HEADQUARTERS: 914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230 • PHONE (410) 354-3300 • FAX (410) 354-3313

April 30, 2024

Intellian Technologies USA Inc
Christopher Goodman
2600 Tower Oaks Boulevard, Suite 400
Rockville, MD 20852

Dear Christopher Goodman,

Enclosed is the EMC Wireless test report for compliance testing of the Intellian Technologies USA Inc, CNX-WiFi with 450 Watt AC Adapter as tested to the requirements of Title 47 of the CFR, Ch. 1 (10-1-06 ed.), Title 47 of the CFR, Part 15.407, Subpart E (UNII 2).

Thank you for using the services of Eurofins Electrical and Electronic Testing NA, Inc. If you have any questions regarding these results or if Eurofins Electrical and Electronic Testing NA, Inc. can be of further service to you, please feel free to contact me.

Sincerely yours,
EUROFINS ELECTRICAL AND ELECTRONIC TESTING NA, INC.

Michelle Tawmging

Reference: (\Intellian Technologies USA Inc\WIR128375-FCC407 UNII 2 Rev. 3)

ACCREDITED
TESTING CERT #0591.01

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Electromagnetic Compatibility Criteria
Test Report

for the

Intellian Technologies USA Inc
Model CNX-WiFi with 450 Watt AC Adapter

Tested under
the FCC Certification Rules
contained in
Title 47 of the CFR
15.407 Subpart E

Report: WIR128375-FCC407 UNII 2 Rev. 3

April 30, 2024

Prepared For:

Intellian Technologies USA Inc
20250 Century Blvd.
Germantown MD 20874

Prepared By:
Eurofins Electrical and Electronic Testing NA, Inc.
914 W. Patapsco Avenue
Baltimore, MD 21230

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15.407 Subpart E

Donald Salguero
Wireless Laboratory Engineer

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of 15.407 of the FCC Rules under normal use and maintenance.

Michael Griffiths
Manager, Wireless Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	January 23, 2024	Initial Issue
1	February 22, 2024	Updated EUT name throughout; Updated Section A; Updated Section E.
2	April 3, 2024	Removed MPE section.
3	April 30, 2024	Updated Table 4; Updated Table 5.

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Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the Intellian Technologies USA Inc CNX-WiFi with 450 Watt AC Adapter, with the requirements of Part 15, §15.407. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with §2.1033, the following data is presented in support of the Certification of the CNX-WiFi with 450 Watt AC Adapter. Intellian Technologies USA Inc should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the CNX-WiFi with 450 Watt AC Adapter, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.407, in accordance with Intellian Technologies USA Inc, purchase order number 4200001300. All tests were conducted using measurement procedure ANSI C63.10-2013.

FCC Reference	Description	Results
§15.203	Antenna Requirement	Compliant
§15.403(i)	-26 dB Occupied Bandwidth	Compliant
N/A	Duty Cycle	Compliant
§15.407 (a)(2)	Maximum Conducted Output Power	Compliant
§15.407 (a)(2)	Maximum Power Spectral Density	Compliant
§15.407 (b)(2 – 3)& (9 - 10)	Undesirable Emissions	Compliant
§15.207	Conducted Emission	Compliant

Table 1. Executive Summary of EMC Part 15.407 ComplianceTesting

Equipment Configuration

A. Overview

Eurofins Electrical and Electronic Testing NA, Inc. was contracted by Intellian Technologies USA Inc to perform testing on the CNX-WiFi with 450 Watt AC Adapter, under Intellian Technologies USA Inc's purchase order number 4200001300.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Intellian Technologies USA Inc CNX-WiFi with 450 Watt AC Adapter.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	CNX-WiFi with 450 Watt AC Adapter	
Model(s) Covered:	CNX-WiFi with 450 Watt AC Adapter	
EUT Specifications:	Primary Power: 100-240 VAC	
	Type of Modulations:	BPSK,QPSK,DBPSK,DQPS
	Equipment Code:	NII
	Max. RF Output Power:	22.10 dBm; 0.162 W
	EUT Frequency Ranges:	5260 – 5320 MHz; 5270 – 5310 MHz; 5290 MHz; 5250 MHz straddle channel; 5500 – 5720 MHz; 5510 – 5710 MHz; 5530 – 5690 MHz; 5570MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Type of Filing:	Original	
Evaluated by:	Donald Salguero	
Report Date(s):	April 30, 2024	

Table 2. EUT Summary

B. References

CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
ANSI C63.4:2014	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ISO/IEC 17025:2017	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
789033 D02 General UNII Test Procedures New Rules v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
905462 DO2 UNII DFS Compliance Procedures New Rules v01r02	Compliance Measurement Procedures for Unlicensed-National Information Infrastructure Devices Operating in the 5250-5350 MHz and 5470-5725 MHz Bands Incorporating Dynamic Frequency Selection

Table 3. References

C. Test Site

All testing was performed at Eurofins Electrical and Electronic Testing NA, Inc., 914 W. Patapsco Avenue, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 3 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at Eurofins Electrical and Electronic Testing NA, Inc.

D. Measurement Uncertainty

Test Method	Typical Expanded Uncertainty	K	Confidence Level
Radiated Emissions, (30 MHz – 1 GHz)	±3.20	2	95%
Radiated Emissions, (1 GHz – 6 GHz)	±2.52	2	95%
Conducted Emission Voltage	±2.03	2	95%
RF Frequencies	±4.52 Hz	2	95%
RF Power Conducted Emissions	±2.32 dB	2	95%
RF Power Conducted Spurious Emissions	±2.25 dB	2	95%
RF Power Radiated Emissions	±3.01 dB	2	95%

Table 4. Uncertainty Calculations Summary

E. Equipment Overview and Test Configuration

Name of EUT/Model:	CNX-WiFi with 450 Watt AC Adapter
Description of EUT and Intended Use:	CNX (Customer Network Exchange) is an integral component of a OneWeb User Terminal (UT) that provides the network interface, WiFi and Ethernet, for connecting User Devices to the OneWeb Network. CNX also provides power to the OneWeb UT using a coax cable that multiplexes power and data.
Selected Operation Mode(s):	CNX Bridged Mode • CNX operates as a Layer-2 device • SSID: APN1 and SSID: APN_2 are disabled • Devices connected to LAN port MGNT obtain IP addresses via DHCP from the SSM • Devices connected to SSID: Intellian obtain IP addresses via DHCP from the SSM
Rational for the selection of the Operation Mode(s):	Intellian SSID/MGMT port for Management - data load testing between client and server
Susceptibility Criteria:	iPerf traffic loss for data load CNX-WifI reboot due to excessive current draw by electronic load
Monitoring Method(s):	Performing as intended: • The CNX-WiFi functioning with an electronic load of 56VDC at 7.5A Failure conditions: • CNX reboot due to excessive current draw by electronic load
Emissions Class Declaration:	Class B
Configurations:	Please refer to Testing document.
Rated Power Input	
Input Voltage Range:	100-240 VAC
AC or DC:	AC
Voltage Frequency:	50-60 HZ
Number of Phases:	1
Current:	5.3 A Max
Uses an external AC/DC Adapter:	True
Manufacturer:	Adapter Technology Co Ltd

