



OrthAlign

Lantern Reusable Navigation Unit

FCC 15.407:2024

FCC 15.205:2024

Wi-Fi 802.11 a/n/ac SISO Radio

Report: ORTH0035.3 Rev. 1, Issue Date: January 8, 2025



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CERTIFICATE OF TEST

Last Date of Test: December 16, 2024
OrthAlign
EUT: Lantern Reusable Navigation Unit

Radio Equipment Testing

Standards

Specification	Method
FCC 15.205:2024	ANSI C63.10:2013
FCC 15.407:2024	

Guidance

FCC KDB 558074 v05r02:2019

Results

Test Description	Result	Specification Section(s)	Method Section(s)	Comments
Powerline Conducted Emissions	N/A	15.407 (b)(6)	6.2	Not required for a battery powered EUT.
Frequency Stability	N/A	15.407 (g)	6.8	Not required to show compliance of the module in the host.
Emission Bandwidth 5.8 GHz	N/A	15.407(e), KDB 789033 -C2	6.9.2	Not required to show compliance of the module in the host.
Duty Cycle	Pass	15.407 KDB 789033 -B	12.2	
Maximum Conducted Output Power	Pass	15.407(a)(1)-(4), KDB 789033 -E2.d	12.3.2.4	
Equivalent Isotropic Radiated Power (EIRP)	Pass	15.407(a)(1)-(4), KDB 789033 -E2.d	12.3.2.4	
Emission Bandwidth	N/A	15.407(a), KDB 789033 -C1	12.4.1	Not required to show compliance of the module in the host.
Occupied Bandwidth	Pass	KDB 789033 -D	12.4.2	
Band Edge	N/A	15.407(h)(2)	12.4.2	Not required to show compliance of the module in the host.
Maximum Power Spectral Density	N/A	15.407(a)(1)-(5), KDB 789033 -F	12.5	Not required to show compliance of the module in the host.
Spurious Radiated Emissions	Pass	15.407 (b)(1)-(7), KDB 789033 -G	12.7, 6.5, 6.6	
Measurement of Emission at Elevation Angles	N/A	KDB 789033 -H	KDB 789033 -H	Not required unless the EUT is a Master device used outdoors.

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

CERTIFICATE OF TEST

Deviations From Test Standards

None

Approved By:



Johnny Candelas, Operations Manager
Signed for and on behalf of Element

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Antenna gain updated from 5.5 to 6.5 dBi. Software version added per Test Plan: VP0769 EMC Test Plan for Lantern Reusable Navigation Unit Rev A.pdf. (dBm) units added to power setting.	2024-12-20	13
	Comments added to direct connect modules	2024-12-20	17-98
	SN: 2401016 replaced instances of SN: "See Configurations" in all applicable data modules	2024-12-20	18, 32, 46, 55, 64, 73, 82, 91, 101, 104, 111, 114, 116, 118, 120, 122
	Limit for U-NII-1 Band updated to 24 dBm Limit for U-NII-3 Band updated to 30 dBm	2024-12-20	34, 39
	Retested with proper RBW	2024-12-20	40, 50, 56, 57, 62
	Recalculated EIRP with 6.5 dBi antenna gain for U-NII-1 and U-NII-3 bands EIRP Limit updated to 29.5 dBm for U-NII-1 band and 35.5 for U-NII-3 band	2024-12-20	44, 49
	Retested SRE. WC DCCF per signal BW.	2024-12-20	99-126
	Updated test dates	2025-01-02	3, 12, 16
	Updated EUT name	2025-01-02	18, 32, 46, 55, 64, 73, 82, 91, 101, 104, 111, 114, 116, 118, 120, 122
02	Added SRE data for -27dBm/MHz limit for both UNII bands.	2025-01-07	99-130

ACCREDITATIONS AND AUTHORIZATIONS



United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

European Commission – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS – Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit:

[California](#)

[Minnesota](#)

[Oregon](#)

[Texas](#)

[Washington](#)

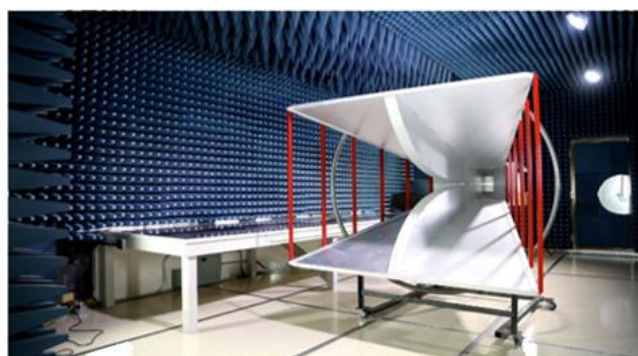
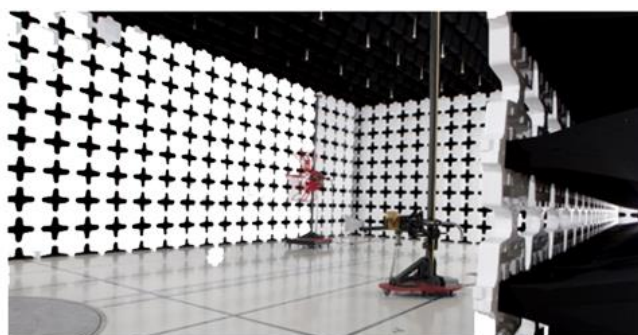
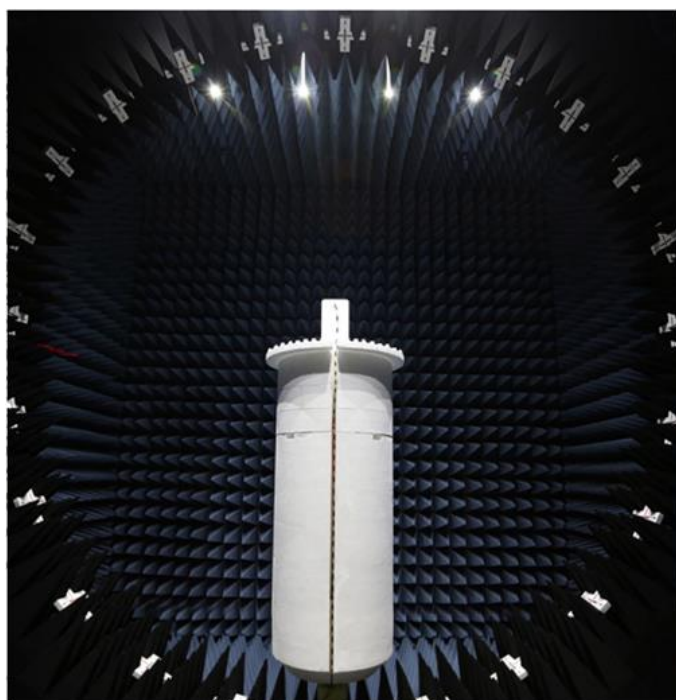
FACILITIES

Testing was performed at the following location(s)

	Location	Labs ⁽¹⁾	Address	A2LA ⁽²⁾	ISED ⁽³⁾	BSMI ⁽⁴⁾	VCCI ⁽⁵⁾	CAB ⁽⁶⁾	FDA ⁽⁷⁾
☒	California	OC01-17	41 Tesla Irvine, CA 92618 (949) 861-8918	3310.04	2834B	SL2-IN-E-1154R	A-0029	US0158	TL-55
☐	Minnesota	MN01-11	9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136	3310.05	2834E	SL2-IN-E-1152R	A-0109	US0175	TL-57
☐	Oregon	EV01-12	6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	3310.02	2834D	SL2-IN-E-1017	A-0108	US0017	TL-56
☐	Plano Texas	PT01-15	1701 E Plano Pkwy, Ste 150 Plano, TX 75074 (972) 509-2566	214.19	32637	SL2-IN-E-057R	A-0426	US0054	TL-137
☐	Washington	NC01-05	19201 120th Ave NE Bothell, WA 98011 (425) 984-6600	3310.06	2834F	SL2-IN-E-1153R	A-0110	US0157	TL-67
☐	Offsite	N/A	See Product Description	N/A	N/A	N/A	N/A	N/A	N/A

See data sheets for specific labs

- (1) The lab designations denote individual rooms within each location. (OC01, OC02, OC03, etc.)
- (2) A2LA Certificate No.
- (3) ISED Company No.
- (4) BSMI No.
- (5) VCCI Site Filing No.
- (6) CAB Identifier. Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA
- (7) FDA ASCA No.



MEASUREMENT UNCERTAINTY

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty ($k=2$) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable) and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Various Measurements

Test	All Labs (+/-)
Frequency Accuracy (%)	0.0007
Amplitude Accuracy (dB)	1.2
Conducted Power (dB)	1.2
Radiated Power via Substitution (dB)	0.7
Temperature (degrees C)	0.7
Humidity (% RH)	2.5
Voltage (AC) (%)	1
Voltage (DC) (%)	0.7

Field Strength Measurements (dB)

Range	OC10 (+/-)
10kHz-30MHz	1.8
30MHz-1GHz 3m	4.6
1GHz-6GHz	5
6GHz-40GHz	5.1

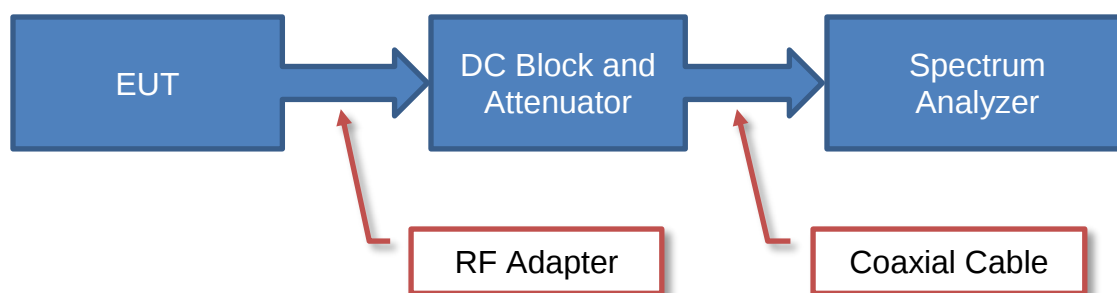
TEST SETUP BLOCK DIAGRAMS

Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

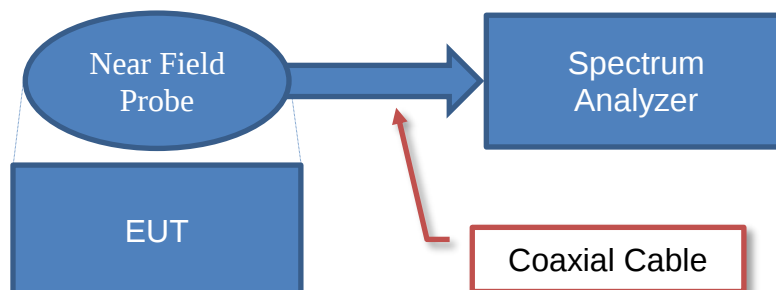
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

Near Field Test Fixture Measurements

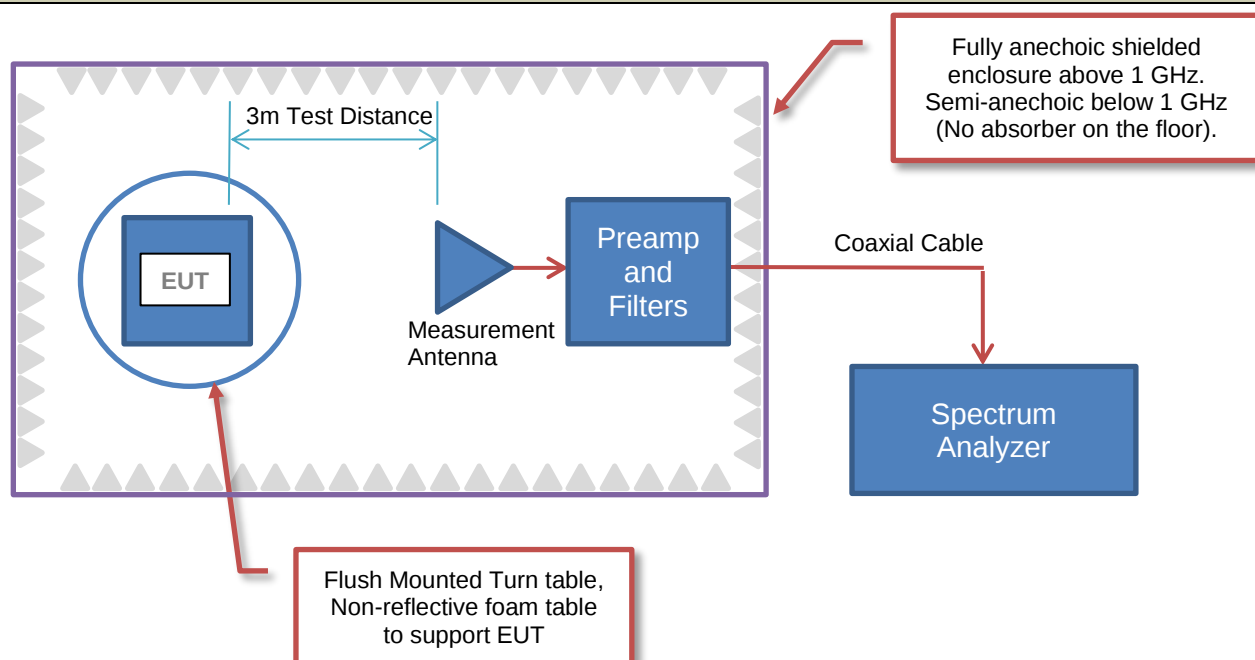


Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

Measured Level (Amplitude)	Factor				Distance Adjustment Factor	External Attenuation		Field Strength
	Antenna Factor	Cable Factor	Amplifier Gain					
42.6	28.6	3.1	40.8	+	0.0	+	0.0	= 33.5

Conducted Emissions:

Measured Level (Amplitude)	Factor			External Attenuation		Adjusted Level
	Transducer Factor	Cable Factor				
26.7	0.3	0.1	+	20.0	=	47.1

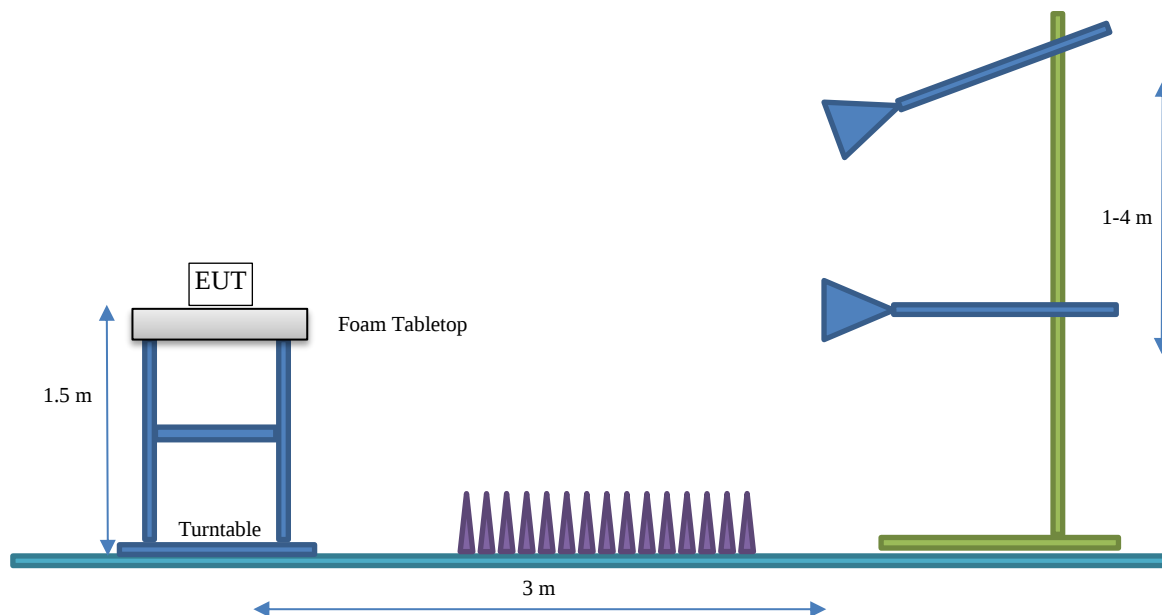
Radiated Power (ERP/EIRP) – Substitution Method:

Measured Level into Substitution Antenna (Amplitude dBm)		Substitution Antenna Factor (dBi)		EIRP to ERP (if applicable)		Measured power (dBm ERP/EIRP)
10.0	+	6.0	-	2.15	=	13.9/16.0

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION

Client and Equipment under Test (EUT) Information

Company Name:	OrthAlign
Address:	153 Technology Dr, Suite 100
City, State, Zip:	Irvine, CA 92618
Test Requested By:	Kian Gholizadeh
EUT:	Lantern Reusable Navigation Unit
First Date of Test:	October 22, 2024
Last Date of Test:	December 16, 2024
Receipt Date of Samples:	October 22, 2024
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

Surgical navigation device containing Wi-fi and Bluetooth Low Energy transmitter and receiver.

