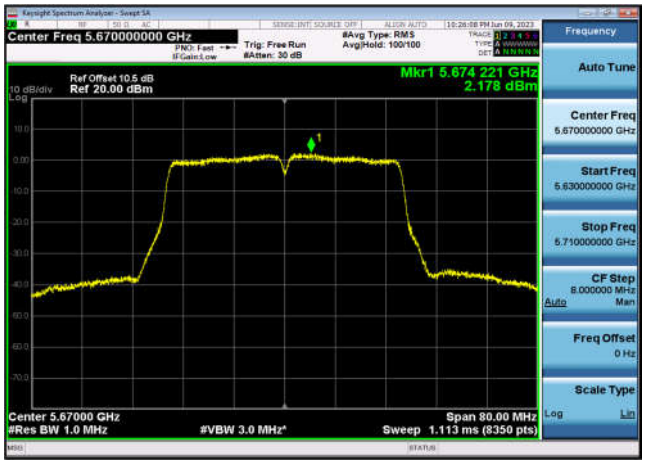
U-NII-2c Power spectral density-802.11ac(40MHz),5510MHz,Ant1



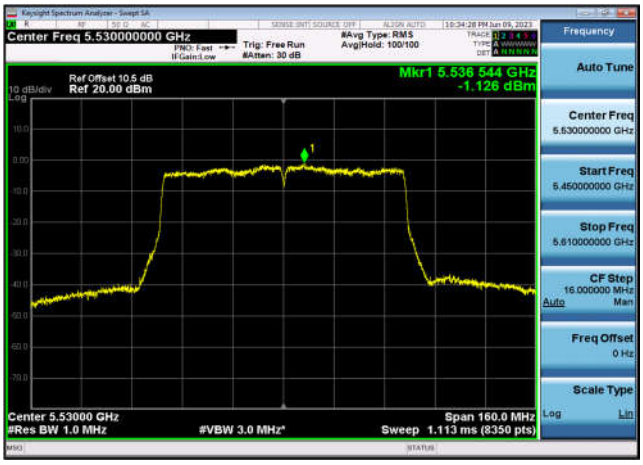
U-NII-2c Power spectral density-802.11ac(40MHz),5590MHz,Ant1



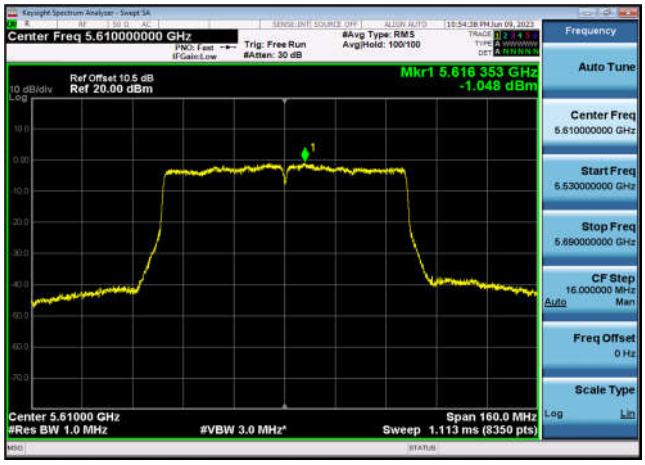
U-NII-2c Power spectral density-802.11ac(40MHz),5670MHz,Ant1



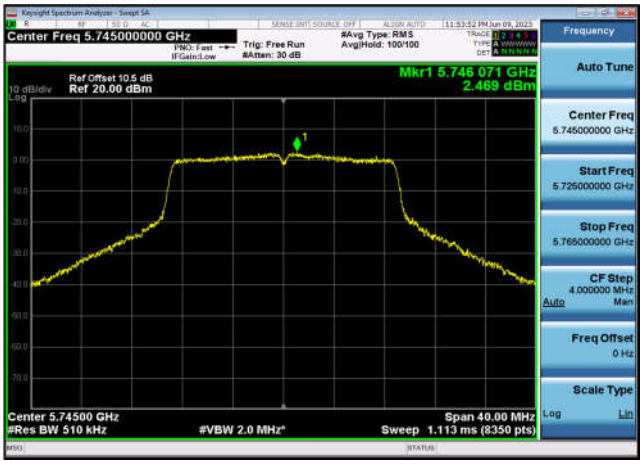
U-NII-2c Power spectral density-802.11ac(80MHz),5530MHz,Ant1