Model #:	ATM450A2-P560
Part #:	Not Applicable
Serial #:	Not Applicable
The EUT can be battery powered:	False
Power Input Under Test	
Input Voltage:	230 VAC
Frequency:	50 Hz
Physical Description	
EUT Arrangement:	Table Top
System with Multiple Chassis?	False
Size (HxWxD) inches:	8.3x6.8x3.1
Weight (lbs.):	1.5
Highest Internal Frequency (MHz):	5.95
Other Info	
EUT Software (Internal to EUT):	MoCA version 2.20.5
Support Software (used by support PC to exercise EUT):	iPerf Version 2.0.9, QDART, Windows 11
Firmware:	Version 13
Transmitter Parameters	
Description of your unit:	OFDM, OFDMA
Modulation Type:	BPSK,QPSK,DBPSK,DQPS
Number of Channels:	20
Frequency Range (MHz):	2412 – 2462; 5180 – 5240; 5260 – 5320; 5500 -5720; 5745 – 5825
Antenna Type:	MU-MIMO
Antenna Gain (dB):	2
PMN:	CNX-WiFi
HVIN:	V 04
FVIN:	420.204.1-009
HMN:	CNX-WiFi
Data Rates:	20 MHz -1xSS: MCS0 - MCS11 2xSS: MCS0 - MCS11 | 40MHZ -1xSS: MCS0 - MCS11 2xSS: MCS0 - MCS11
Expected Power Level:	23 dBm
Number of Antenna:	4

Number of Intentional Transmitters:	4
Number of Certified Intentional Transmitter Modules:	0
FCC ID:	XXZ-BL5008
IC ID:	26236-BL5008

Table 5. Equipment Details

Name/Description	Model Number	Part Number	Serial Number	Rev. #
CNX Wi-Fi	BL5008	N/A	5008232900005	V 0.4
450 Watt AC Adapter	ATM450A2-P560	N/A	N/A	N/A

Table 6. EUT List

Port Name on EUT	Cable Desc. or reason for none	3 Meters or Longer	Length as tested (m)	Max Length (m)	Shielded?	Termination Box ID & Port Name
MGMT	Ethernet Cable	Yes	3.048	100	No	Laptop
COAX	For Power and Ethernet	Yes	3.048	80	Yes	SSM
Power	Integrated Power Cable	No	1	1	No	450W PSU
LAN 3	Disabled	No	N/A	N/A	No	N/A
LAN 2	Not needed for testing	No	N/A	N/A	No	N/A
LAN 1	Not needed for testing	No	N/A	N/A	No	N/A

Table 7. Ports and Cabling

Name/Description	Manufacturer	Model Number	Serial Number	*Customer Supplied Calibration Data
Laptop	Dell	N/A	N/A	N/A
DC Load	BK Precision	8510B	N/A	N/A
Test Jig	Intellian	N.A.	N/A	N/A

Table 8. Support Equipment

Photograph 1. CNX-WiFi, Front Side

Photograph 2. CNX-WiFi, Right Side

Photograph 3. CNX-WiFi, Left Side

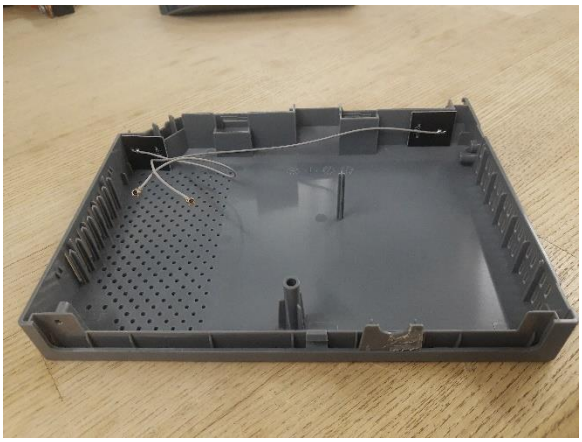
Photograph 4. CNX-WiFi, Rear Side

Photograph 5. CNX-WiFi, Top Side

Photograph 6. CNX-WiFi, Bottom Side

Photograph 7. CNX-WiFi, Internal Board, Side 1

Photograph 8. CNX-WiFi, Internal Board, Side 2



Photograph 9. CNX-WiFi, Internal 2.4 GHz Antenna Position

Photograph 10. CNX-WiFi, Internal 5 GHz Antenna Position

Photograph 11. 450 Watt AC Adapter

F. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

G. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to Intellian Technologies USA Inc upon completion of testing.

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.203 Antenna Requirement

Test Requirement: **§ 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Test Results: The EUT was **compliant** with the requirements of this section. EUT uses internal anntenas with U.FL connectors.

Ant0:	4.36dBi @ 5250MHz
	4.28dBi @ 5450MHz
	3.72dBi @ 5550MHz
	4.16dBi @ 5650MHz
Ant1:	4.23dBi @ 5250MHz
	5.26dBi @ 5450MHz
	5.00dBi @ 5550MHz
	5.55dBi @ 5650MHz

Test Engineer(s): Donald Salguero

Test Date(s): September 19, 2023

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15. 403 26dB Bandwidth

Test Requirements: **§ 15.403:** Emission bandwidth. For purposes of this subpart the emission bandwidth is determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier.

Test Procedure: The transmitter was set to low, mid, and high operating frequencies at the highest output power and connected to the spectrum analyzer through an attenuator.

The emission bandwidth of the fundamental frequency was measured with the spectrum analyzer using a RBW approximately equal to 1-5% of the total emission bandwidth, VBW ≥ 3xRBW. The -26 dB Bandwidth was measured and recorded.