Testing Objective:

To demonstrate compliance of the Wi-Fi 802.11 a/n/ac SISO radio under FCC 15.407 for operation in the 5.2 GHz and 5.8 GHz band(s).

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

ANTENNA GAIN (dBi)

Type	Provided by:	Frequency Range	Gain (dBi)
FPC Antenna	Pulse/Larsen Antennas	5.x GHz radios	6.5

The EUT was tested using the power settings provided by the manufacturer which were based upon:

- ☒ Test software settings Software/firmware used for testing: Qualcomm Atheros Radio Control Toolkit v3.0.197.0
- ☐ Rated power settings

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types	Channel Bandwidths (MHz)	Band	Channel #	Frequency (MHz)	Power Setting (dBm)
6 Mbps, 36 Mbps, 54 Mbps	20	U-NII-1	36	5180	11
			44	5220	13
			48	5240	14
MCS0, MCS7	20	U-NII-1	36	5180	10
			44	5220	13
			48	5240	14
MCS0, MCS7	40	U-NII-1	38	5190	11
			46	5230	18
MCS0, MCS9	80	U-NII-1	42	5210	8
6 Mbps, 36 Mbps, 54 Mbps	20	U-NII-3	149	5745	9
			157	5785	11
			165	5825	10
MCS0, MCS7	20	U-NII-3	149	5745	9
			157	5785	11
			165	5825	11
MCS0, MCS7	40	U-NII-3	151	5755	10
			159	5795	11
MCS0, MCS9	80	U-NII-3	155	5775	7

CONFIGURATIONS

Configuration ORTH0035-1

Software/Firmware Running During Test	
Description	Version
tn-image-fcc-qca-pico-imx7	0.0.0.32

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Lantern Reusable Navigation Unit (Radiated)	OrthAlign	407002	2401016

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop PC	Dell Inc.	Precision M4800	JPC1J72
DC Power Supply	Dell Inc.	DA180PM111	CN-0WW4XY-48661-5A6-4MZU-A05

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB to Ethernet Adapter Cable	Yes	10cm	No	Lantern Reusable Navigation Unit	Ethernet Cat 5 Cable
Ethernet Cat 5 Cable	No	10m	No	USB to Ethernet Adapter Cable	Laptop PC
DC Power Cables	No	10m	No	DC Power Supply	Lantern Reusable Navigation Unit
AC Cable	No	1m	No	DC Power Supply	AC Mains
DC Cable	No	2m	No	Lantern Reusable Navigation Unit	DC Power Supply

CONFIGURATIONS

Configuration ORTH0035-2

Software/Firmware Running During Test	
Description	Version
tn-image-fcc-qca-pico-imx7	0.0.0.32

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Lantern Reusable Navigation Unit (Conducted)	OrthAlign	407002	R213200116

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop PC	Dell	Precision 3520	F8STZM2
DC Power Supply	OrthAlign	DCP3010D	2019015178

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB to Ethernet Adapter Cable	Yes	10cm	No	Lantern Reusable Navigation Unit	Ethernet Cat 5 Cable
Ethernet Cat 5 Cable	No	10m	No	USB to Ethernet Adapter Cable	Laptop PC
DC Power Cables	No	10m	No	DC Power Supply	Lantern Reusable Navigation Unit
AC Cable	No	1m	No	DC Power Supply	AC Mains
DC Cable	No	2m	No	Lantern Reusable Navigation Unit	DC Power Supply

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2024-10-22	Spurious Radiated Emissions	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	2024-12-16	Equivalent Isotropic Radiated Power (EIRP)	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2024-12-16	Occupied Bandwidth	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	2024-12-16	Maximum Conducted Output Power	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2024-12-16	Duty Cycle	Tested as delivered to test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

DUTY CYCLE

U-NII-1

TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

Per ANSI C63.10:2013, all measurements are to be performed with the EUT operating at 100% duty cycle at its maximum power level. In the event the EUT cannot be operated at 100% duty cycle, the transmission pulse duration (T) and Duty Cycle (x) are required to be measured for each of the EUT operating modes.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, a duty cycle correction factor in dB can be calculated to add to power measurements if required in the test method guidance using the following formula

$$10 * \text{LOG} (1/D) = \text{dB}$$

Where D is duty cycle of the radio transmissions

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

DUTY CYCLE

U-NII-1



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

Tested By

TEST RESULTS

	Pulse Width	Period	Number of Pulses	Value (%)	Limit N/A (N/A)	Results
U-NII-1 Band (20MHz BW)						
Ch 36 - 5180 MHz						
802.11(a) 6 Mbps	2.029 ms	2.126 ms	1	95.4	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	356.6 us	480.4 us	1	74.2	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	244.7 us	386.4 us	1	63.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.341 ms	1.473 ms	1	91	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	224.6 us	348.3 us	1	64.5	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
Ch 44 - 5220 MHz						
802.11(a) 6 Mbps	1.432 ms	1.547 ms	1	92.6	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	256.6 us	344.4 us	1	74.5	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	180.6 us	268.5 us	1	67.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.34 ms	1.455 ms	1	92.1	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	168.6 us	256.4 us	1	65.8	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A

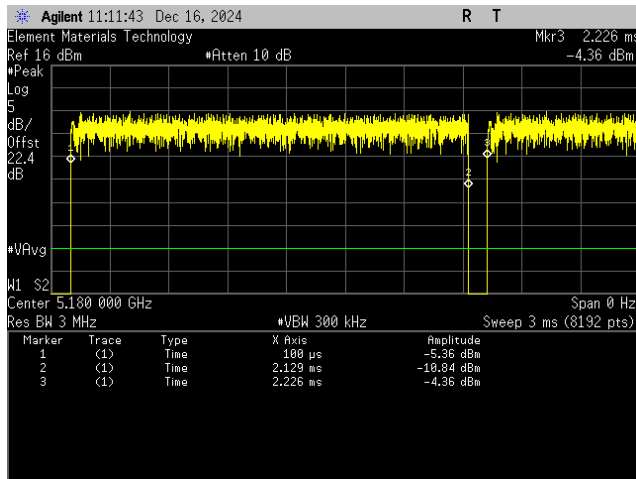
DUTY CYCLE

U-NII-1

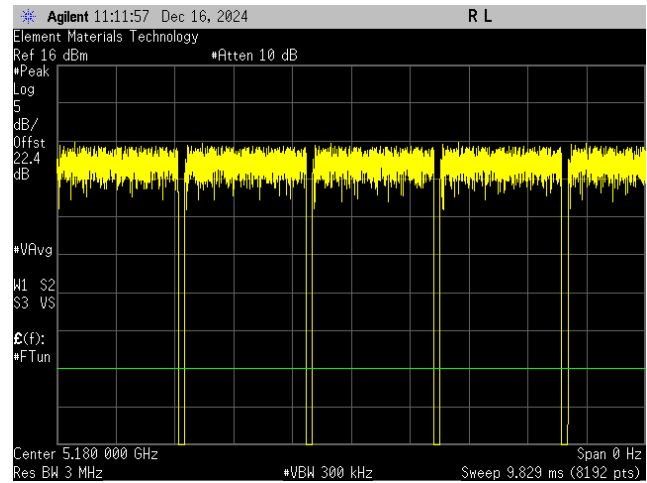
	Pulse Width	Period	Number of Pulses	Value (%)	Limit N/A (N/A)	Results
Ch 48 - 5240 MHz						
802.11(a) 6 Mbps	2.029 ms	2.165 ms	1	93.7	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	356.5 us	507.4 us	1	70.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	244.7 us	377.4 us	1	64.8	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.341 ms	1.438 ms	1	93.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	168.6 us	319.4 us	1	52.8	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
U-NII-1 Band (40MHz BW)						
Ch 38 - 5190 MHz						
802.11(n) MCS0	929.1 us	1.043 ms	1	89	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	129.1 us	225.2 us	1	57.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
Ch 46 - 5230 MHz						
802.11(n) MCS0	928.6 us	1.043 ms	1	89	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	129.1 us	234.2 us	1	55.1	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
U-NII-1 Band (80MHz BW)						
Ch 42 - 5210 MHz						
802.11(ac) MCS0	456.8 us	598.2 us	1	76.4	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(ac) MCS9	73.1 us	241 us	1	30.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

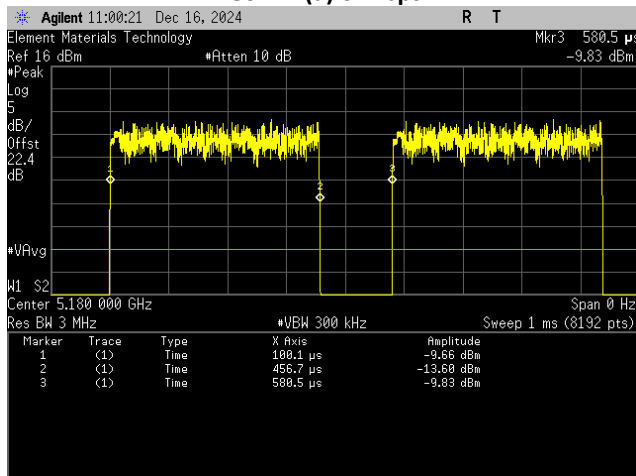
U-NII-1



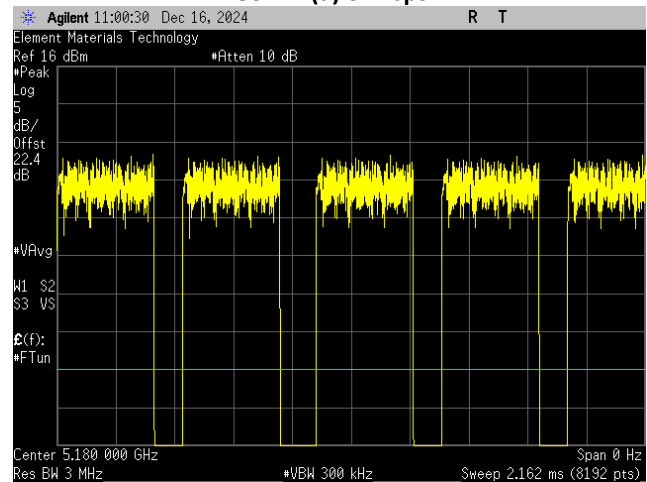
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 6 Mbps



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 6 Mbps



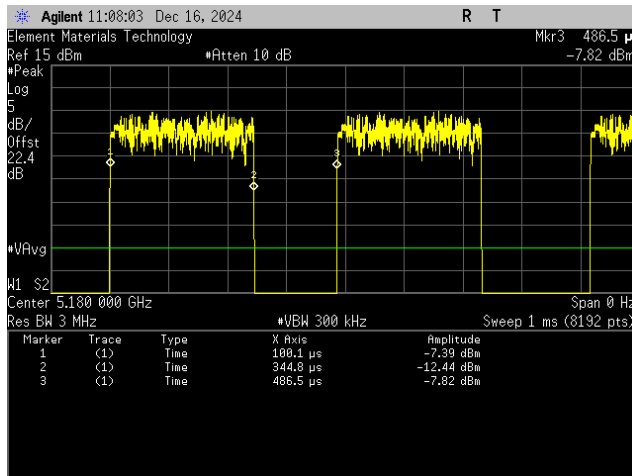
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 36 Mbps



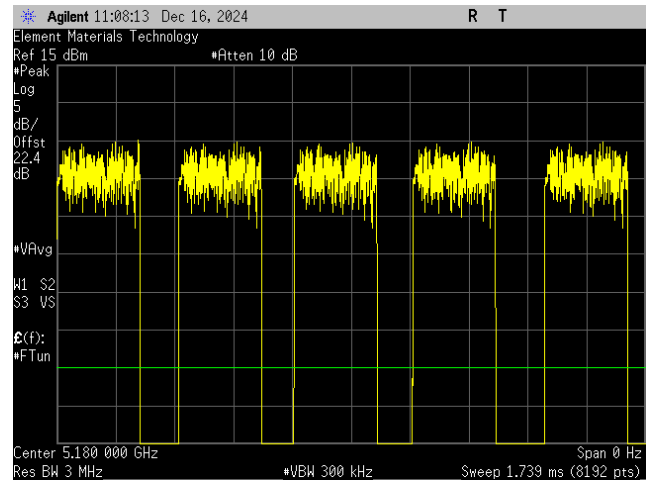
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 36 Mbps

DUTY CYCLE

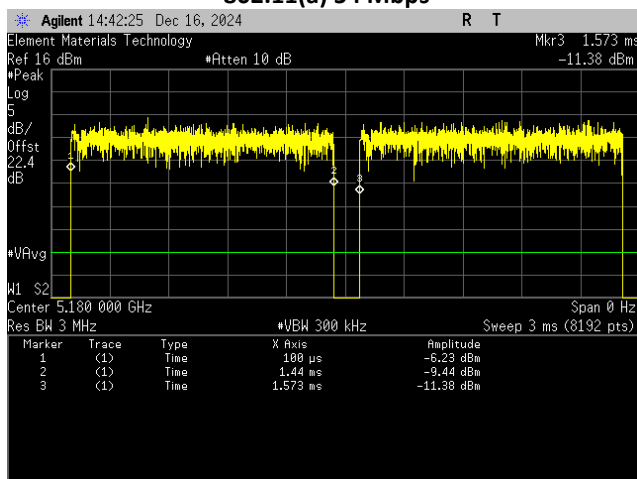
U-NII-1



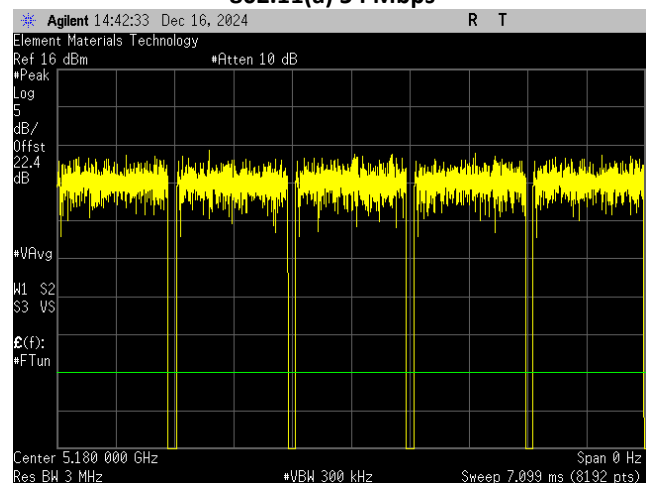
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 54 Mbps



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 54 Mbps



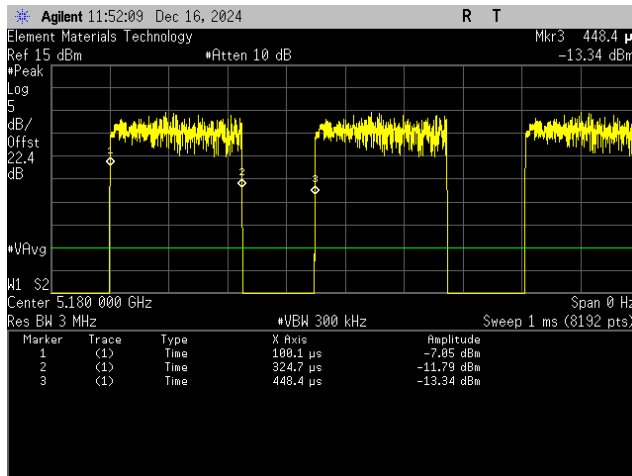
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS0



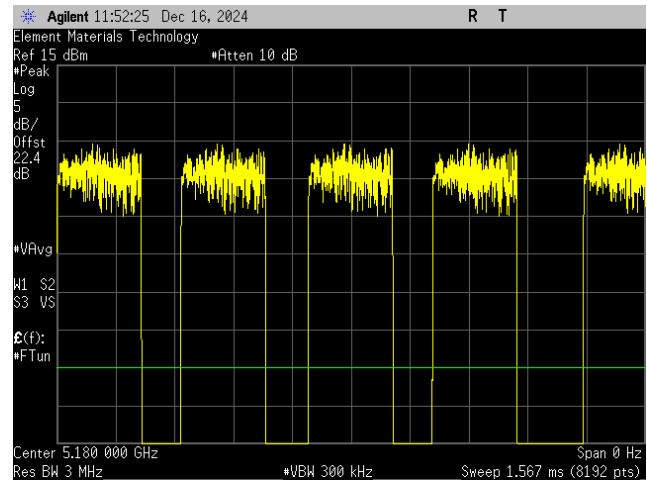
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS0