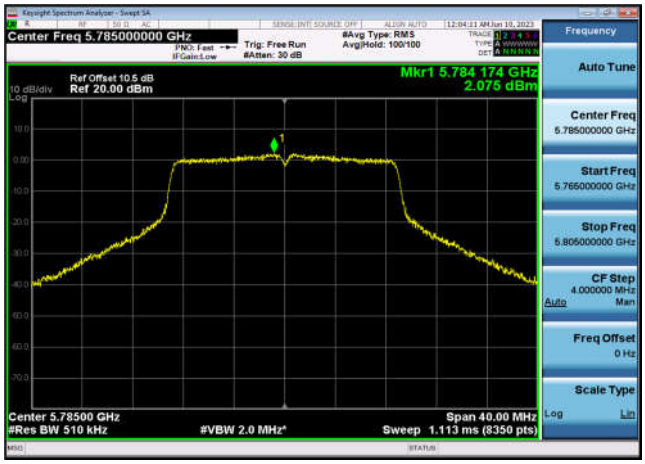
U-NII-2c Power spectral density-802.11ac(80MHz),5610MHz,Ant1



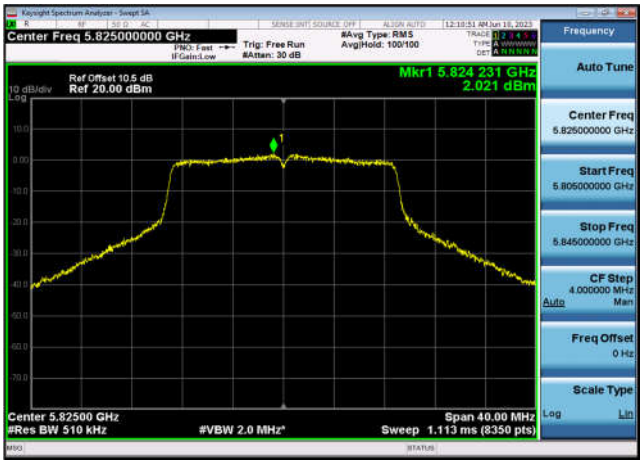
U-NII-3 Power spectral density-802.11n(20MHz),5745MHz,Ant1



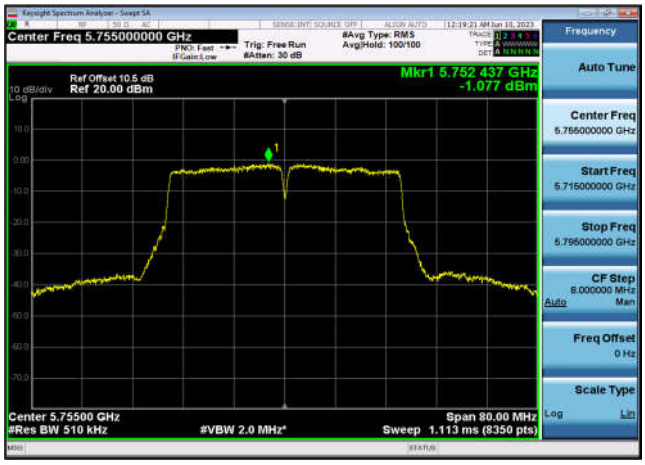
U-NII-3 Power spectral density-802.11n(20MHz),5785MHz,Ant1



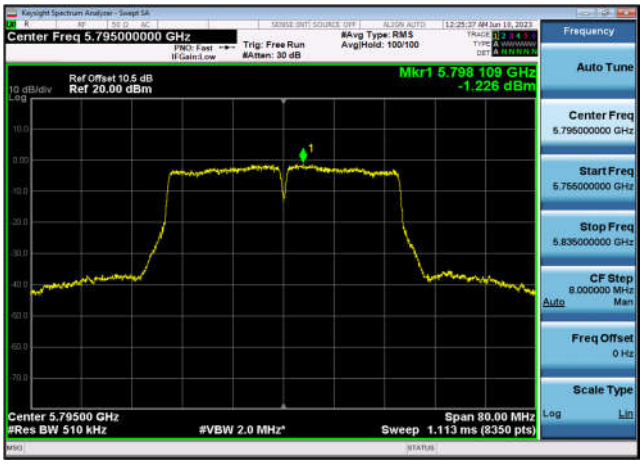
U-NII-3 Power spectral density-802.11n(20MHz),5825MHz,Ant1