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): September 7, 2023

Mode	Center Frequency (MHz)	-26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
		Chain0	Chain1	Chain0	Chain1
802.11a	5260	19.598	19.785	16.6755	16.5590
	5300	19.218	20.248	16.6556	16.6163
	5320	19.332	20.294	16.6032	16.5615
802.11n HT20	5260	20.408	20.093	17.7540	17.7573
	5300	20.237	20.232	17.7844	17.8685
	5320	20.380	20.667	17.8070	17.7733
802.11ac VHT20	5260	20.216	20.305	17.7345	17.7951
	5300	20.274	20.244	17.7108	17.7180
	5320	20.016	20.260	17.7088	17.7307
802.11ax HE20	5260	20.620	21.327	18.9418	18.9938
	5300	21.495	21.206	18.9647	19.0202
	5320	21.182	21.172	18.9428	19.0853
802.11n HT40	5270	40.082	40.305	36.1009	36.0890
	5310	40.412	40.469	36.1666	36.2396
802.11ac VHT40	5270	39.983	40.214	36.2598	36.1493
	5310	40.217	40.603	36.1652	36.2344
802.11ax HE40	5270	41.115	41.549	37.8145	37.8599
	5310	41.123	41.222	37.6467	37.7488
802.11 ac VHT80	5290	82.153	82.544	75.0536	74.8435
802.11 ax HE80	5290	82.531	83.556	76.7805	76.7108
802.11 ax HE160	5250	81.501	81.731	77.9655	77.8447

Table 9. UNII2A, OBW - Test Results

Mode	Center Frequency (MHz)	-26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
		Chain0	Chain1	Chain0	Chain1
802.11a	5500	19.221	19.428	16.5502	16.5835
	5600	19.268	19.401	16.6247	16.5622
	5720	19.388	19.688	16.6264	16.5810
802.11n HT20	5500	20.356	20.322	17.6740	17.6650
	5600	20.639	20.141	17.7242	17.7601
	5720	20.310	20.295	17.6641	17.7054
802.11ac VHT20	5500	20.203	19.983	17.6489	17.7157
	5600	20.073	20.532	17.6762	17.7355
	5720	20.305	19.914	17.7023	17.6903
802.11ax HE20	5500	20.959	21.082	18.9209	18.9578
	5600	20.972	21.051	18.9577	18.9729
	5720	20.970	21.105	18.9041	18.9969
802.11n HT40	5510	40.451	40.393	36.0389	35.9921
	5590	40.020	40.277	36.0312	35.9960
	5710	40.105	39.989	36.0144	35.9607
802.11ac VHT40	5510	40.244	40.319	36.0095	36.0044
	5590	40.550	40.024	35.9691	35.9896
	5710	40.584	40.460	35.9949	35.9767
802.11ax HE40	5510	40.952	41.133	37.7587	37.7344
	5590	41.330	41.084	37.7706	37.9411
	5710	41.072	41.262	37.7068	37.6981
802.11 ac VHT80	5530	82.495	81.690	74.8284	74.9341
	5610	82.112	82.401	74.9710	74.9630
	5690	82.423	82.028	75.0159	74.9952
802.11 ax HE80	5530	82.867	83.108	76.6862	76.4358
	5610	82.962	82.996	76.7985	76.8562
	5690	82.716	82.536	76.7083	76.5270
802.11 ax HE160	5570	166.922	165.645	155.2309	154.8122

Table 10. UNII2C, OBW - Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

Duty Cycle

Test Procedure: The EUT was connected to a spectrum analyzer and was ran at the maximum achievable duty cycle for all modes. The duty cycle was measured in accordance with section 11.6 of ANSI C63.10-2013.

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): September 19, 2023

Mode	On Time (mS)	Period (mS)	Duty Cycle (%)	DCCF	1/T (Hz)
802.11a	0.9917	1.35	73.46	1.34	741
802.11n HT20	5.400	6.025	89.63	0.48	166
802.11ac VHT20	5.425	5.800	93.53	0.29	172
802.11ax HE20	5.425	6.025	90.04	0.46	166
802.11n HT40	5.375	5.700	94.30	0.25	175
802.11ac VHT40	5.400	5.725	94.32	0.25	175
802.11ax HE40	5.400	5.850	92.31	0.35	171
802.11ac VHT80	5.375	5.725	93.89	0.27	175
802.11ax HE80	5.400	5.900	91.53	0.38	169
802.11ax HE160	5.400	5.725	94.32	0.25	175

Table 11. Duty Cycle, Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

§15. 407(a)(2) Maximum Conducted Output Power

Test Requirements: **§15.407(a)(2):** For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.
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.

§15.407(h)(1): Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

Test Procedure: The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according to measurement method SA-2, as described in 789033 D02 General UNII Test Procedures v02r01.

To verify the TPC requirement of the rule part, observations using the same measurement method were made with the EUT set to a lower power setting.

MIMO directional gain, 2 antenna with unequal gain (correlated):
$10\log[(10^{G1/20}+10^{G2/20})^2/2]$

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): September 19 – September 22, 2023

Mode	Center Frequency (MHz)	Conducted Power (dBm)			Duty Cycle	Corrected OP (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum				
802.11a	5260	14.23	14.66	17.46	1.34	18.80	22.65	-3.85
	5300	14.97	14.16	17.59	1.34	18.93	22.69	-3.76
	5320	14.49	13.35	16.97	1.34	18.31	22.69	-4.38
802.11n HT20	5260	15.00	15.67	18.36	0.48	18.84	22.69	-3.85
	5300	15.67	15.80	18.75	0.48	19.23	22.69	-3.46
	5320	15.38	15.48	18.44	0.48	18.92	22.69	-3.77
802.11ac VHT20	5260	15.66	16.12	18.91	0.29	19.20	22.69	-3.49
	5300	15.83	16.24	19.05	0.29	19.34	22.69	-3.35
	5320	15.99	15.86	18.94	0.29	19.23	22.69	-3.46
802.11ax HE20	5260	15.09	16.04	18.60	0.46	19.06	22.69	-3.63
	5300	15.59	16.14	18.88	0.46	19.34	22.69	-3.35
	5320	15.81	15.50	18.67	0.46	19.13	22.69	-3.56
802.11n HT40	5270	18.17	17.90	21.05	0.25	21.30	22.69	-1.39
	5310	17.92	18.09	21.02	0.25	21.27	22.69	-1.42
802.11ac VHT40	5270	17.49	19.10	21.38	0.25	21.63	22.69	-1.06
	5310	18.06	18.84	21.48	0.25	21.73	22.69	-0.96
802.11ax HE40	5270	16.99	18.03	20.55	0.35	20.90	22.69	-1.79
	5310	17.06	17.30	20.19	0.35	20.54	22.69	-2.15
802.11 ac VHT80	5290	18.01	18.51	21.28	0.27	21.55	22.69	-1.14
802.11 ax HE80	5290	17.52	18.16	20.86	0.38	21.24	22.69	-1.45
802.11 ax HE160	5250	16.29	16.17	19.24	0.25	19.49	22.69	-3.20