DUTY CYCLE

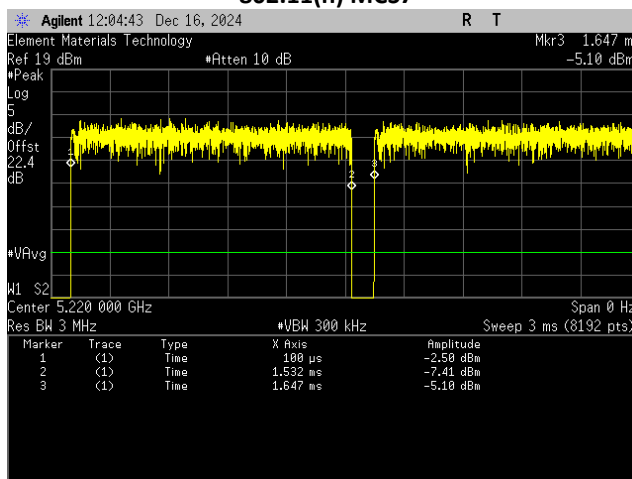
U-NII-1



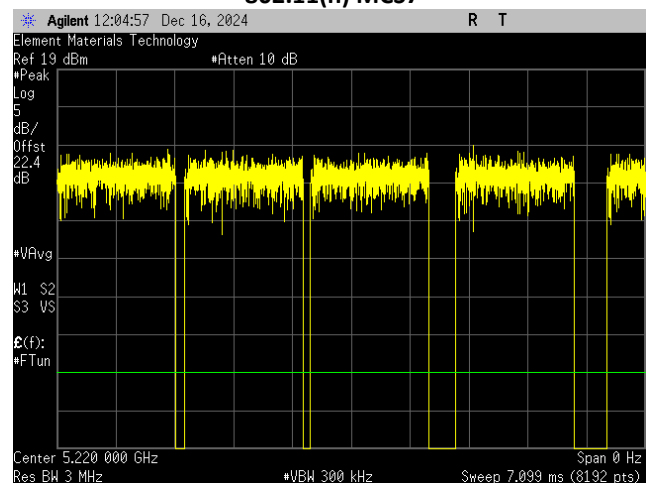
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS7



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS7



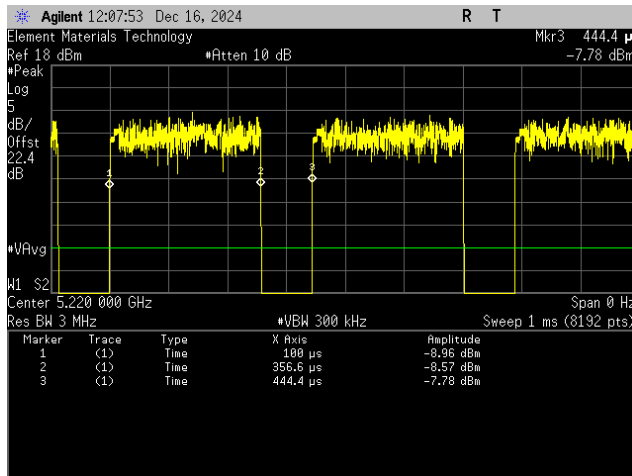
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 6 Mbps



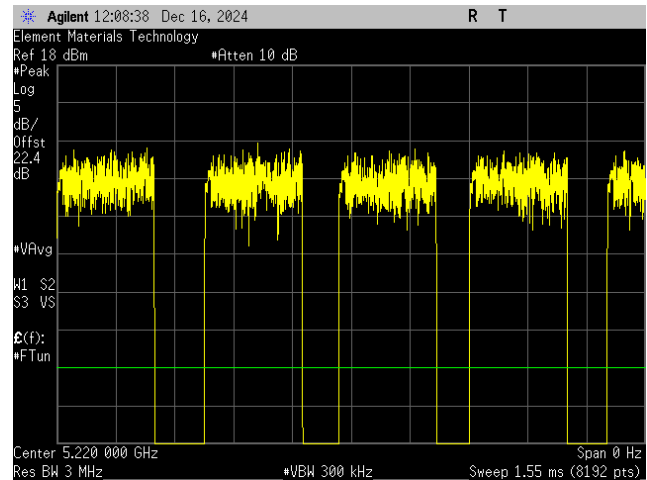
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 6 Mbps

DUTY CYCLE

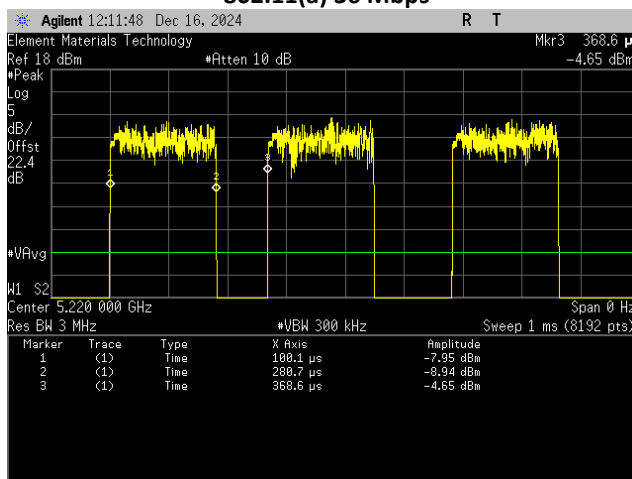
U-NII-1



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 36 Mbps



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 36 Mbps



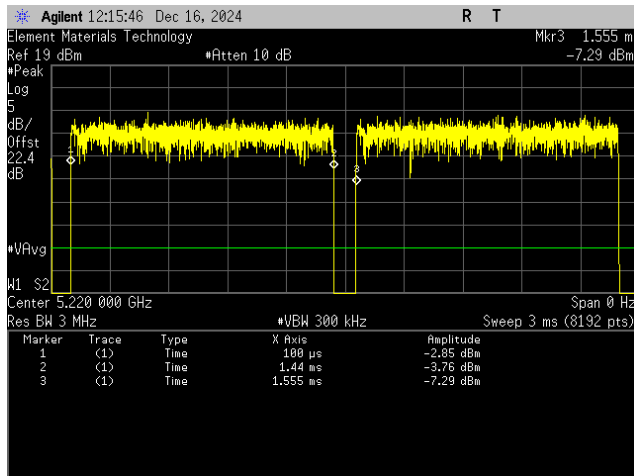
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 54 Mbps



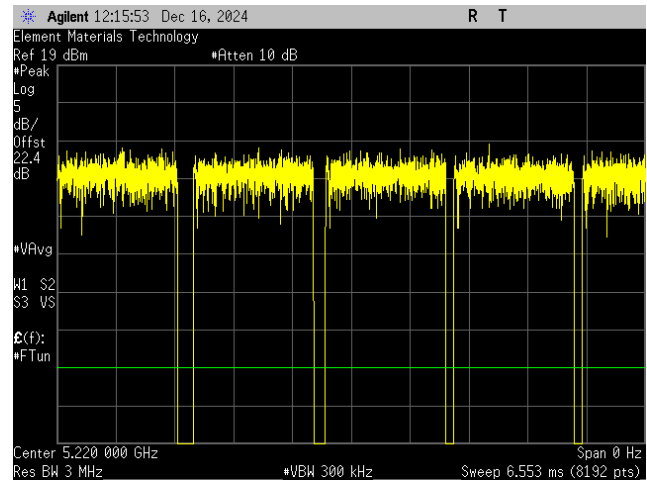
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 54 Mbps

DUTY CYCLE

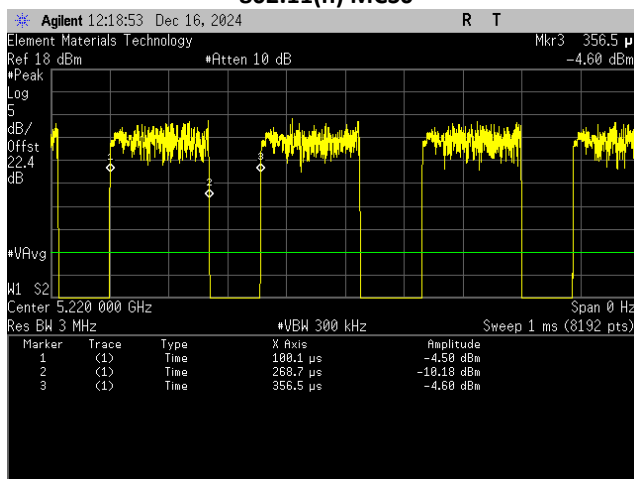
U-NII-1



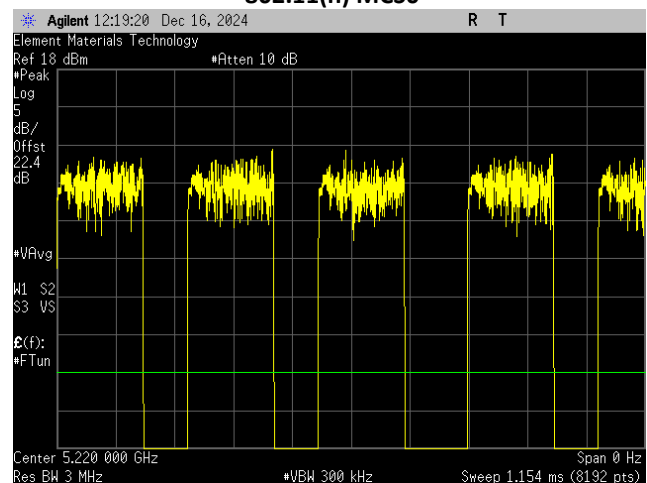
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS0



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS0



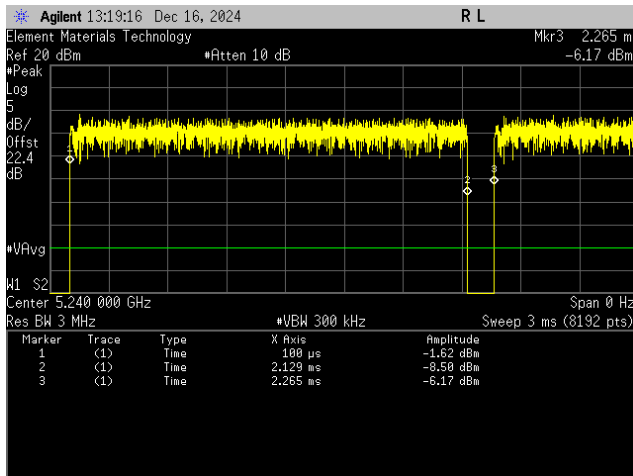
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS7



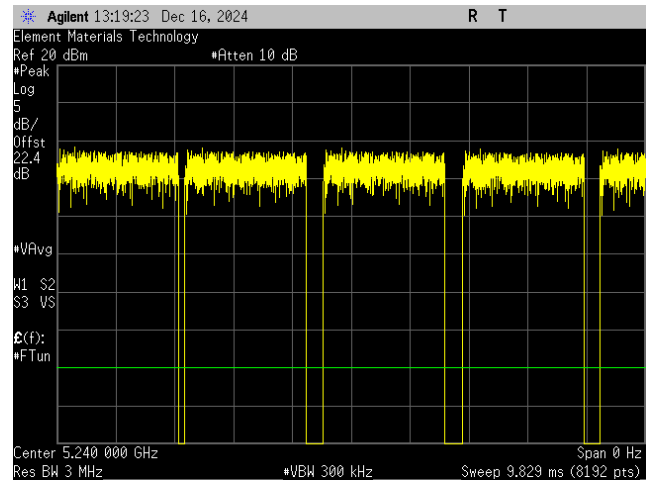
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS7

DUTY CYCLE

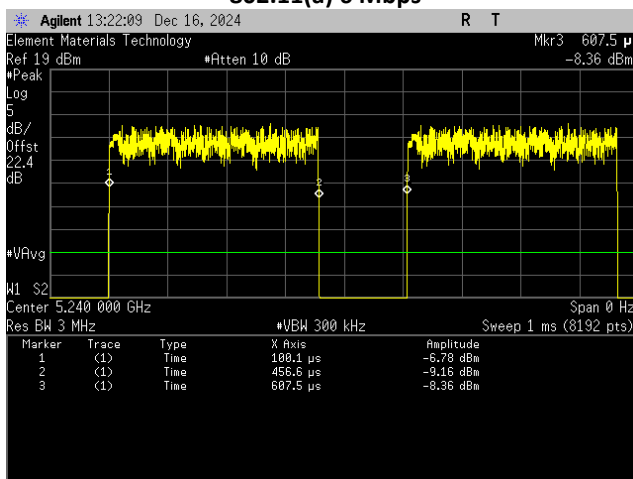
U-NII-1



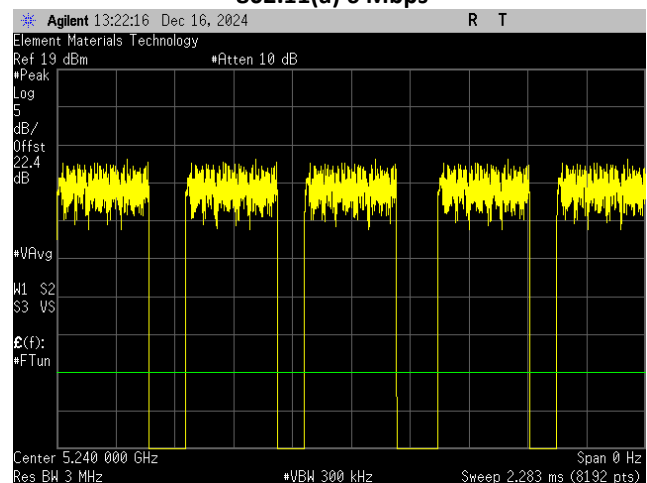
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 6 Mbps



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 6 Mbps



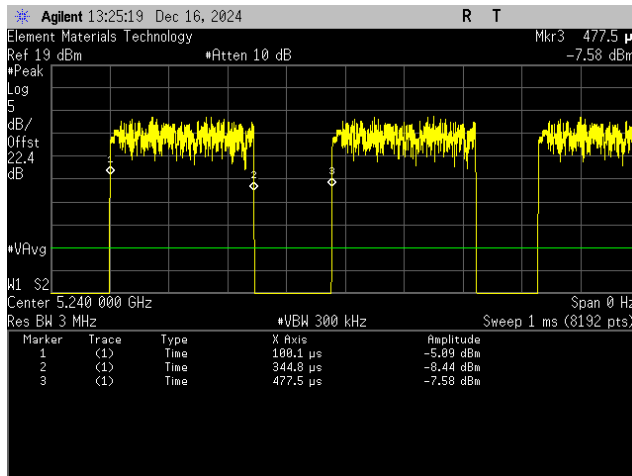
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 36 Mbps



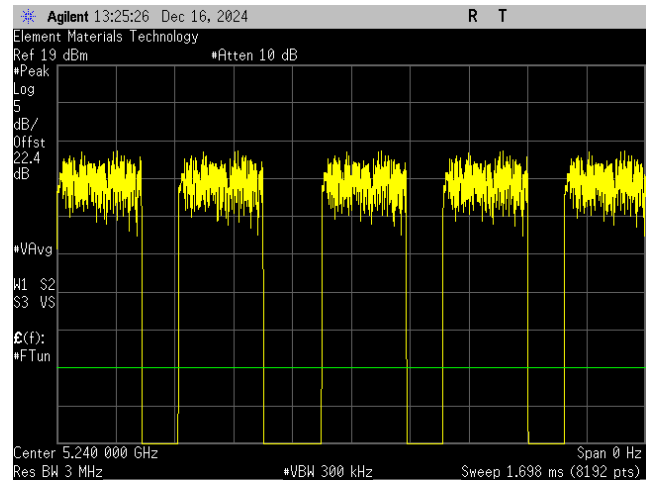
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 36 Mbps