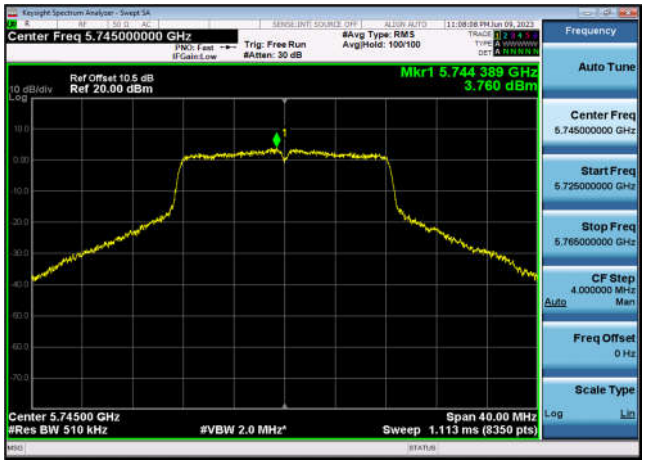
U-NII-3 Power spectral density-802.11 n(40MHz),5755MHz,Ant1



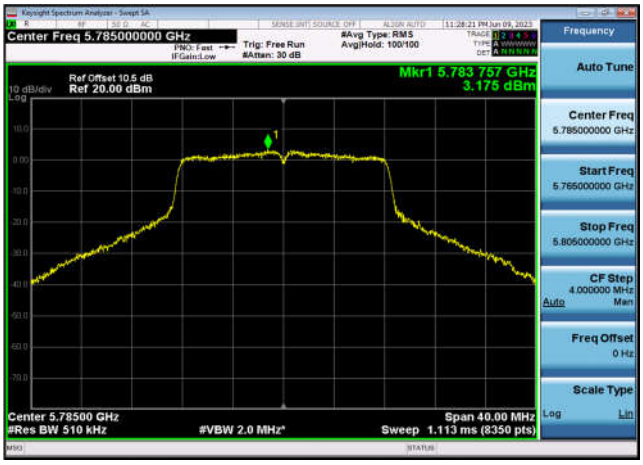
U-NII-3 Power spectral density-802.11 n(40MHz),5795MHz,Ant1



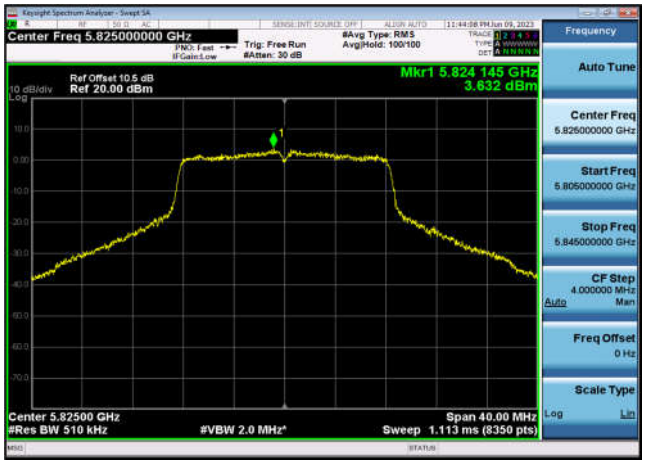
U-NII-3 Power spectral density-802.11 a(20MHz),5745MHz,Ant1



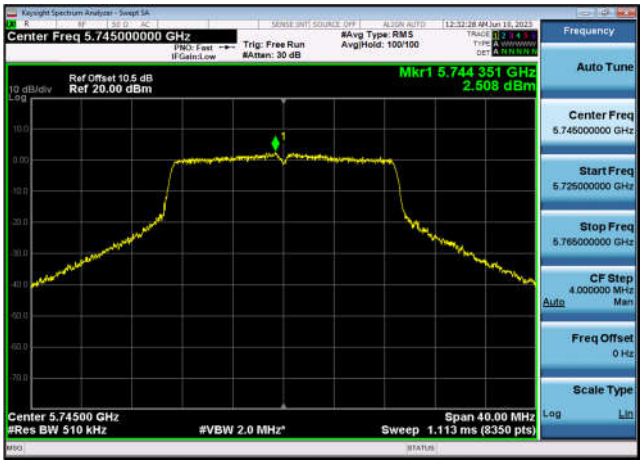
U-NII-3 Power spectral density-802.11 a(20MHz),5785MHz,Ant1