Table 12. UNII2A, Conducted Output Power - Test Results

Mode	Center Frequency (MHz)	Corrected OP (dBm)	Directional Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
802.11a	5260	18.80	7.31	26.11	30.00	-3.89
	5300	18.93	7.31	26.24	30.00	-3.76
	5320	18.31	7.31	25.62	30.00	-4.38
802.11n HT20	5260	18.84	7.31	26.15	30.00	-3.85
	5300	19.23	7.31	26.54	30.00	-3.46
	5320	18.92	7.31	26.23	30.00	-3.77
802.11ac VHT20	5260	19.20	7.31	26.51	30.00	-3.49
	5300	19.34	7.31	26.65	30.00	-3.35
	5320	19.23	7.31	26.54	30.00	-3.46
802.11ax HE20	5260	19.06	7.31	26.37	30.00	-3.63
	5300	19.34	7.31	26.65	30.00	-3.35
	5320	19.13	7.31	26.44	30.00	-3.56
802.11n HT40	5270	21.30	7.31	28.61	30.00	-1.39
	5310	21.27	7.31	28.58	30.00	-1.42
802.11ac VHT40	5270	21.63	7.31	28.94	30.00	-1.06
	5310	21.73	7.31	29.04	30.00	-0.96
802.11ax HE40	5270	20.90	7.31	28.21	30.00	-1.79
	5310	20.54	7.31	27.85	30.00	-2.15
802.11 ac VHT80	5290	21.55	7.31	28.86	30.00	-1.14
802.11 ax HE80	5290	21.24	7.31	28.55	30.00	-1.45
802.11 ax HE160	5250	19.49	7.31	26.80	30.00	-3.20

Table 13. UNII2A, EIRP - Test Results

TPC										
Mode	Center Frequency (MHz)	Conducted Power (dBm)			Duty Cycle	Corrected OP (dBm)	Directional Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum						
802.11a	5260	9.15	9.47	12.32	1.34	13.66	7.31	20.97	24.00	-3.03
	5300	9.07	9.68	12.40	1.34	13.74	7.31	21.05	24.00	-2.95
	5320	10.49	9.75	13.15	1.34	14.49	7.31	21.80	24.00	-2.20
802.11n HT20	5260	11.14	11.50	14.33	0.48	14.81	7.31	22.12	24.00	-1.88
	5300	11.09	11.40	14.26	0.48	14.74	7.31	22.05	24.00	-1.95
	5320	11.43	11.85	14.66	0.48	15.14	7.31	22.45	24.00	-1.55
802.11ac VHT20	5260	11.48	11.58	14.54	0.29	14.83	7.31	22.14	24.00	-1.86
	5300	10.96	11.59	14.30	0.29	14.59	7.31	21.90	24.00	-2.10
	5320	11.43	11.66	14.56	0.29	14.85	7.31	22.16	24.00	-1.84
802.11ax HE20	5260	10.57	11.02	13.81	0.46	14.27	7.31	21.58	24.00	-2.42
	5300	10.21	10.95	13.61	0.46	14.07	7.31	21.38	24.00	-2.62
	5320	10.48	10.90	13.71	0.46	14.17	7.31	21.48	24.00	-2.52
802.11n HT40	5270	12.10	11.83	14.98	0.25	15.23	7.31	22.54	24.00	-1.46
	5310	12.05	12.02	15.05	0.25	15.30	7.31	22.61	24.00	-1.39
802.11ac VHT40	5270	11.88	12.01	14.96	0.25	15.21	7.31	22.52	24.00	-1.48
	5310	12.30	12.12	15.22	0.25	15.47	7.31	22.78	24.00	-1.22
802.11ax HE40	5270	11.80	12.05	14.94	0.35	15.29	7.31	22.60	24.00	-1.40
	5310	12.07	12.26	15.18	0.35	15.53	7.31	22.84	24.00	-1.16
802.11 ac VHT80	5290	11.53	11.44	14.50	0.27	14.77	7.31	22.08	24.00	-1.92
802.11 ax HE80	5290	11.48	11.78	14.64	0.38	15.02	7.31	22.33	24.00	-1.67
802.11 ax HE160	5250	11.73	12.10	14.93	0.25	15.18	7.31	22.49	24.00	-1.51

Table 14. UNII2A, TPC 6dB down - Test Results

Mode	Center Frequency (MHz)	Conducted Power (dBm)			Duty Cycle	Corrected OP (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum				
802.11a	5500	13.69	15.00	17.40	1.34	18.74	22.09	-3.35
	5600	14.64	15.00	17.83	1.34	19.17	22.49	-3.32
	5720	14.46	13.85	17.18	1.34	18.52	22.05	-3.53
802.11n HT20	5500	14.72	14.89	17.82	0.48	18.30	22.21	-3.91
	5600	15.11	15.95	18.56	0.48	19.04	22.61	-3.57
	5720	15.52	14.83	18.20	0.48	18.68	22.11	-3.43
802.11ac VHT20	5500	15.21	16.14	18.71	0.29	19.00	22.21	-3.21
	5600	14.95	16.45	18.77	0.29	19.06	22.61	-3.55
	5720	15.67	14.49	18.13	0.29	18.42	22.11	-3.69
802.11ax HE20	5500	15.55	16.43	19.02	0.46	19.48	22.21	-2.73
	5600	15.66	16.84	19.30	0.46	19.76	22.61	-2.85
	5720	15.98	15.10	18.57	0.46	19.03	22.11	-3.08
802.11n HT40	5510	18.28	19.03	21.68	0.25	21.93	22.21	-0.28
	5590	18.92	18.27	21.62	0.25	21.87	22.61	-0.74
	5710	18.24	17.59	20.94	0.25	21.19	22.11	-0.92
802.11ac VHT40	5510	17.74	19.16	21.52	0.25	21.77	22.21	-0.44
	5590	18.77	17.98	21.40	0.25	21.65	22.61	-0.96
	5710	18.41	17.26	20.88	0.25	21.13	22.11	-0.98
802.11ax HE40	5510	17.02	18.33	20.73	0.35	21.08	22.21	-1.13
	5590	18.19	19.23	21.75	0.35	22.10	22.61	-0.51
	5710	17.87	17.31	20.61	0.35	20.96	22.11	-1.15
802.11 ac VHT80	5530	17.52	17.86	20.70	0.27	20.97	22.21	-1.24
	5610	19.06	18.26	21.69	0.27	21.96	22.61	-0.65
	5690	18.60	17.96	21.30	0.27	21.57	22.11	-0.54
802.11 ax HE80	5530	16.67	18.03	20.41	0.38	20.79	22.21	-1.42
	5610	18.51	18.55	21.54	0.38	21.92	22.61	-0.69
	5690	18.23	17.59	20.93	0.38	21.31	22.11	-0.80
2.11 ax HE160	5570	16.69	16.03	19.38	0.25	19.63	22.61	-2.98