DUTY CYCLE

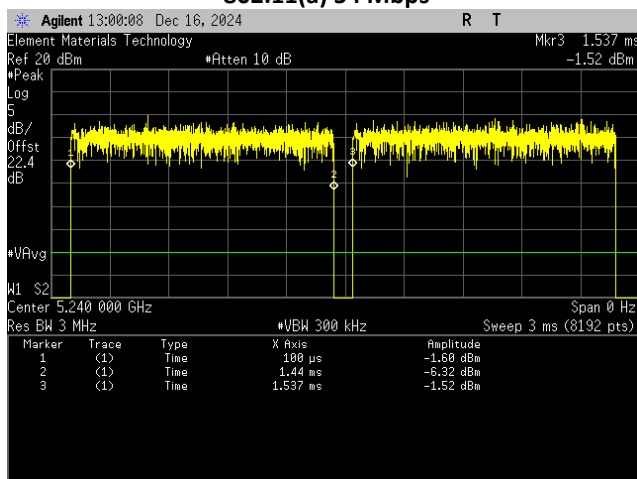
U-NII-1



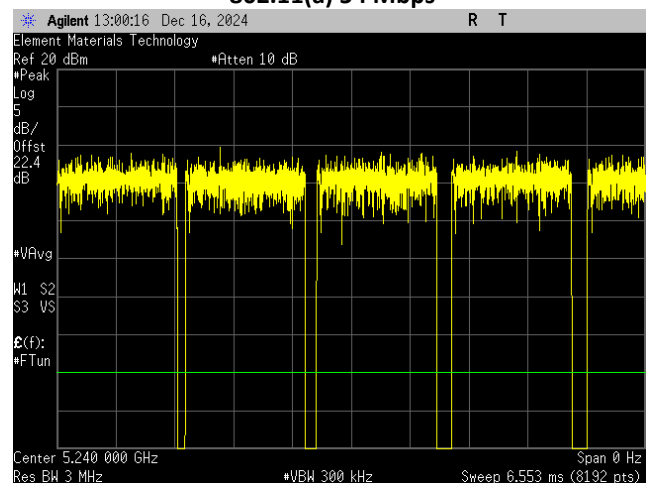
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 54 Mbps



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 54 Mbps



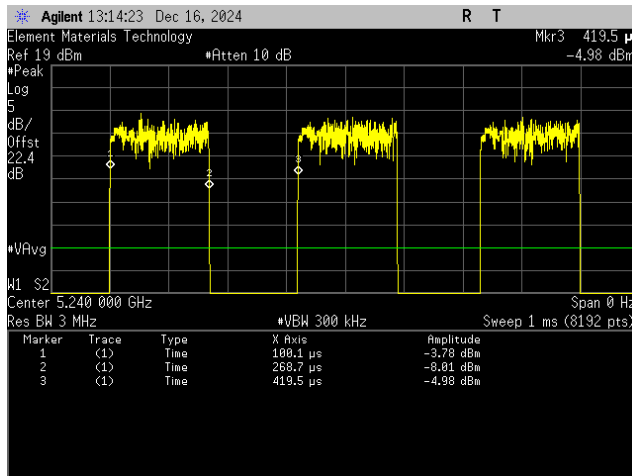
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS0



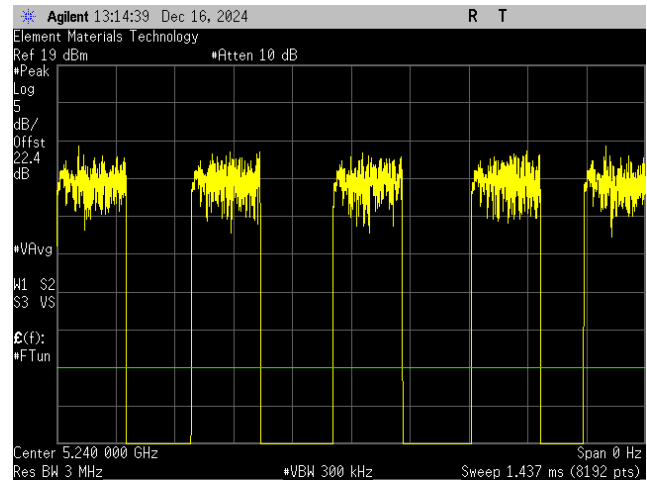
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS0

DUTY CYCLE

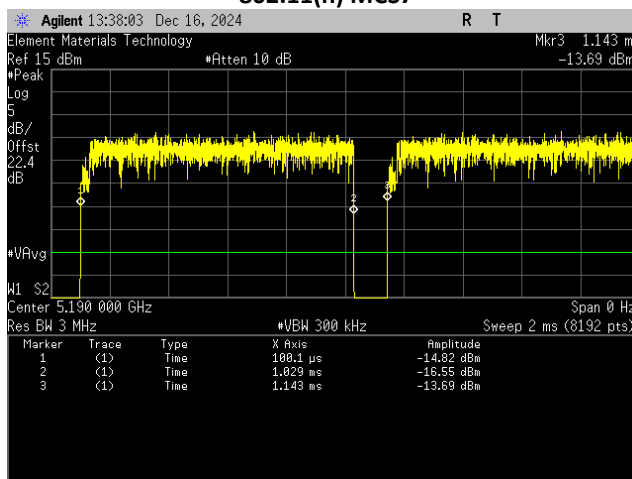
U-NII-1



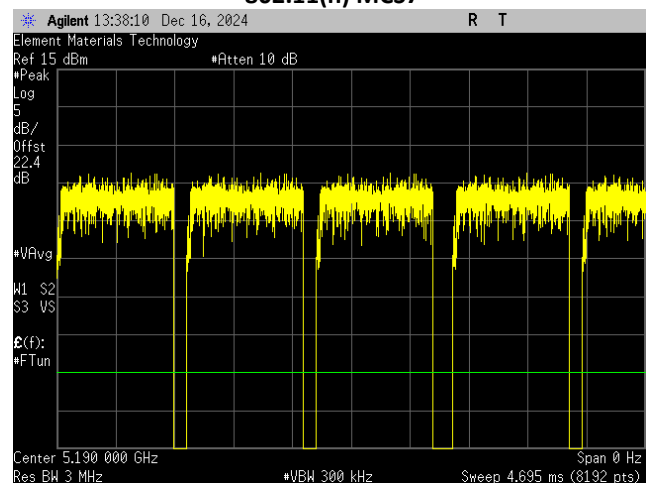
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS7



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS7



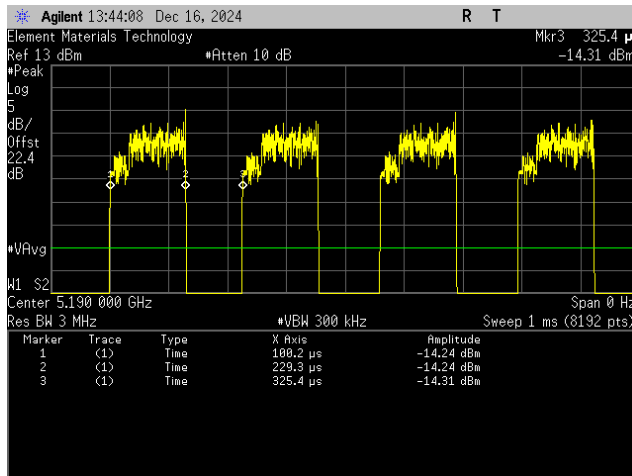
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS0



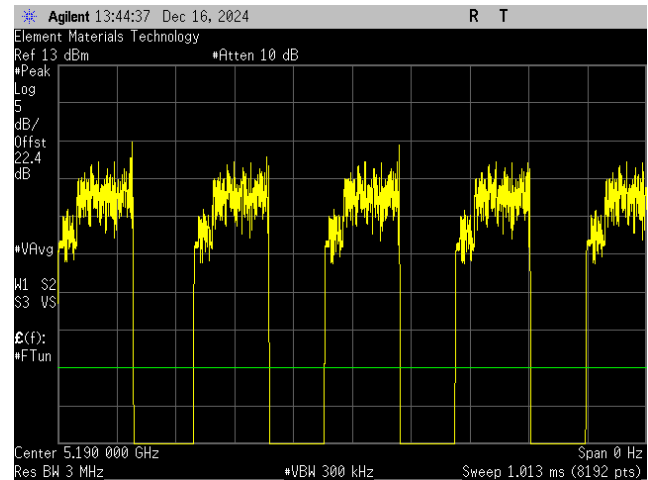
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS0

DUTY CYCLE

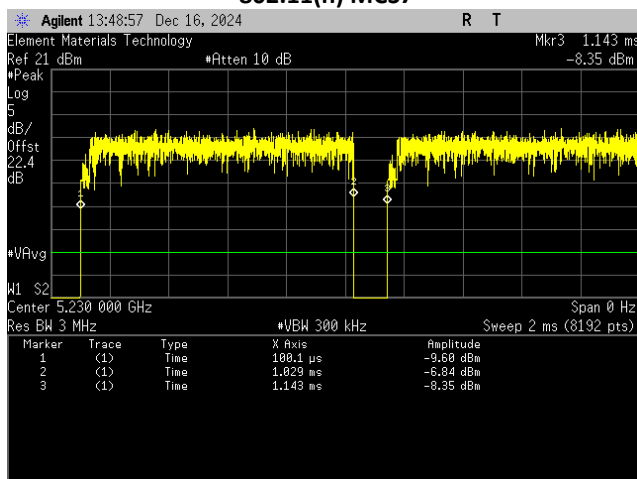
U-NII-1



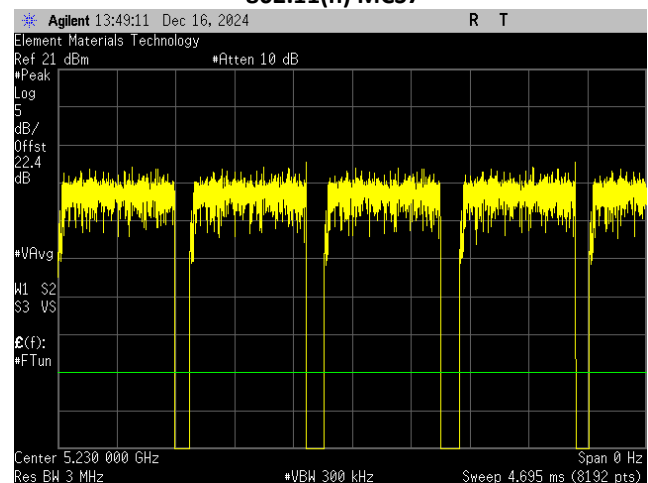
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS7



U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS7



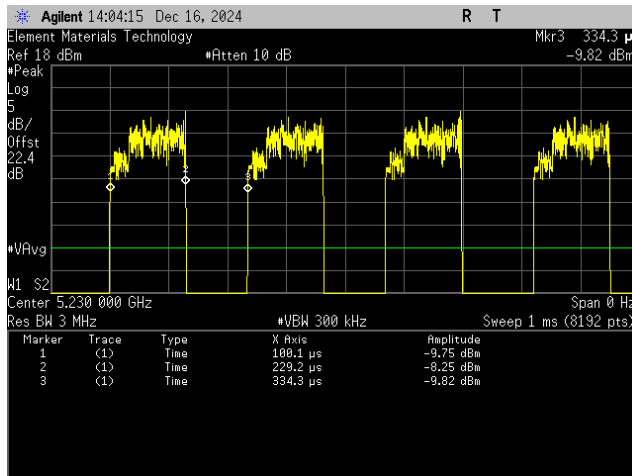
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS0



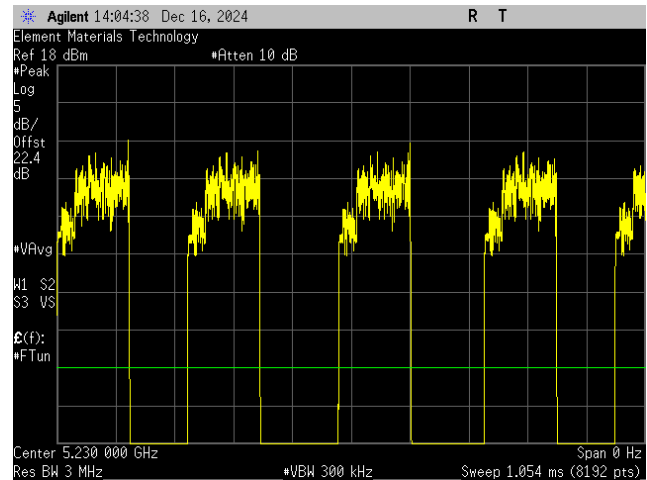
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS0

DUTY CYCLE

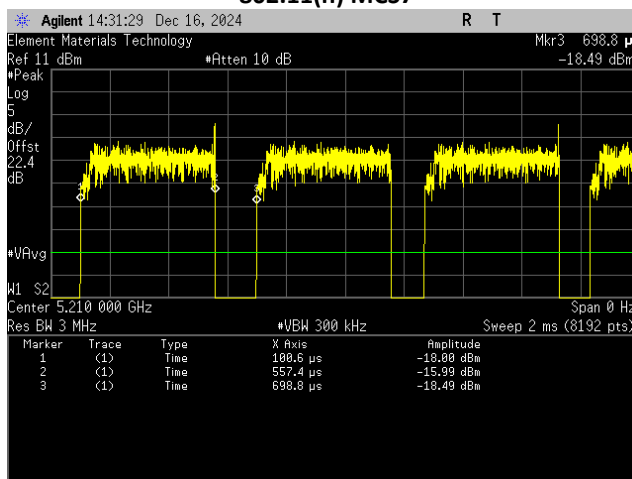
U-NII-1



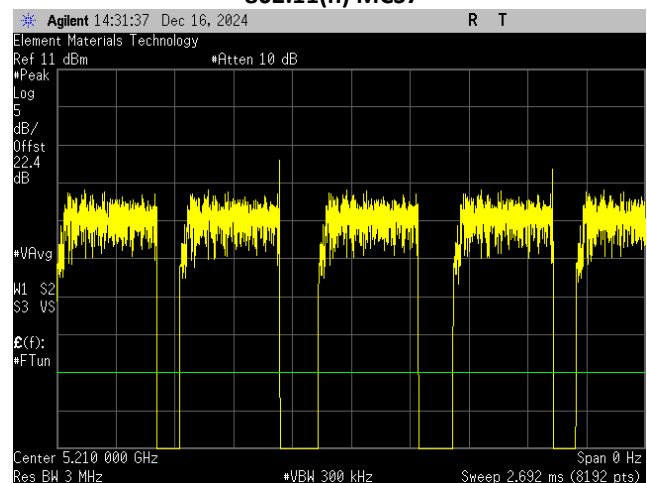
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS7



U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS7



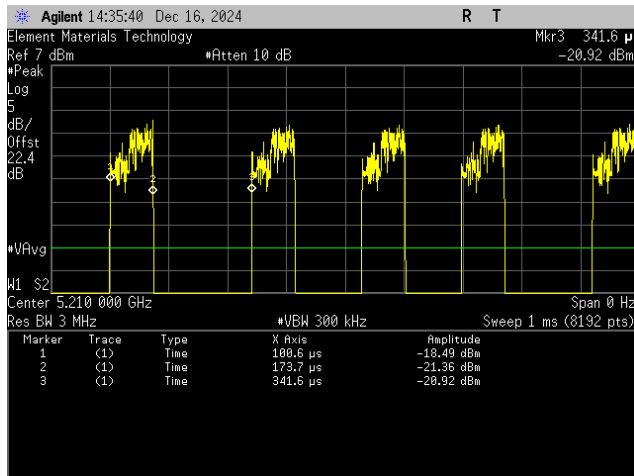
U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS0



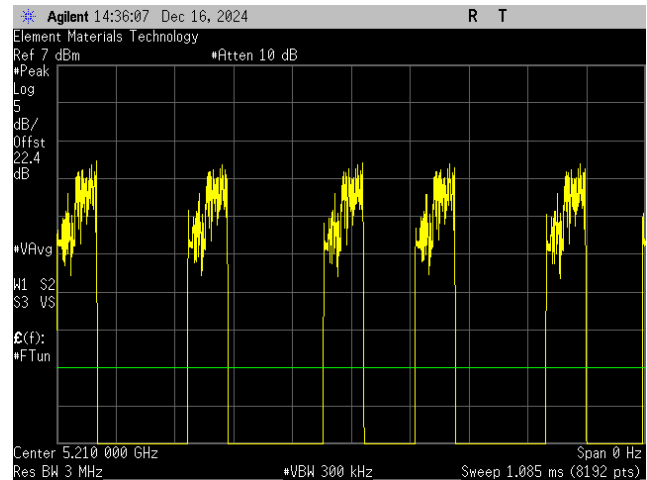
U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS0

DUTY CYCLE

U-NII-1



U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS9



U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS9

DUTY CYCLE

U-NII-3



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Per ANSI C63.10:2013, all measurements are to be performed with the EUT operating at 100% duty cycle at its maximum power level. In the event the EUT cannot be operated at 100% duty cycle, the transmission pulse duration (T) and Duty Cycle (x) are required to be measured for each of the EUT operating modes.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, a duty cycle correction factor in dB can be calculated to add to power measurements if required in the test method guidance using the following formula

$$10 * \text{LOG} (1/D) = \text{dB}$$

Where D is duty cycle of the radio transmissions

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

DUTY CYCLE

U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

Tested By

TEST RESULTS

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
U-NII-3 Band (20MHz BW)						
Ch 149 - 5745 MHz						
802.11(a) 6 Mbps	2.029 ms	2.198 ms	1	92.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	356.5 us	471.4 us	1	75.6	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	244.7 us	377.4 us	1	64.8	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.341 ms	1.501 ms	1	89.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	224.7 us	330.5 us	1	68	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
Ch 157 - 5785 MHz						
802.11(a) 6 Mbps	2.028 ms	2.18 ms	1	93.1	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	256.234 us	344.423 us	1	74.4	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	180.6 us	304.4 us	1	59.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.341 ms	1.435 ms	1	93.4	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	168.6 us	265.4 us	1	63.5	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A