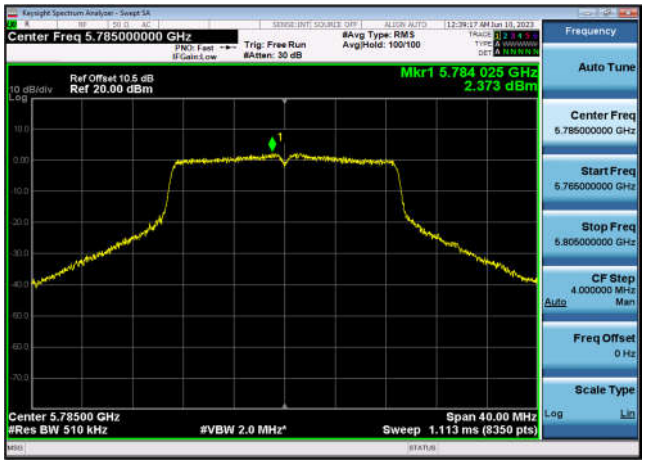
U-NII-3 Power spectral density-802.11 a(20MHz),5825MHz,Ant1



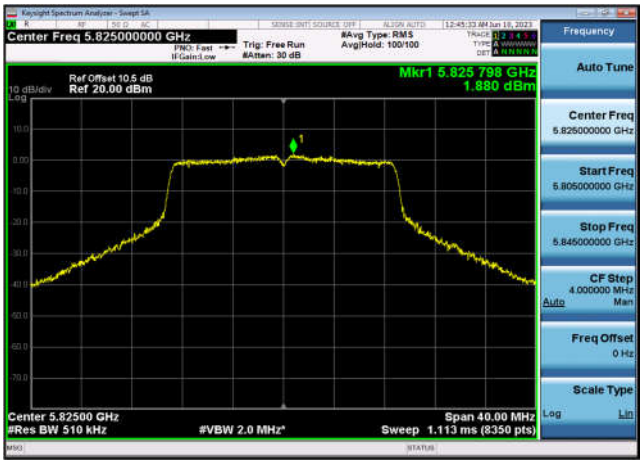
U-NII-3 Power spectral density-802.11 ac(20MHz),5745MHz,Ant1



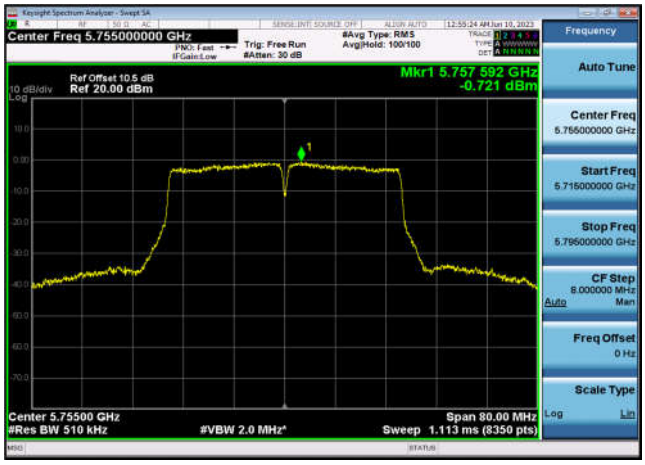
U-NII-3 Power spectral density-802.11 ac(20MHz),5785MHz,Ant1



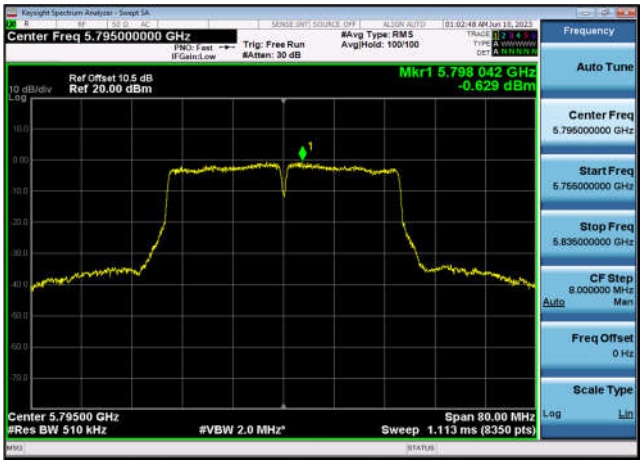
U-NII-3 Power spectral density-802.11 ac(20MHz),5825MHz,Ant1