Table 15. UNII2C, Conducted Output Power - Test Results

Mode	Center Frequency (MHz)	Corrected OP (dBm)	Directional Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
802.11a	5500	18.74	7.79	26.53	30.00	-3.47
	5600	19.17	7.39	26.56	30.00	-3.44
	5720	18.52	7.89	26.41	30.00	-3.59
802.11n HT20	5500	18.30	7.79	26.09	30.00	-3.91
	5600	19.04	7.39	26.43	30.00	-3.57
	5720	18.68	7.89	26.57	30.00	-3.43
802.11ac VHT20	5500	19.00	7.79	26.79	30.00	-3.21
	5600	19.06	7.39	26.45	30.00	-3.55
	5720	18.42	7.89	26.31	30.00	-3.69
802.11ax HE20	5500	19.48	7.79	27.27	30.00	-2.73
	5600	19.76	7.39	27.15	30.00	-2.85
	5720	19.03	7.89	26.92	30.00	-3.08
802.11n HT40	5510	21.93	7.79	29.72	30.00	-0.28
	5590	21.87	7.39	29.26	30.00	-0.74
	5710	21.19	7.89	29.08	30.00	-0.92
802.11ac VHT40	5510	21.77	7.79	29.56	30.00	-0.44
	5590	21.65	7.39	29.04	30.00	-0.96
	5710	21.13	7.89	29.02	30.00	-0.98
802.11ax HE40	5510	21.08	7.79	28.87	30.00	-1.13
	5590	22.10	7.39	29.49	30.00	-0.51
	5710	20.96	7.89	28.85	30.00	-1.15
802.11 ac VHT80	5530	20.97	7.79	28.76	30.00	-1.24
	5610	21.96	7.39	29.35	30.00	-0.65
	5690	21.57	7.89	29.46	30.00	-0.54
802.11 ax HE80	5530	20.79	7.79	28.58	30.00	-1.42
	5610	21.92	7.39	29.31	30.00	-0.69
	5690	21.31	7.89	29.20	30.00	-0.80
802.11 ax HE160	5570	19.63	7.39	27.02	30.00	-2.98

Table 16. UNII2C, EIRP - Test Results

TPC										
Mode	Center Frequency (MHz)	Conducted Power (dBm)			Duty Cycle	Corrected OP (dBm)	Directional Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum						
802.11a	5500	10.15	10.36	13.27	1.34	14.61	7.79	22.40	24.00	-1.60
	5600	11.20	10.95	14.09	1.34	15.43	7.39	22.82	24.00	-1.18
	5720	10.63	10.14	13.40	1.34	14.74	7.89	22.63	24.00	-1.37
802.11n HT20	5500	10.42	11.35	13.92	0.48	14.40	7.79	22.19	24.00	-1.81
	5600	12.15	11.87	15.02	0.48	15.50	7.39	22.89	24.00	-1.11
	5720	11.48	10.52	14.04	0.48	14.52	7.89	22.41	24.00	-1.59
802.11ac VHT20	5500	10.93	11.50	14.23	0.29	14.52	7.79	22.31	24.00	-1.69
	5600	11.97	12.03	15.01	0.29	15.30	7.39	22.69	24.00	-1.31
	5720	11.46	10.22	13.89	0.29	14.18	7.89	22.07	24.00	-1.93
802.11ax HE20	5500	10.02	10.78	13.43	0.46	13.89	7.79	21.68	24.00	-2.32
	5600	11.27	11.03	14.16	0.46	14.62	7.39	22.01	24.00	-1.99
	5720	10.60	9.65	13.16	0.46	13.62	7.89	21.51	24.00	-2.49
802.11n HT40	5510	10.61	11.89	14.31	0.25	14.56	7.79	22.35	24.00	-1.65
	5590	12.27	12.37	15.33	0.25	15.58	7.39	22.97	24.00	-1.03
	5710	11.31	10.31	13.85	0.25	14.10	7.89	21.99	24.00	-2.01
802.11ac VHT40	5510	11.00	11.83	14.45	0.25	14.70	7.79	22.49	24.00	-1.51
	5590	12.01	12.41	15.22	0.25	15.47	7.39	22.86	24.00	-1.14
	5710	10.56	11.38	14.00	0.25	14.25	7.89	22.14	24.00	-1.86
802.11ax HE40	5510	10.63	11.49	14.09	0.35	14.44	7.79	22.23	24.00	-1.77
	5590	12.24	12.17	15.22	0.35	15.57	7.39	22.96	24.00	-1.04
	5710	10.99	10.51	13.77	0.35	14.12	7.89	22.01	24.00	-1.99
802.11 ac VHT80	5530	11.15	11.51	14.34	0.27	14.61	7.79	22.40	24.00	-1.60
	5610	11.59	11.41	14.51	0.27	14.78	7.39	22.17	24.00	-1.83
	5690	11.26	10.33	13.83	0.27	14.10	7.89	21.99	24.00	-2.01
802.11 ax HE80	5530	10.93	11.27	14.11	0.38	14.49	7.79	22.28	24.00	-1.72
	5610	11.17	11.33	14.26	0.38	14.64	7.39	22.03	24.00	-1.97
	5690	10.76	10.17	13.49	0.38	13.87	7.89	21.76	24.00	-2.24
802.11 ax HE160	5570	11.63	11.89	14.77	0.25	15.02	7.39	22.41	24.00	-1.59

Table 17. UNII2C, TPC 6dB down - Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(a)(2) Maximum Power Spectral Density

Test Requirements: **§15.407(a)(2):** In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

Test Procedure: The EUT was connected to a spectrum analyzer through a cable and attenuator. Measurements were taken with the EUT set to transmit continuously on its low, mid, and high channels. Its power was measured according KDB 789033 D02 General UNII Test Procedures v02r01.