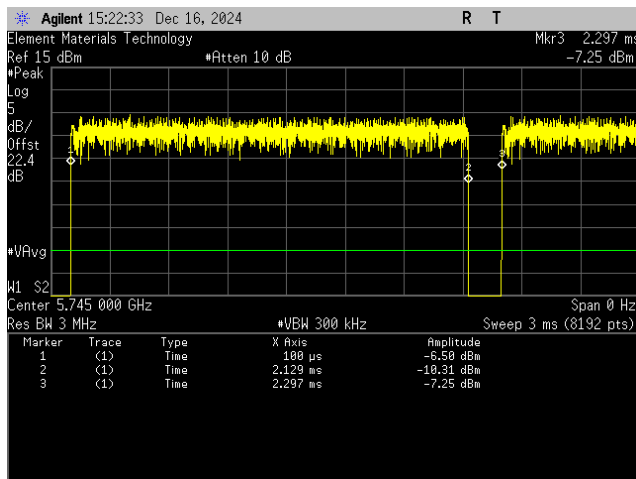
DUTY CYCLE

U-NII-3

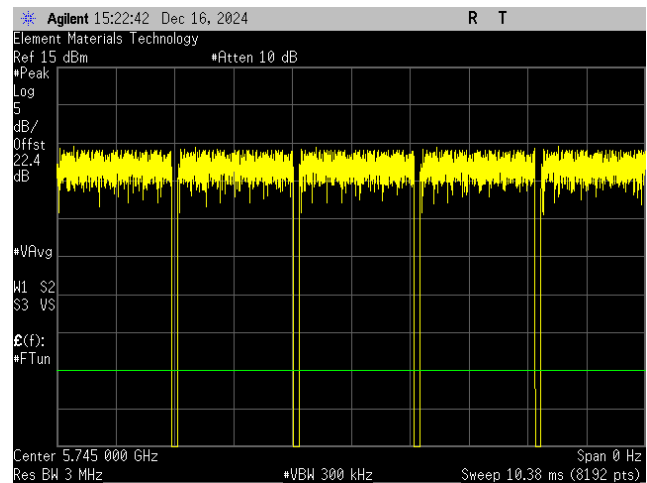
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
Ch 165 - 5825 MHz						
802.11(a) 6 Mbps	2.029 ms	2.189 ms	1	92.7	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps	356.7 us	462.3 us	1	77.2	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps	244.434 us	341.344 us	1	71.6	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0	1.34 ms	1.595 ms	1	84	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	168.362 us	287.725 us	1	58.5	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
U-NII-3 Band (40MHz BW)						
Ch 151 - 5755 MHz						
802.11(n) MCS0	664.8 us	770.1 us	1	86.3	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	100.711 us	188.173 us	1	53.5	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
Ch 159 - 5795 MHz						
802.11(n) MCS0	672.9 us	850.2 us	1	79.1	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7	104.9 us	192.2 us	1	54.6	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
U-NII-3 Band (80MHz BW)						
Ch 155 - 5775 MHz						
802.11(ac) MCS0	333.2 us	438.1 us	1	76.1	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
802.11(ac) MCS9	64.9 us	197 us	1	32.9	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

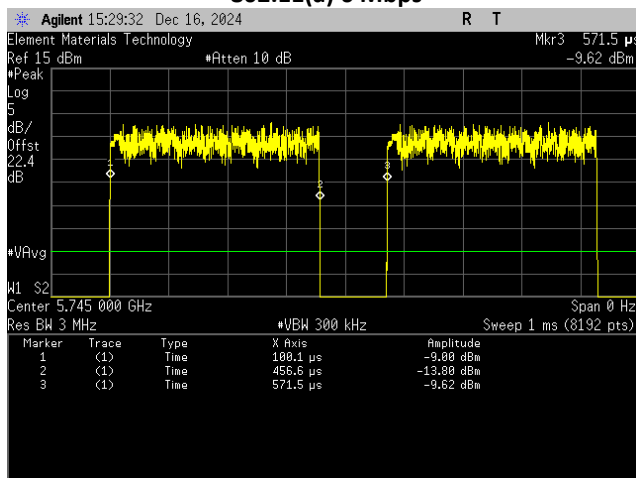
U-NII-3



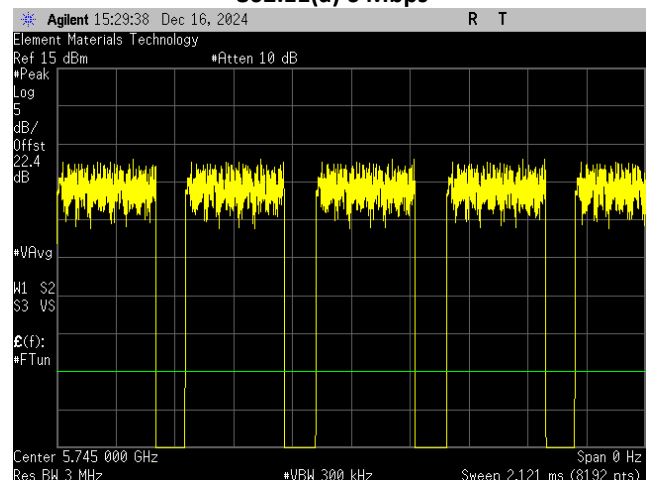
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 6 Mbps



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 6 Mbps



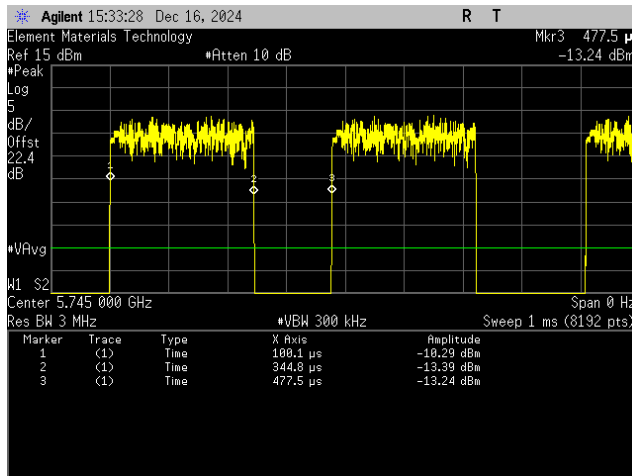
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 36 Mbps



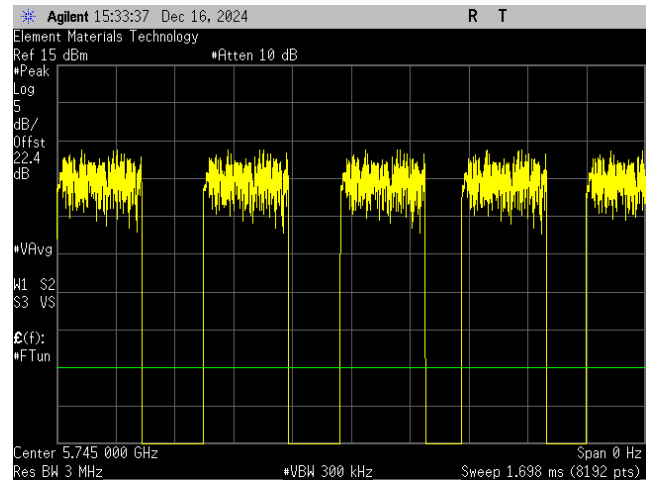
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 36 Mbps

DUTY CYCLE

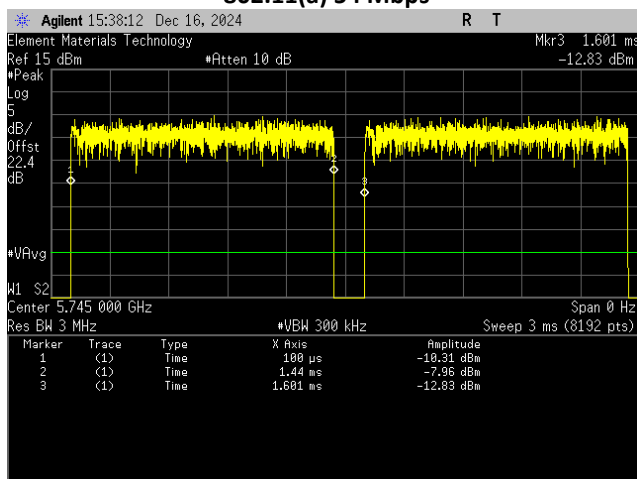
U-NII-3



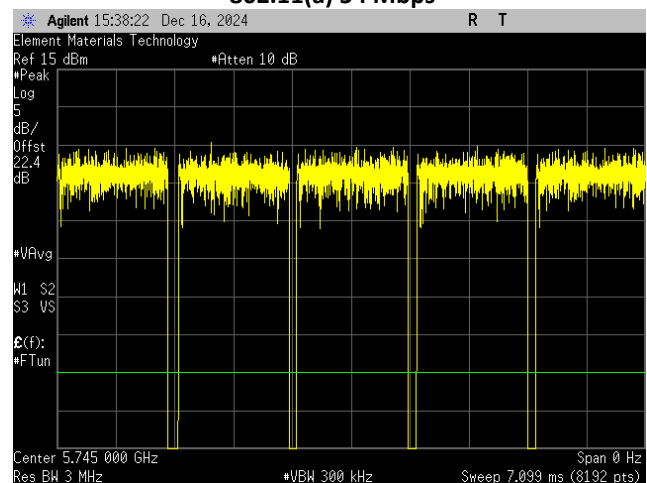
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 54 Mbps



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 54 Mbps



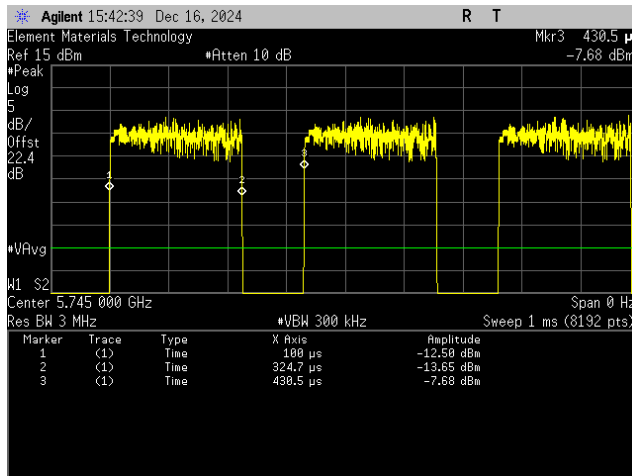
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS0



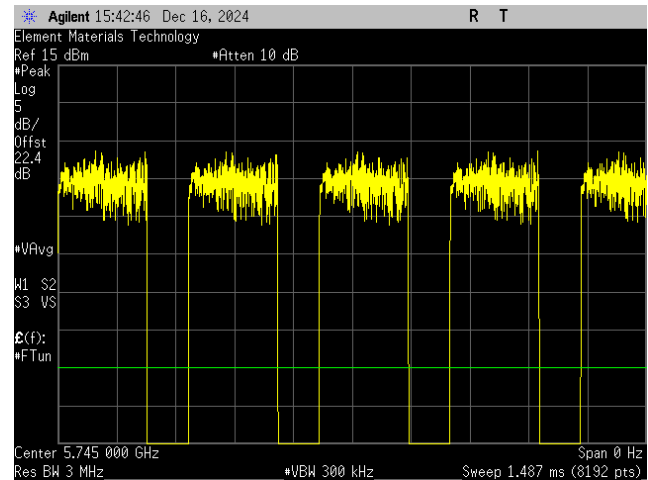
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS0

DUTY CYCLE

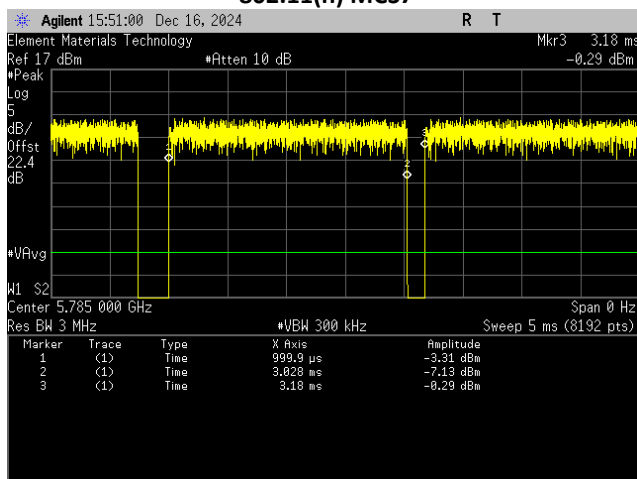
U-NII-3



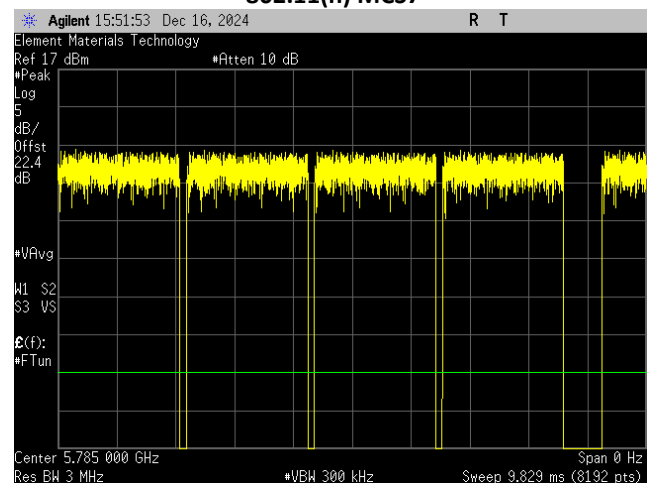
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS7



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS7



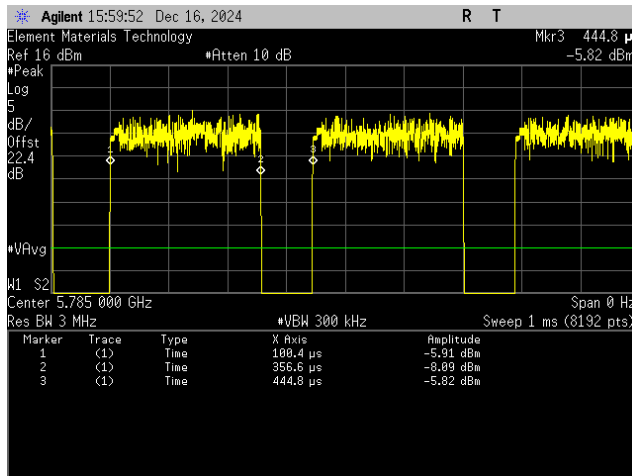
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 6 Mbps



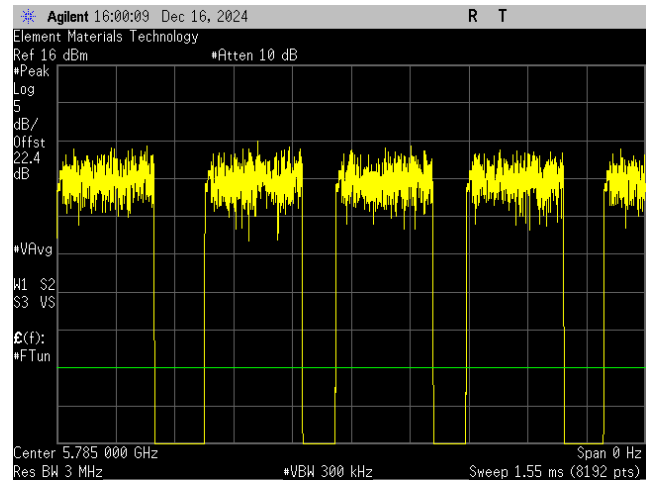
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 6 Mbps