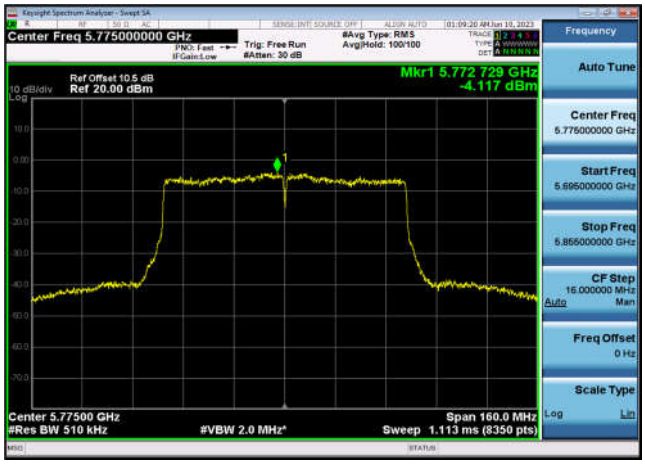
U-NII-3 Power spectral density-802.11 ac(40MHz),5755MHz,Ant1



U-NII-3 Power spectral density-802.11 ac(40MHz),5795MHz,Ant1



U-NII-3 Power spectral density-802.11 ac(80MHz),5775MHz,Ant1



99% Occupied Bandwidth and 26dB Emission Bandwidth

Test Result and Data

U-NII-1 99% OBW & 26dB EBW				
Mode	Test Frequency (MHz)	99% OBW (MHz)	26dB EBW (MHz)	Result
802.11n (20MHz)	5180	17.927	25.58	Pass
802.11n (20MHz)	5220	18.001	25.60	Pass
802.11n (20MHz)	5240	18.039	26.93	Pass
802.11n (40MHz)	5190	36.374	41.86	Pass
802.11n (40MHz)	5230	36.307	42.05	Pass
802.11ac (20MHz)	5180	17.940	25.17	Pass
802.11ac (20MHz)	5220	18.000	25.53	Pass
802.11ac (20MHz)	5240	18.042	25.76	Pass
802.11ac (40MHz)	5190	36.336	41.91	Pass
802.11ac (40MHz)	5230	36.278	41.84	Pass
802.11ac (80MHz)	5210	75.851	83.90	Pass
802.11a (20MHz)	5180	16.851	24.42	Pass
802.11a (20MHz)	5220	16.934	26.10	Pass
802.11a (20MHz)	5240	17.074	26.26	Pass

U-NII-2a 99% OBW & 26dB EBW				
Mode	Test Frequency (MHz)	99% OBW (MHz)	26dB EBW (MHz)	Result
802.11n (20MHz)	5260	18.071	26.87	Pass
802.11n (20MHz)	5300	18.115	27.41	Pass
802.11n (20MHz)	5320	18.027	25.81	Pass
802.11n (40MHz)	5270	36.335	42.06	Pass
802.11n (40MHz)	5310	36.382	42.25	Pass
802.11ac (20MHz)	5260	17.991	25.57	Pass
802.11ac (20MHz)	5300	18.002	25.57	Pass
802.11ac (20MHz)	5320	18.029	26.09	Pass
802.11ac (40MHz)	5270	36.343	41.94	Pass
802.11ac (40MHz)	5310	36.339	42.25	Pass
802.11ac (80MHz)	5290	75.891	84.10	Pass
802.11a (20MHz)	5260	16.907	25.16	Pass
802.11a (20MHz)	5300	16.983	25.18	Pass
802.11a (20MHz)	5320	17.018	26.17	Pass

U-NII-2c 99% OBW & 26dB EBW				
Mode	Test Frequency (MHz)	99% OBW (MHz)	26dB EBW (MHz)	Result
802.11n (20MHz)	5500	17.971	25.17	Pass
802.11n (20MHz)	5600	17.941	23.87	Pass
802.11n (20MHz)	5700	17.924	24.95	Pass
802.11n (40MHz)	5510	36.273	41.62	Pass
802.11n (40MHz)	5590	36.273	41.95	Pass
802.11n (40MHz)	5670	36.288	41.54	Pass
802.11ac (20MHz)	5500	17.983	25.74	Pass
802.11ac (20MHz)	5600	17.947	24.32	Pass
802.11ac (20MHz)	5700	17.977	25.63	Pass
802.11ac (40MHz)	5510	36.293	41.90	Pass
802.11ac (40MHz)	5590	36.272	41.35	Pass
802.11ac (40MHz)	5670	36.273	41.92	Pass
802.11ac (80MHz)	5530	75.787	83.98	Pass
802.11ac (80MHz)	5610	75.791	84.20	Pass
802.11a (20MHz)	5500	16.890	24.85	Pass
802.11a (20MHz)	5600	16.775	24.24	Pass
802.11a (20MHz)	5700	16.841	24.50	Pass