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): September 19 – September 21, 2023

Mode	Center Frequency (MHz)	Conducted PSD (dBm)			Duty Cycle	Corrected PSD (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum				
802.11a	5260	4.416	4.911	7.68	1.34	9.02	9.56	-0.54
	5300	4.396	4.152	7.29	1.34	8.63	9.56	-0.93
	5320	4.333	4.367	7.36	1.34	8.70	9.56	-0.86
802.11n HT20	5260	5.052	5.555	8.32	0.48	8.80	9.56	-0.76
	5300	5.269	5.691	8.50	0.48	8.98	9.56	-0.58
	5320	5.491	5.502	8.51	0.48	8.99	9.56	-0.57
802.11ac VHT20	5260	5.376	6.050	8.74	0.29	9.03	9.56	-0.53
	5300	5.684	6.267	9.00	0.29	9.29	9.56	-0.27
	5320	6.119	5.723	8.94	0.29	9.23	9.56	-0.33
802.11ax HE20	5260	5.123	5.802	8.49	0.46	8.95	9.56	-0.61
	5300	5.667	5.778	8.73	0.46	9.19	9.56	-0.37
	5320	5.630	5.610	8.63	0.46	9.09	9.56	-0.47
802.11n HT40	5270	5.124	5.777	8.47	0.25	8.72	9.56	-0.84
	5310	5.232	5.204	8.23	0.25	8.48	9.56	-1.08
802.11ac VHT40	5270	5.662	6.413	9.06	0.25	9.31	9.56	-0.25
	5310	5.633	5.807	8.73	0.25	8.98	9.56	-0.58
802.11ax HE40	5270	4.442	5.094	7.79	0.35	8.14	9.56	-1.42
	5310	4.442	4.386	7.42	0.35	7.77	9.56	-1.79
802.11 ac VHT80	5290	2.904	3.361	6.15	0.27	6.42	9.56	-3.14
802.11 ax HE80	5290	2.692	3.216	5.97	0.38	6.35	9.56	-3.21
802.11 ax HE160	5250	-1.954	-1.845	1.11	0.25	1.36	9.56	-8.20

Table 18. UNII2A, PSD - Test Results

Mode	Center Frequency (MHz)	Conducted PSD (dBm)			Duty Cycle	Corrected PSD (dBm)	Limit (dBm)	Margin (dB)
		Chain0	Chain1	Sum				
802.11a	5500	4.327	5.201	7.80	1.34	9.14	9.21	-0.07
	5600	4.265	5.787	8.10	1.34	9.44	9.61	-0.17
	5720	4.463	3.565	7.05	1.34	8.39	9.11	-0.72
802.11n HT20	5500	4.633	5.001	7.83	0.48	8.31	9.21	-0.90
	5600	4.828	6.615	8.82	0.48	9.30	9.61	-0.31
	5720	5.259	5.088	8.18	0.48	8.66	9.11	-0.45
802.11ac VHT20	5500	5.015	5.794	8.43	0.29	8.72	9.21	-0.49
	5600	5.052	6.709	8.97	0.29	9.26	9.61	-0.35
	5720	5.386	5.107	8.26	0.29	8.55	9.11	-0.56
802.11ax HE20	5500	5.125	5.963	8.57	0.46	9.03	9.21	-0.18
	5600	5.077	6.527	8.87	0.46	9.33	9.61	-0.28
	5720	5.625	5.313	8.48	0.46	8.94	9.11	-0.17
802.11n HT40	5510	5.102	6.316	8.76	0.25	9.01	9.21	-0.20
	5590	5.347	6.099	8.75	0.25	9.00	9.61	-0.61
	5710	5.042	5.297	8.18	0.25	8.43	9.11	-0.68
802.11ac VHT40	5510	4.864	6.313	8.66	0.25	8.91	9.21	-0.30
	5590	5.447	5.846	8.66	0.25	8.91	9.61	-0.70
	5710	5.315	4.746	8.05	0.25	8.30	9.11	-0.81
802.11ax HE40	5510	3.876	5.351	7.69	0.35	8.04	9.21	-1.17
	5590	4.868	6.402	8.71	0.35	9.06	9.61	-0.55
	5710	5.217	4.572	7.92	0.35	8.27	9.11	-0.84
802.11 ac VHT80	5530	1.803	2.435	5.14	0.27	5.41	9.21	-3.80
	5610	3.063	3.378	6.23	0.27	6.50	9.61	-3.11
	5690	2.806	2.948	5.89	0.27	6.16	9.11	-2.95
802.11 ax HE80	5530	1.739	2.277	5.03	0.38	5.41	9.21	-3.80
	5610	2.730	4.082	6.47	0.38	6.85	9.61	-2.76
	5690	2.660	2.836	5.76	0.38	6.14	9.11	-2.97
802.11 ax HE160	5570	-1.486	-1.009	1.77	0.25	2.02	9.61	-7.59

Table 19. UNII2C, PSD - Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

§15.407(b)(2 – 3) & (9 – 10) Undesirable Emissions

Test Requirements:

§ 15.407(b)(2): For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

§ 15.407(b)(3): For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

§ 15.407(b)(9): Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

§ 15.407(b)(10): The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Test Procedure:

Unwanted emissions measurements were performed at the antenna por as conducted measurements plus cabinet emissions measurements in a radiated setup. Guidance from section G in FCC KDB 789033 D02 General UNII Test Procedure New Rules v02r01 were followed.

For cabinet emissions mesurements, the EUT was placed on a non-conducting stand on a turntable in a chamber. To find the maximum emission the EUT was set to transmit on low, mid, and high channels. Additionally, the turntable was rotated 360 degrees, the EUT was oriented through its three orthogonal axes, and the receive antenna height was varied in order to maximize emissions.

For frequencies from 30 MHz to 1 GHz, measurements were first made using a peak detector with a 100 kHz resolution bandwidth. Emissions which exceeded the limits were re-measured using a quasi-peak detector with a 120 kHz resolution bandwidth.

Above 1 GHz, measurements were made pursuant the method described in FCC KDB 789033 D02 General UNII Test Procedure New Rules v02r01. The equation, **EIRP= E + 20 log D – 104.8** was used to convert field strength to EIRP (**E** = field strength (dBµV/m) and **D** = Reference measurement distance**).**

For emissions above 1 GHz and in restricted bands, measurements of the field strength were made with a peak detector and an average detector and compared with the limits of 15.209.