DUTY CYCLE

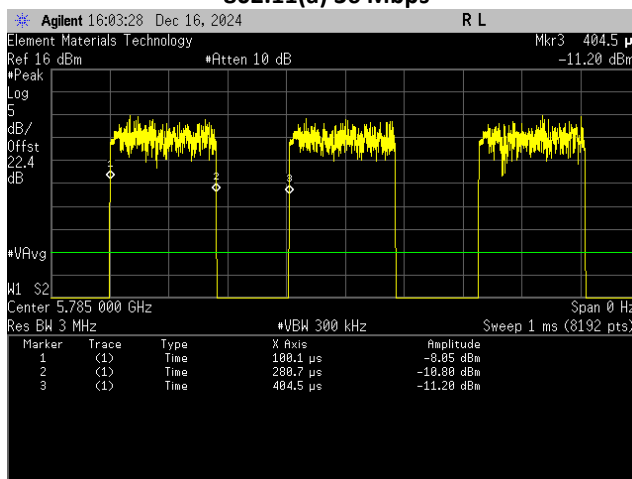
U-NII-3



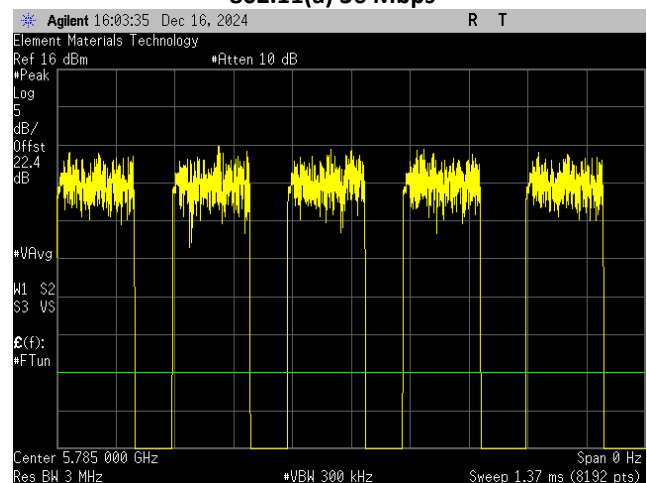
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 36 Mbps



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 36 Mbps



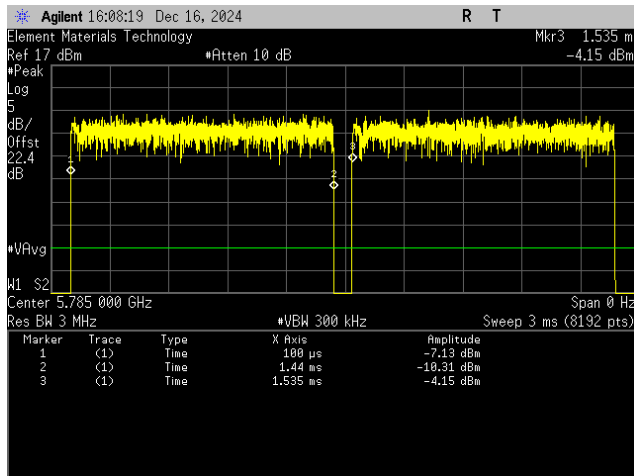
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 54 Mbps



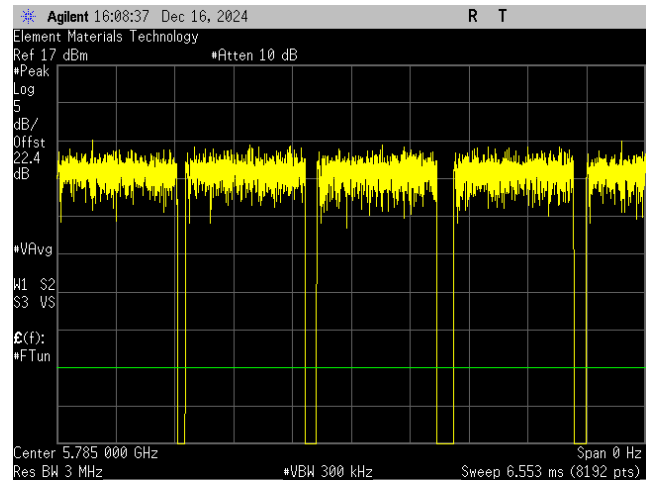
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 54 Mbps

DUTY CYCLE

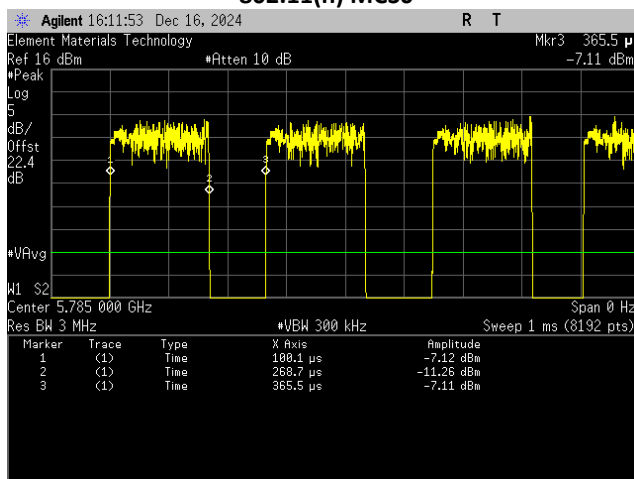
U-NII-3



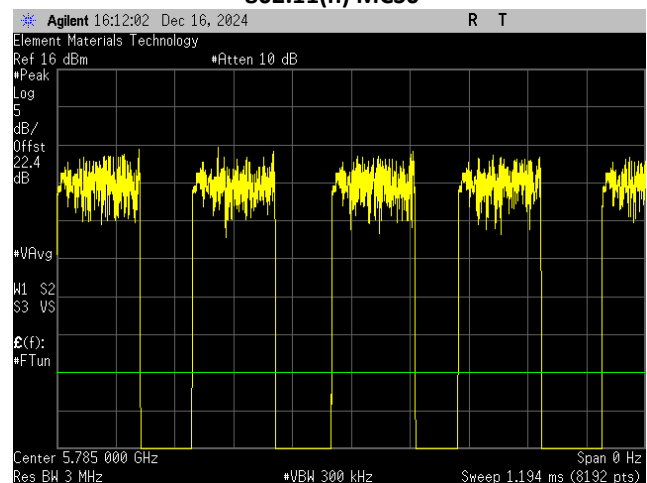
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS0



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS0



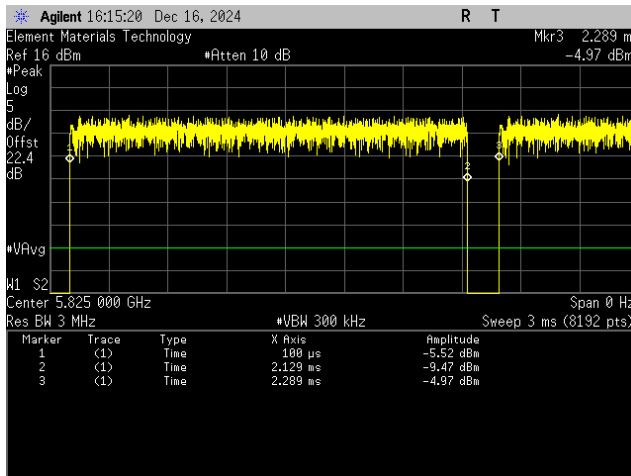
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS7



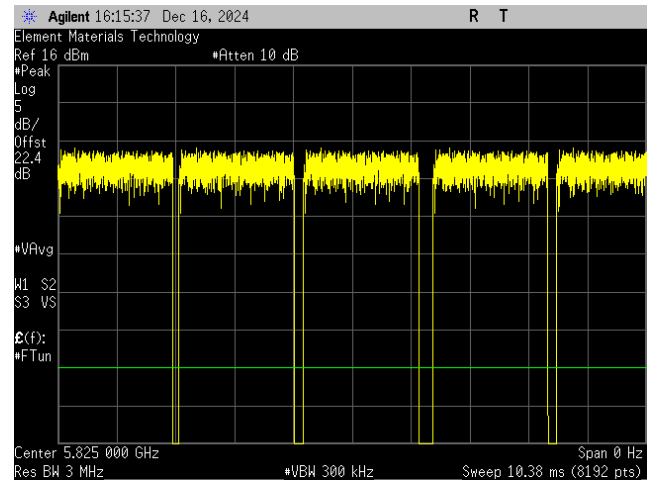
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS7

DUTY CYCLE

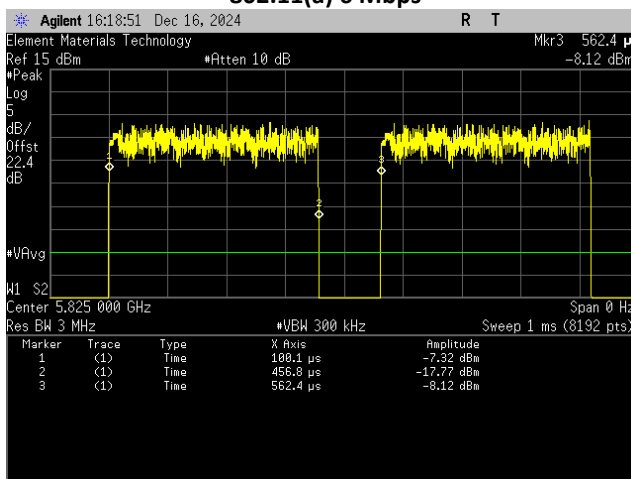
U-NII-3



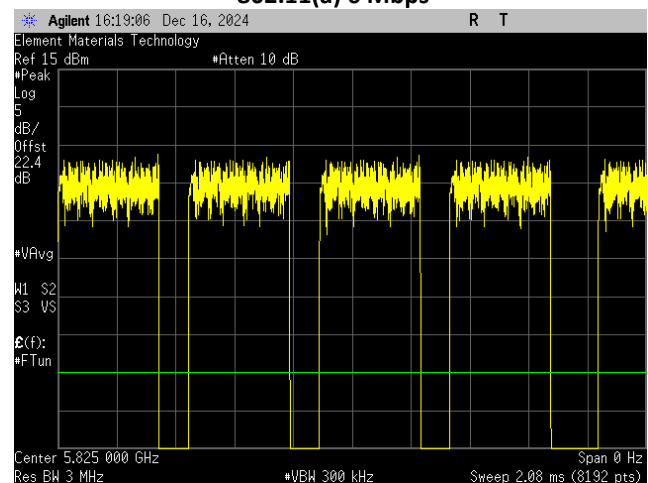
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 6 Mbps



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 6 Mbps



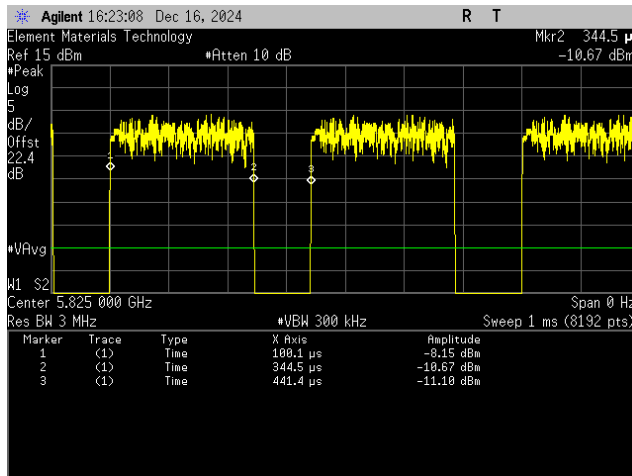
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 36 Mbps



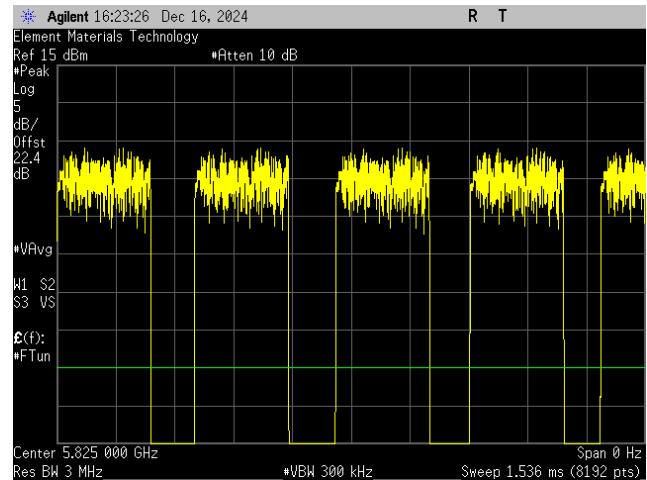
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 36 Mbps

DUTY CYCLE

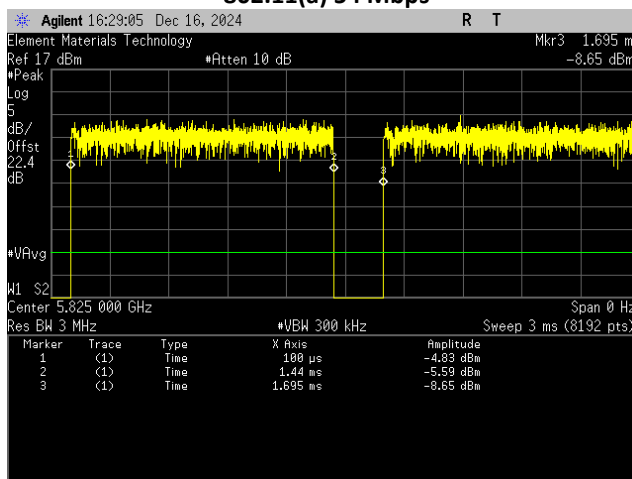
U-NII-3



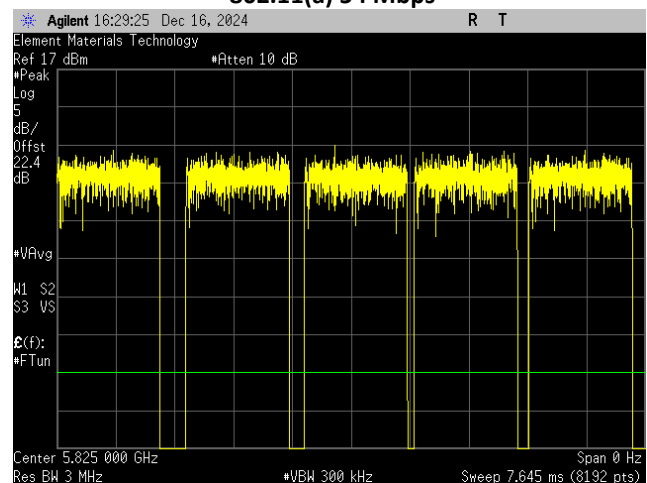
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 54 Mbps



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 54 Mbps



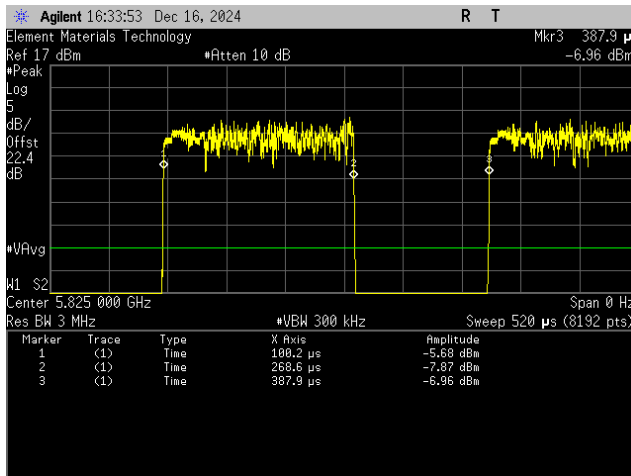
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS0



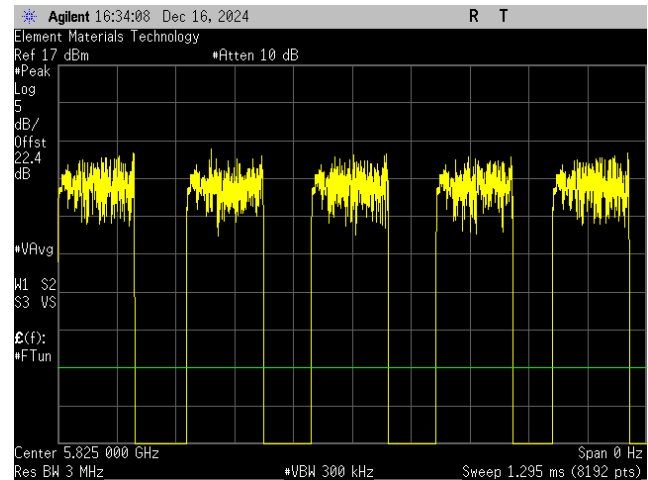
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS0