U-NII-3 99% OBW & 26dB EBW				
Mode	Test Frequency (MHz)	99% OBW (MHz)	26dB EBW (MHz)	Result
802.11n (20MHz)	5745	18.024	26.16	Pass
802.11n (20MHz)	5785	18.050	26.13	Pass
802.11n (20MHz)	5825	18.064	26.11	Pass
802.11n (40MHz)	5755	36.302	41.69	Pass
802.11n (40MHz)	5795	36.333	42.23	Pass
802.11ac (20MHz)	5745	18.017	26.16	Pass
802.11ac (20MHz)	5785	18.065	26.11	Pass
802.11ac (20MHz)	5825	18.062	26.18	Pass
802.11ac (40MHz)	5755	36.316	41.92	Pass
802.11ac (40MHz)	5795	36.315	41.88	Pass
802.11ac (80MHz)	5775	75.828	83.93	Pass
802.11a (20MHz)	5745	16.996	25.69	Pass
802.11a (20MHz)	5785	16.983	25.28	Pass
802.11a (20MHz)	5825	17.028	26.18	Pass

Test Plots

U-NII-1 26dB&99% Bandwidth-802.11n(20MHz) ,5180MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11n(20MHz) ,5220MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11n(20MHz) ,5240MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11n(40MHz) ,5190MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11n(40MHz) ,5230MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11a(20MHz) ,5180MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11a(20MHz) ,5220MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11a(20MHz) ,5240MHz,Ant1

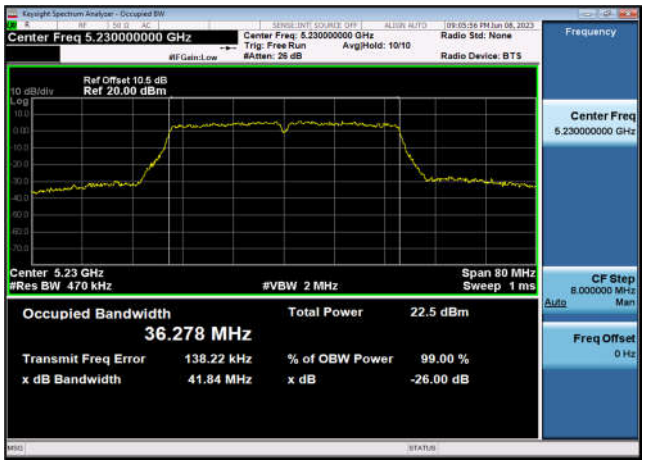
U-NII-1 26dB&99% Bandwidth-802.11ac(20MHz) ,5180MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11ac(20MHz) ,5220MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11ac(20MHz) ,5240MHz,Ant1

U-NII-1 26dB&99% Bandwidth-802.11ac(40MHz) ,5190MHz,Ant1

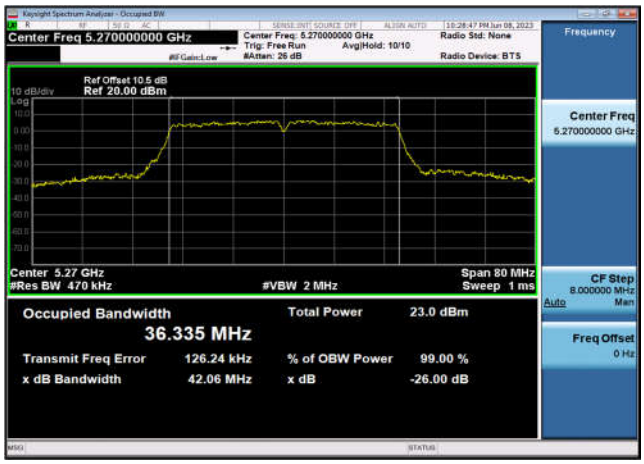
U-NII-1 26dB&99% Bandwidth-802.11ac(40MHz) ,5230MHz,Ant1



U-NII-1 26dB&99% Bandwidth-802.11ac(80MHz) ,5210MHz,Ant1

U-NII-2a 26dB&99% Bandwidth-802.11n(20MHz) ,5260MHz,Ant1

U-NII-2a 26dB&99% Bandwidth-802.11n(20MHz) ,5300MHz,Ant1

U-NII-2a 26dB&99% Bandwidth-802.11n(20MHz) ,5320MHz,Ant1

U-NII-2a 26dB&99% Bandwidth-802.11n(40MHz) ,5270MHz,Ant1