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): September 19, 2023 – September 22, 2023 (Conducted Emissions)
October 3, 2023 – October 27, 2023 (Cabinet Emissions)

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBuV)			AVG Limit (dBuV)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5320	5350	40.72	36.37	42.08	54	-11.92
802.11n HT20	5320	5350	38.25	33.37	39.47	54	-14.53
802.11ac VHT20	5320	5350	38.13	38.59	41.38	54	-12.62
802.11ax HE20	5320	5350	37.62	38.48	41.08	54	-12.92
802.11n HT40	5310	5350	51.52	48.87	53.4	54	-0.6
802.11ac VHT40	5310	5350	50.43	49.6	53.05	54	-0.95
802.11ax HE40	5310	5350	48.73	47.4	51.13	54	-2.87
802.11ac VHT80	5290	5350	49.54	49.66	52.61	54	-1.39
802.11ax HE80	5290	5350	49.53	50.31	52.95	54	-1.05
802.11ax HE160	5250	5150	50.48	49.37	52.97	54	-1.03
	5250	5350	44.51	45.03	47.79	54	-6.21

Table 20. UNII2A, 15.209 Average Band Edges - Test Results

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBuV)			PK Limit (dBuV)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5320	5350	45.42	47.12	49.36	74	-24.64
802.11n HT20	5320	5350	47.56	47.77	50.68	74	-23.32
802.11ac VHT20	5320	5350	47.4	47.47	50.45	74	-23.55
802.11ax HE20	5320	5350	47.74	48.57	51.19	74	-22.81
802.11n HT40	5310	5350	60.25	58.65	62.53	74	-11.47
802.11ac VHT40	5310	5350	62.6	61.51	65.1	74	-8.9
802.11ax HE40	5310	5350	60.89	58.08	62.72	74	-11.28
802.11ac VHT80	5290	5350	61.03	61.72	64.4	74	-9.6
802.11ax HE80	5290	5350	60.7	60.78	63.75	74	-10.25
802.11ax HE160	5250	5150	61.7	62.8	65.3	74	-8.7
	5250	5350	56.49	59.43	61.21	74	-12.79

Table 21. UNII2A, 15.209 Peak Band Edges - Test Results

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBuV)			AVG Limit (dBuV)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5500	5460	35.99	35.71	38.86	54	-15.14
802.11n HT20	5500	5460	37.55	38.65	41.15	54	-12.85
802.11ac VHT20	5500	5460	37.84	38.46	41.17	54	-12.83
802.11ax HE20	5500	5460	36.65	38.55	40.71	54	-13.29
802.11n HT40	5510	5460	43.95	49.49	50.56	54	-3.44
802.11ac VHT40	5510	5460	33.57	44.04	44.41	54	-9.59
802.11ax HE40	5510	5460	41.2	44.39	46.09	54	-7.91
802.11ac VHT80	5530	5460	48.63	49.64	52.17	54	-1.83
802.11ax HE80	5530	5460	45.91	47.53	49.81	54	-4.19
802.11ax HE160	5570	5460	47.25	48.68	51.03	54	-2.97

Table 22. UNII2C, 15.209 Average Band Edges - Test Results

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBuV)			PK Limit (dBuV)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5500	5460	48.4	47.5	50.98	74	-23.02
802.11n HT20	5500	5460	49.97	49.09	52.56	74	-21.44
802.11ac VHT20	5500	5460	49.47	51.04	53.34	74	-20.66
802.11ax HE20	5500	5460	48.63	49.41	52.05	74	-21.95
802.11n HT40	5510	5460	54.91	64.29	64.76	74	-9.24
802.11ac VHT40	5510	5460	56.16	61.73	62.79	74	-11.21
802.11ax HE40	5510	5460	54.33	55.87	58.18	74	-15.82
802.11ac VHT80	5530	5460	61.63	63.46	65.65	74	-8.35
802.11ax HE80	5530	5460	62.03	63.9	66.08	74	-7.92
802.11ax HE160	5570	5460	59.62	61.89	63.91	74	-10.09

Table 23. UNII2C, 15.209 Peak Band Edges - Test Results

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBm)			Limit (dBm)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5320	5350	-33.65	-33.12	-30.37	-27	-3.37
802.11n HT20	5320	5350	-34.05	-34.74	-31.37	-27	-4.37
802.11ac VHT20	5320	5350	-41.91	-41.92	-38.9	-27	-11.9
802.11ax HE20	5320	5350	-41.87	-41.65	-38.75	-27	-11.75
802.11n HT40	5310	5350	-29.79	-33.07	-28.12	-27	-1.12
802.11ac VHT40	5310	5350	-31.06	-32.29	-28.62	-27	-1.62
802.11ax HE40	5310	5350	-33.37	-34.22	-30.76	-27	-3.76
802.11ac VHT80	5290	5350	-31.77	-33	-29.33	-27	-2.33
802.11ax HE80	5290	5350	-32.01	-32.47	-29.22	-27	-2.22
802.11ax HE160	5250	5150	-30.38	-32	-28.1	-27	-1.1
	5250	5350	-35.65	-33.35	-31.34	-27	-4.34

Table 24. UNII2A, -27dBm Band Edges - Test Results

Mode	Channel Frequency (MHz)	Band Edge Frequency (MHz)	Band Edge Amplitude (dBm)			Limit (dBm)	Margin (dB)
			Chain0	Chain1	Sum		
802.11a	5500	5470	-42.89	-42.17	-39.5	-27	-12.5
	5720	5850	-46.04	-35.54	-35.17	-27	-8.17
802.11n HT20	5500	5470	-42.18	-40.64	-38.33	-27	-11.33
	5720	5850	-46.09	-44.41	-42.16	-27	-15.16
802.11ac VHT20	5500	5470	-42.07	-40.57	-38.25	-27	-11.25
	5720	5850	-47.18	-44.87	-42.86	-27	-15.86
802.11ax HE20	5500	5470	-40.53	-41.64	-38.04	-27	-11.04
	5720	5850	-45.85	-45.58	-42.7	-27	-15.7
802.11n HT40	5510	5470	-34.11	-28.14	-27.16	-27	-0.16
	5710	5850	-44.24	-44.04	-41.13	-27	-14.13
802.11ac VHT40	5510	5470	-34.3	-28.74	-27.67	-27	-0.67
	5710	5850	-43.36	-43.11	-40.22	-27	-13.22
802.11ax HE40	5510	5470	-33.25	-30.14	-28.41	-27	-1.41
	5710	5850	-44.52	-43.66	-41.06	-27	-14.06
802.11ac VHT80	5530	5470	-31.07	-29.85	-27.41	-27	-0.41
	5690	5850	-42.49	-42.51	-39.49	-27	-12.49
802.11ax HE80	5530	5470	-30.74	-29.4	-27.01	-27	-0.01
	5690	5850	-42.34	-42.31	-39.31	-27	-12.31
802.11ax HE160	5570	5470	-32.46	-30.85	-28.57	-27	-1.57

Table 25. UNII2C, -27dBm Band Edges, Test Results

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(6) Conducted Emissions

Test Requirement(s): **§ 15.407 (b)(6):** Any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

§ 15.207 (a): For an intentional radiator 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 30MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Σ line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dBμV)	
	Quasi-Peak	Average
* 0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

Table 26. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Note: *Decreases with the logarithm of the frequency.