DUTY CYCLE

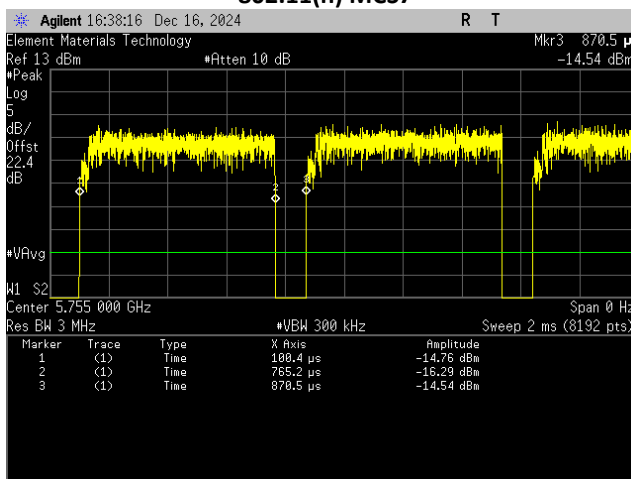
U-NII-3



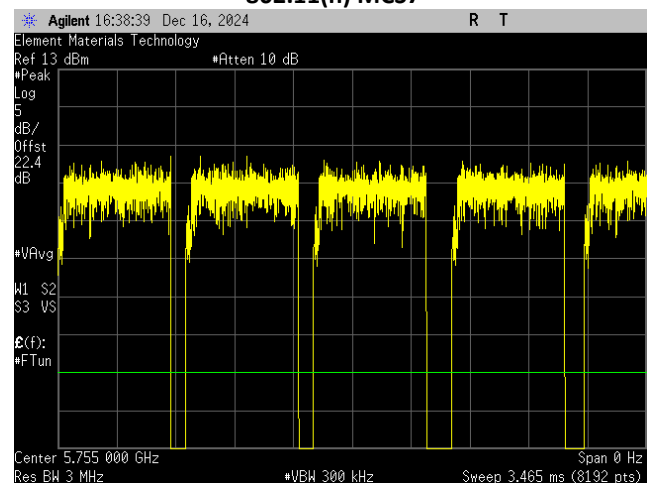
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS7



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS7



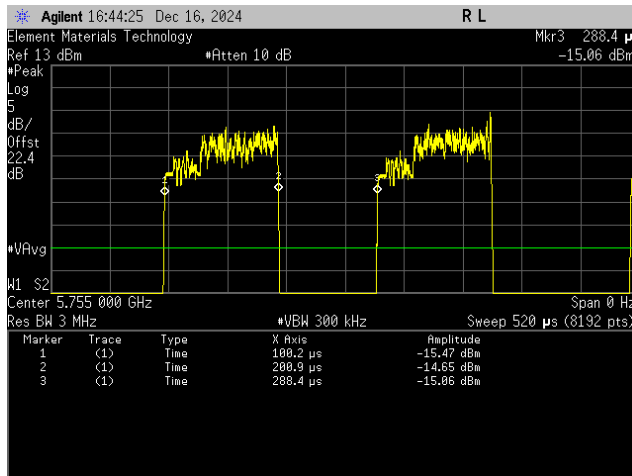
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS0



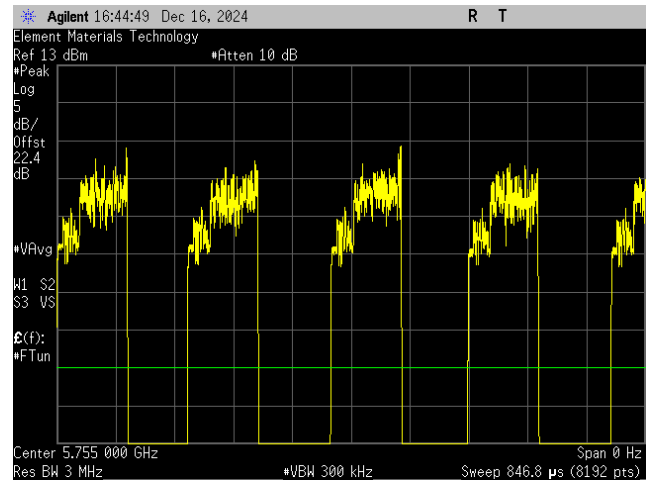
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS0

DUTY CYCLE

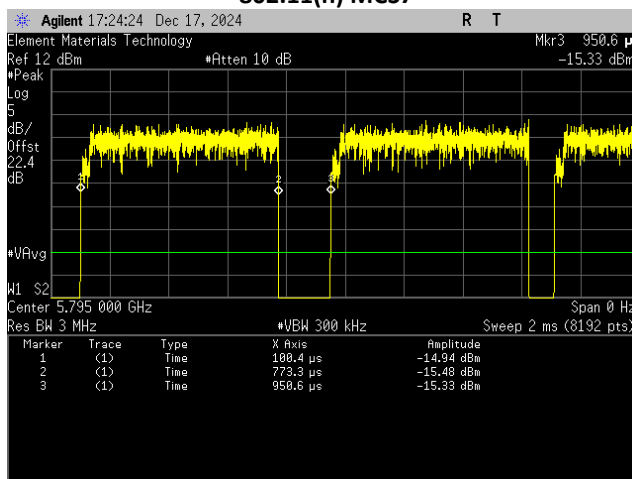
U-NII-3



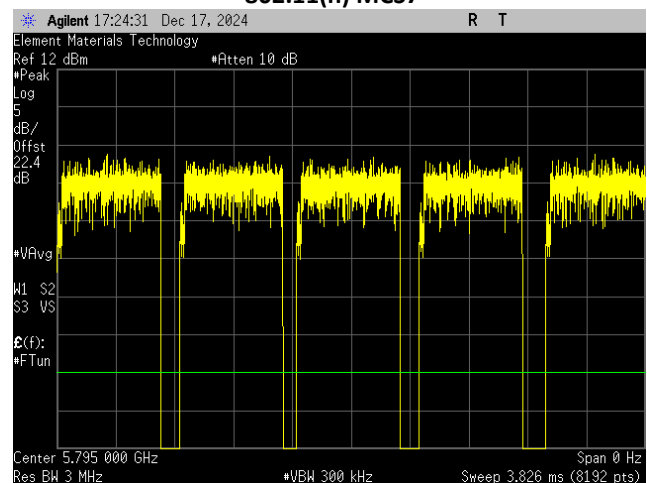
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS7



U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS7



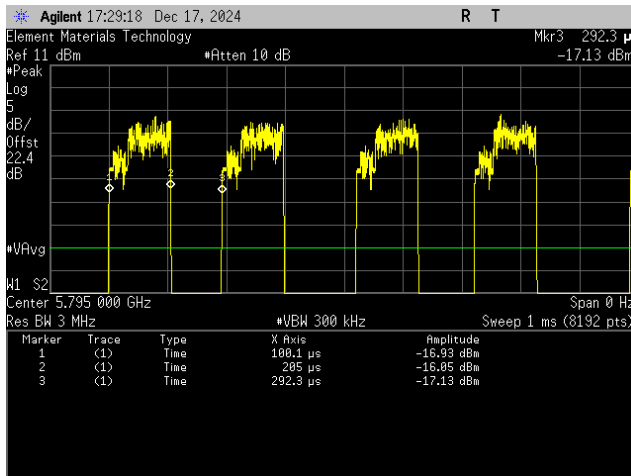
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS0



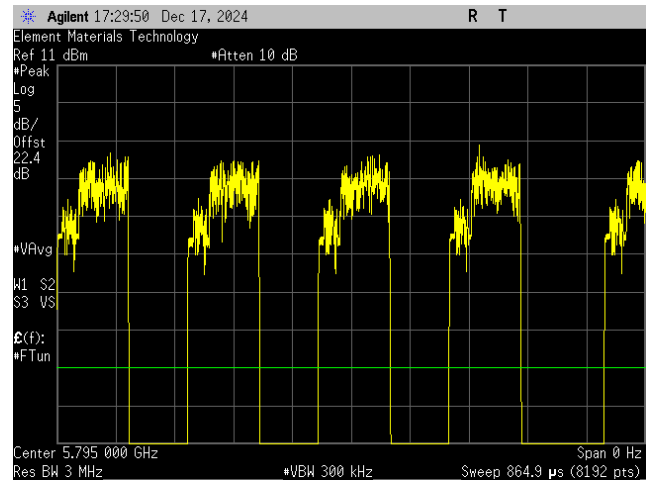
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS0

DUTY CYCLE

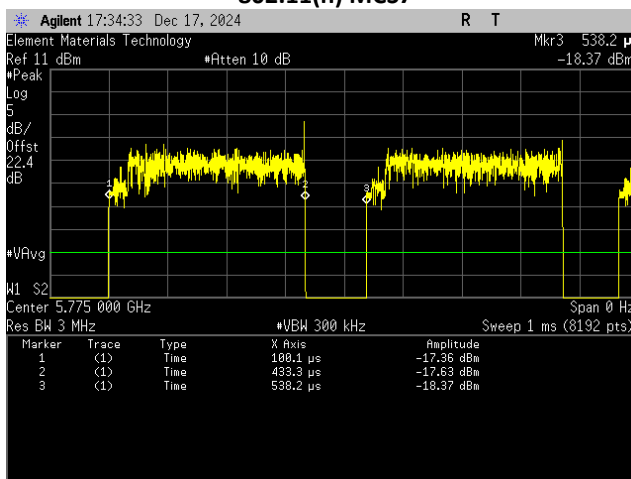
U-NII-3



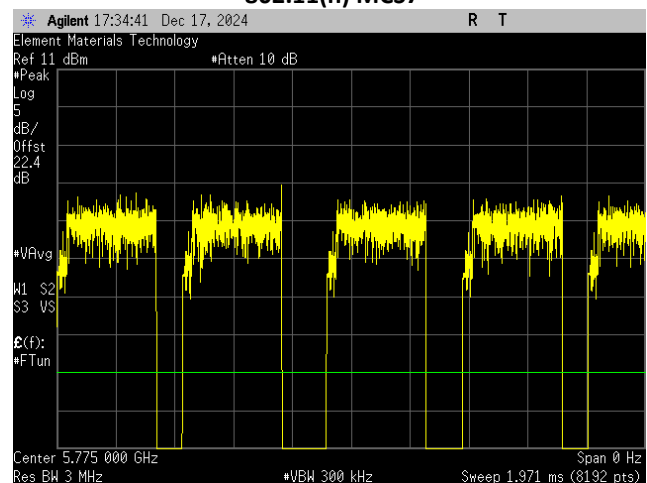
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS7



U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS7



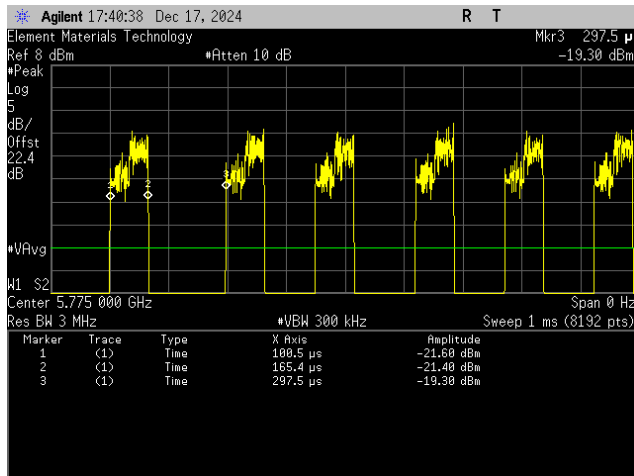
U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS0



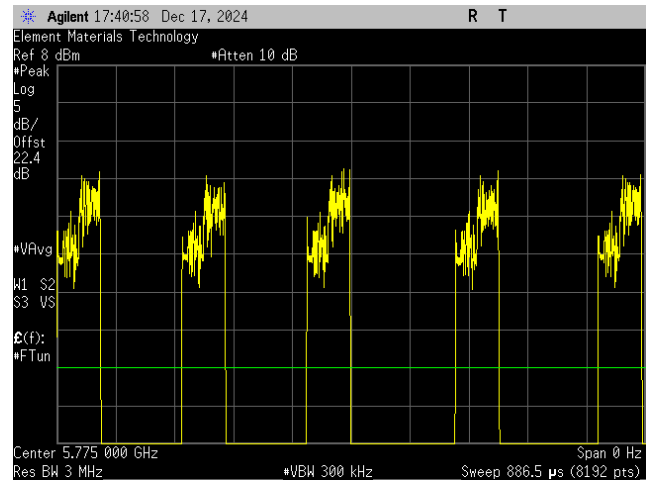
U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS0

DUTY CYCLE

U-NII-3



U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS9



U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS9

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-1



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the 99% occupied bandwidth (OBW) and the duty cycle (D) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report.

The maximum conducted output power was measured using ANSI C63.10:2013, Clause 12.3.2.4, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

- RMS Detector
- Trace average 100 traces in power averaging mode.
- Power was integrated across "OBW", by using the channel power function of the analyzer.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi).

The worst case (most stringent) limits are shown on the following datasheet based on the limits below where B is the bandwidth in terms of 99% for ISED and 26dB for the FCC.

- In the 5.15 – 5.25GHz band, the maximum e.i.r.p. shall not exceed the lesser of
 - o 250 mW (24.0 dBm) + 6 dBi = 30 dBm EIRP for the FCC
 - o 200 mW EIRP or $10 + 10 \log_{10} B$ dBm EIRP for ISED
- In the 5.25 – 5.35GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$ dBm EIRP.
- In the 5.47 – 5.725GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$, dBm EIRP.
- In the 5.725 – 5.850GHz band, the maximum permissible e.i.r.p. is 36 dBm EIRP.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-1



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

Tested By

MAXIMUM CONDUCTED OUTPUT POWER

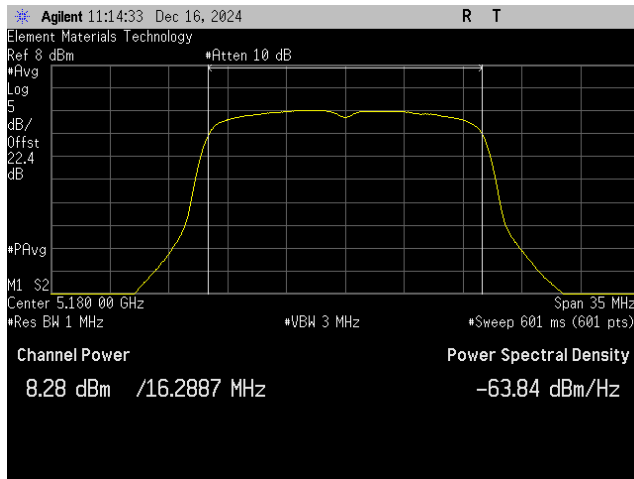
U-NII-1

TEST RESULTS

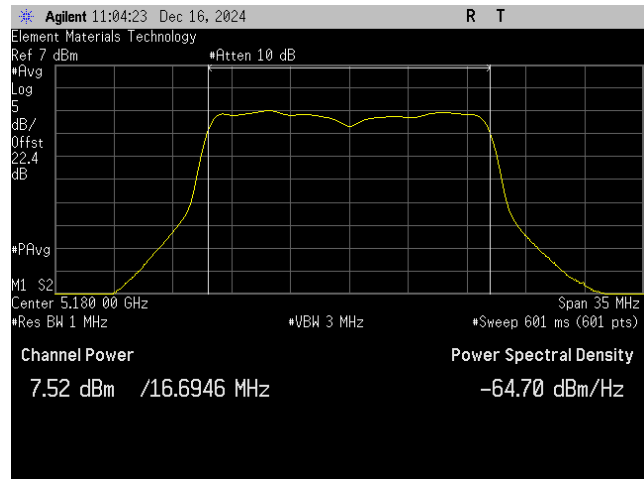
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
U-NII-1 Band (20MHz BW)						
Ch 36 - 5180 MHz						
	802.11(a) 6 Mbps	8.276	0.2	8.5	24	Pass
	802.11(a) 36 Mbps	7.522	1.3	8.8	24	Pass
	802.11(a) 54 Mbps	7.091	2	9.1	24	Pass
	802.11(n) MCS0	7.207	0.4	7.6	24	Pass
	802.11(n) MCS7	7.237	1.9	9.1	24	Pass
Ch 44 - 5220 MHz						
	802.11(a) 6 Mbps	10.542	0.3	10.8	24	Pass
	802.11(a) 36 Mbps	9.399	1.3	10.7	24	Pass
	802.11(a) 54 Mbps	9.038	1.7	10.7	24	Pass
	802.11(n) MCS0	10.479	0.4	10.9	24	Pass
	802.11(n) MCS7	8.932	1.8	10.7	24	Pass
Ch 48 - 5240 MHz						
	802.11(a) 6 Mbps	11.119	0.3	11.4	24	Pass
	802.11(a) 36 Mbps	10.689	1.5	12.2	24	Pass
	802.11(a) 54 Mbps	10.187	1.9	12.1	24	Pass
	802.11(n) MCS0	10.953	0.3	11.3	24	Pass
	802.11(n) MCS7	10.047	2.8	12.8	24	Pass
U-NII-1 Band (40MHz BW)						
Ch 38 - 5190 MHz						
	802.11(n) MCS0	8.275	0.5	8.8	24	Pass
	802.11(n) MCS7	6.43	2.4	8.8	24	Pass
Ch 46 - 5230 MHz						
	802.11(n) MCS0	14.801	0.5	15.3	24	Pass
	802.11(n) MCS7	12.419	2.6	15	24	Pass
U-NII-1 Band (80MHz BW)						
Ch 42 - 5210 MHz						
	802.11(ac) MCS0	4.681	1.2	5.9	24	Pass
	802.11(ac) MCS9	1.897	5.2	7.1	24	Pass