Test Procedure: The EUT was placed on a non-metallic table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 μH Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.10-2013*. Scans were performed with the transmitter on.

Test Results: The EUT was **compliant** with the requirements of this section.

Test Engineer(s): Donald Salguero

Test Date(s): October 19, 2023

Conducted Emissions Datasheet			
METrak Number	128375	Test Specification	FCC Part 15, Subpart B, Section 15.107; ICES-003, Section 3.2.1
Customer	Intellian Technologies USA Inc	Equipment Class	B
EUT Name	CNX-WiFi	Engineer	Donald Salguero
Model/Part Number	BL5008	Test Date(s)	10/19/2023
Serial Number	5008232900005	Temperature	19.4°C
Mode of Operation	Active	Relative Humidity	54%
Notes:120V60Hz			
Start Frequency	150 kHz	Stop Frequency	30 MHz
Line Under Test	Line		

Frequency	Quasi-Peak Measurement	Correction Factor	Corrected Measurement	Quasi-Peak Limit	Margin	Result
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail
0.154	36.48	10.48	46.96	65.88	-18.92	PASS
0.63	36.6	10.03	46.63	56	-9.37	PASS
0.809	36.99	10.03	47.01	56	-8.99	PASS
0.989	36.75	10.02	46.77	56	-9.23	PASS
1.168	36.31	10.02	46.33	56	-9.67	PASS
1.351	35.79	10.02	45.81	56	-10.19	PASS
Frequency	**Average Measurement**	**Correction Factor**	**Corrected Measurement**	**Average Limit**	**Margin**	**Result**
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail
0.154	27.18	10.48	37.66	55.88	-18.22	PASS
0.2	23.53	10.26	33.79	54.57	-20.775	PASS
0.45	22.51	10.05	32.56	47.42	-14.858	PASS
0.63	23.95	10.03	33.98	46	-12.019	PASS
0.813	23.12	10.03	33.15	46	-12.85	PASS
18.243	22.1	10.23	32.33	50	-17.668	PASS

Table 27. CEV Data [Line, 120V60Hz]

Conducted Emissions Datasheet			
METrak Number	128375	Test Specification	FCC Part 15, Subpart B, Section 15.107; ICES-003, Section 3.2.1
Customer	Intellian Technologies USA Inc	Equipment Class	B
EUT Name	CNX-WiFi	Engineer	Donald Salguero
Model/Part Number	BL5008	Test Date(s)	10/19/2023
Serial Number	5008232900005	Temperature	19.4°C
Mode of Operation	Active	Relative Humidity	54%
Notes:120V60Hz			
Start Frequency	150 kHz	Stop Frequency	30 MHz
Line Under Test	Neutral		

Frequency	Quasi-Peak Measurement	Correction Factor	Corrected Measurement	Quasi-Peak Limit	Margin	Result
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail
0.634	37.18	10.07	47.25	56	-8.753	PASS
0.755	36.77	10.06	46.83	56	-9.173	PASS
0.813	37.67	10.06	47.72	56	-8.277	PASS
0.997	37.51	10.03	47.54	56	-8.46	PASS
1.176	37.23	10.04	47.27	56	-8.728	PASS
1.36	36.77	10.05	46.82	56	-9.184	PASS
Frequency	**Average Measurement**	**Correction Factor**	**Corrected Measurement**	**Average Limit**	**Margin**	**Result**
MHz	dBµV	dB	dBµV	dBµV	dB	Pass/Fail
0.154	29.7	10.51	40.21	55.88	-15.669	PASS
0.45	25.67	10.09	35.76	47.42	-11.663	PASS
0.588	24.88	10.08	34.95	46	-11.045	PASS
0.63	26.65	10.07	36.72	46	-9.275	PASS
0.813	26.28	10.06	36.34	46	-9.66	PASS
0.993	25.06	10.04	35.09	46	-10.906	PASS

Table 28. CEV Data [Neutral, 120V60Hz]

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

Conducted Emissions Equipment List						
Asset Number	**Description**	**Manufacturer**	**Model Number**	**Serial Number**	**Calibration Date**	**Calibration Due Date**
1T9989	Thermometer/Hygrometer	Fisher Scientific	06-662-4, 11725843	210843361	10/1/2021	10/1/2023
1T9572	EMI Receiver	Gauss Instruments	TDEMI X40	1902001	10/13/2021	10/31/2023
1T8910	LISN	Com-Power	LI-150A	201123	10/17/2022	4/30/2024
1T4795	LISN	Com-Power	LI-150A	201065	10/17/2022	4/30/2024
1T7450	Transient Limiter	Com-Power	LIT-153A	22010020	FVR	FVR
1T8834	Conducted Comb Generator	Com-Power	CGC-255E	311358	5/1/2023	5/31/2024
4T7208	ELECTRIC SWITCH	LEVITRON	N/A	N/A	FVR	FVR
4T7311	Precision Resistive Circuit	MET	N/A	N/A	FVR	FVR

Table 29. CEV Equipment List

Asset Number	Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
1T4751	Antenna - Bilog	Sunol Sciences	JB6	A101910	6/1/2022	1/1/2024
1T4757	Antenna; Horn	ETS-Lindgren	3117	123516	7/24/2023	1/31/2025
1T4744	Antenna, Horn	ETS-Lindgren	3116	126519	12/16/2022	6/16/2024
1T8743	Preamplifier	A.H. Systems, Inc.	PAM-0118P	419	Func Verify	Func Verify
1T4752	Pre-Amplifier	Miteq	JS44-18004000-35-8P	1594792	Func Verify	Func Verify
1T4300	SEMI-ANECHOIC CHAMBER (NSA)	EMC TEST SYSTEMS	NONE	NONE	8/31/2023	8/31/2025
1T4771	PSA Spectrum Analyzer	Agilent Technologies	E4446A	MY51100015	11/2/2023	5/31/2025
1T8744	Spectrum Analyzer (PSA)	Agilent Technologies	E4440A	US40420612	5/2/2023	5/2/2024

Table 30. Test Equipment List

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

End of Report