MAXIMUM CONDUCTED OUTPUT POWER

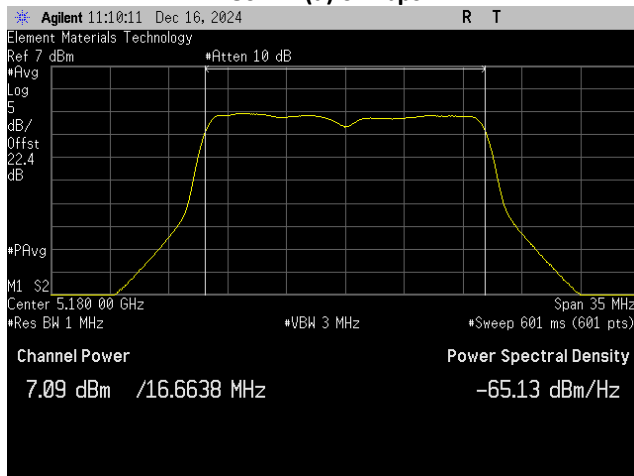
U-NII-1



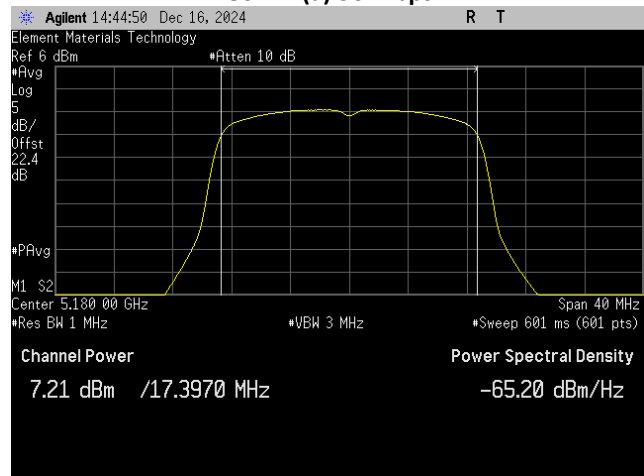
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 6 Mbps



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 36 Mbps



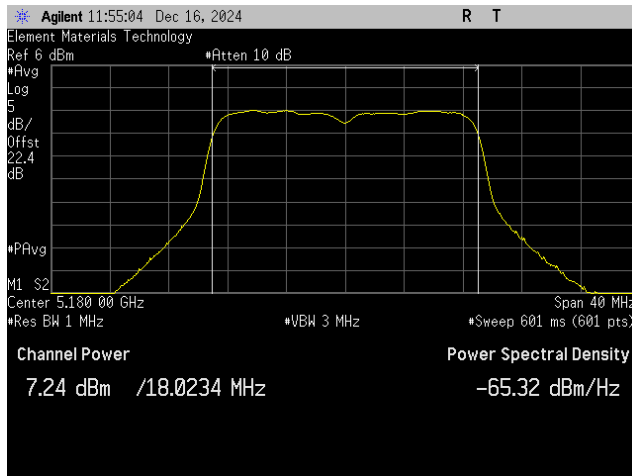
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 54 Mbps



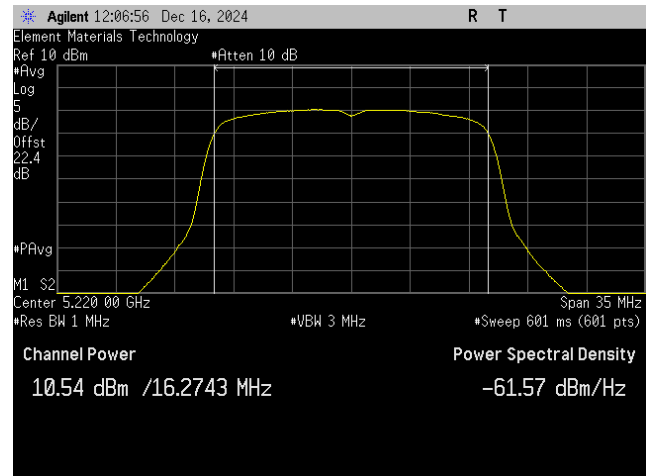
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

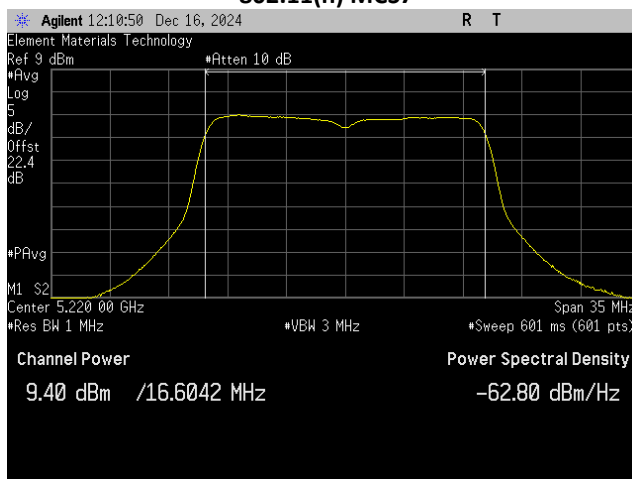
U-NII-1



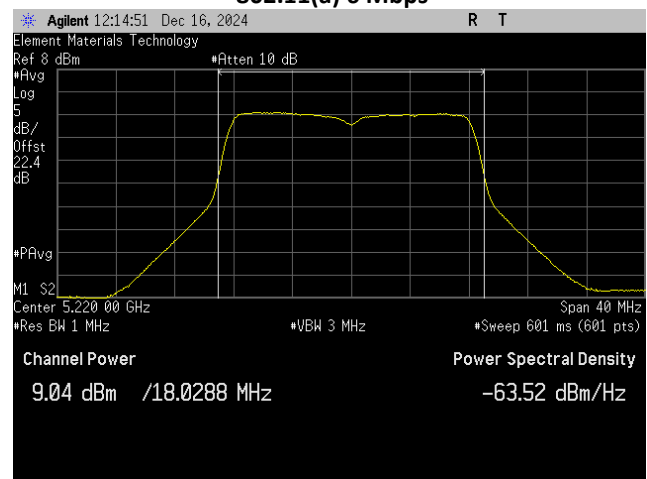
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS7



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 6 Mbps



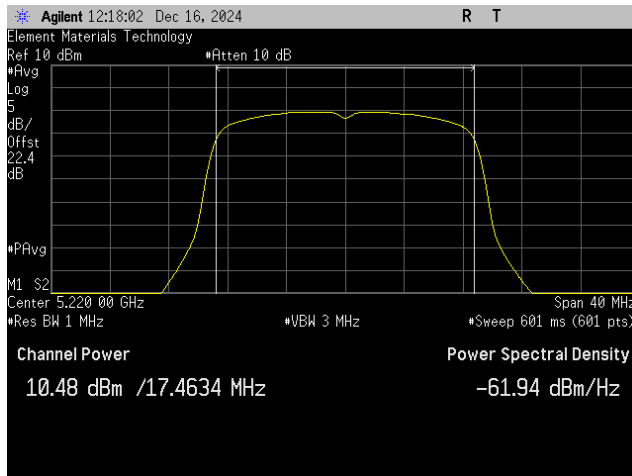
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 36 Mbps



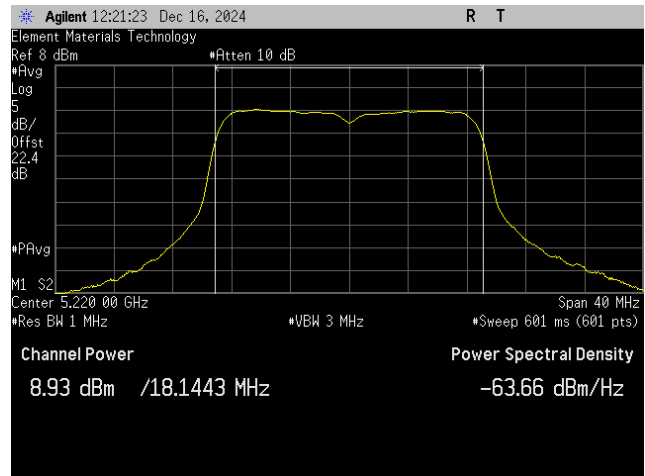
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 54 Mbps

MAXIMUM CONDUCTED OUTPUT POWER

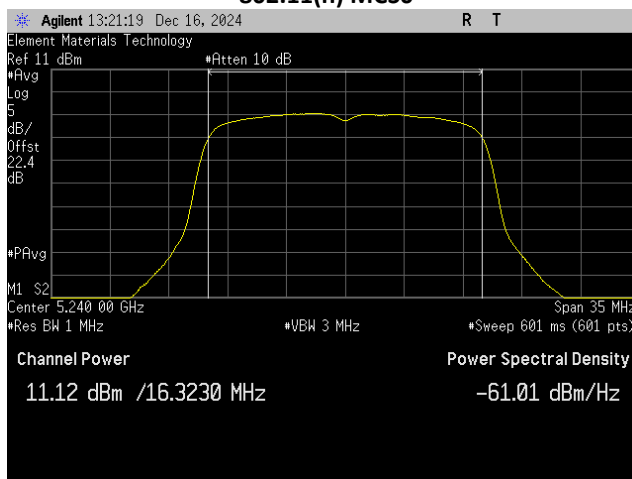
U-NII-1



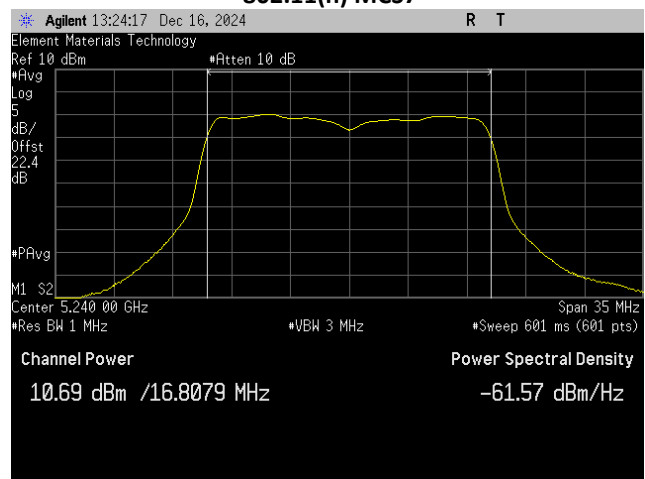
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS0



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS7



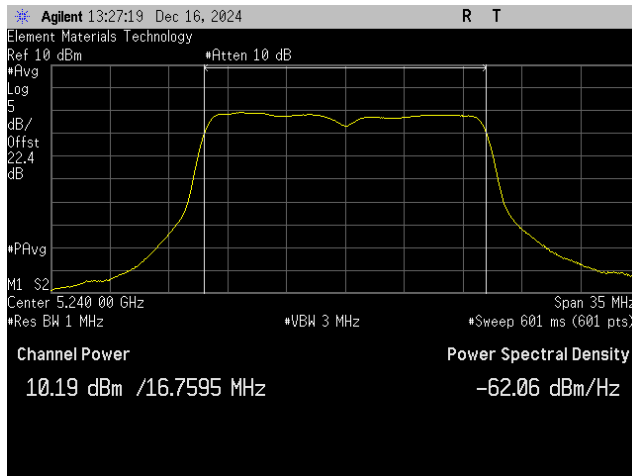
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 6 Mbps



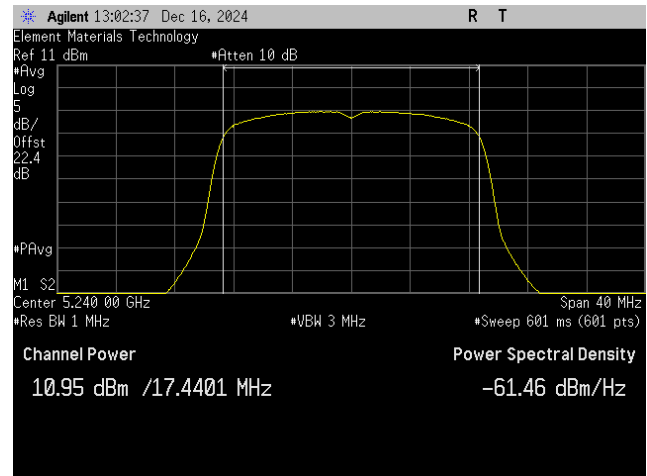
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 36 Mbps

MAXIMUM CONDUCTED OUTPUT POWER

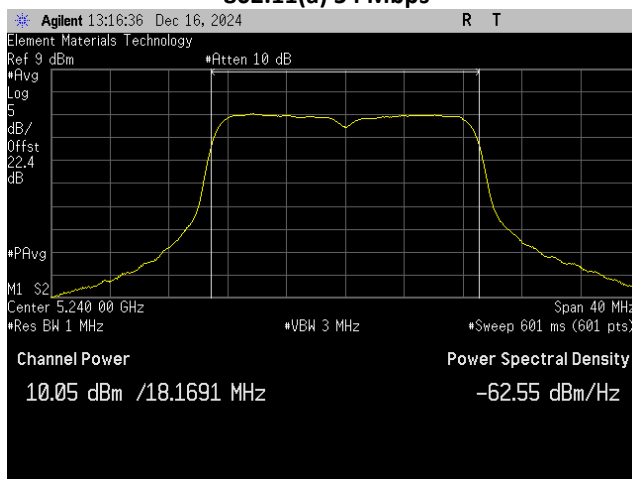
U-NII-1



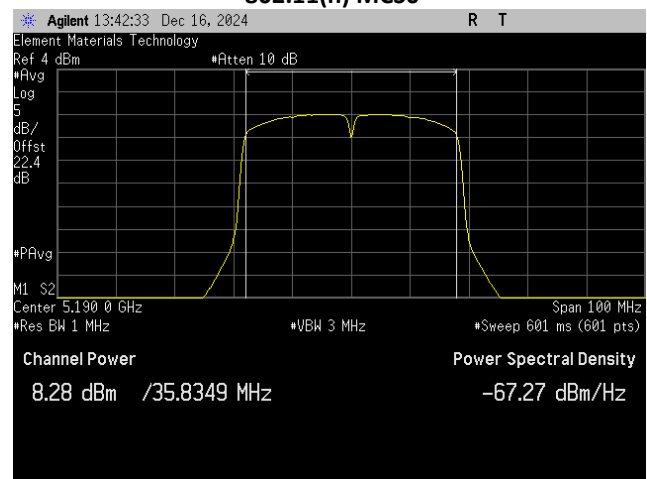
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 54 Mbps



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS0



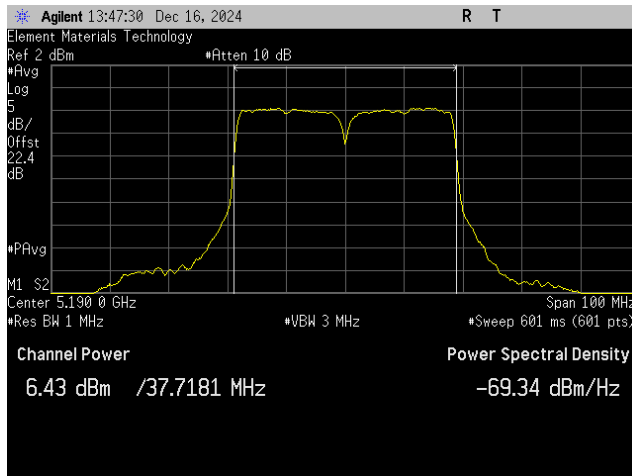
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS7



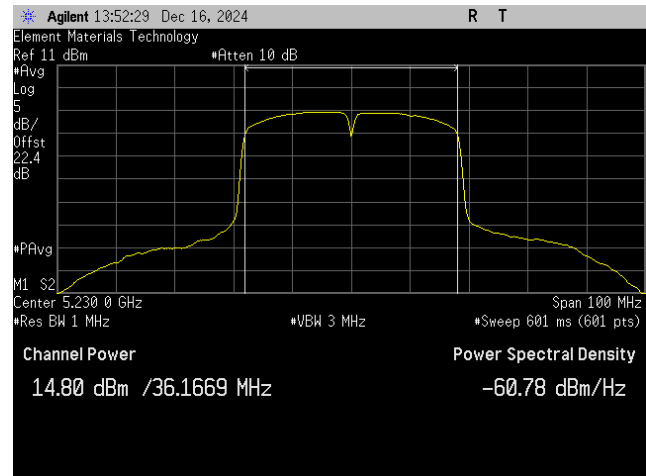
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

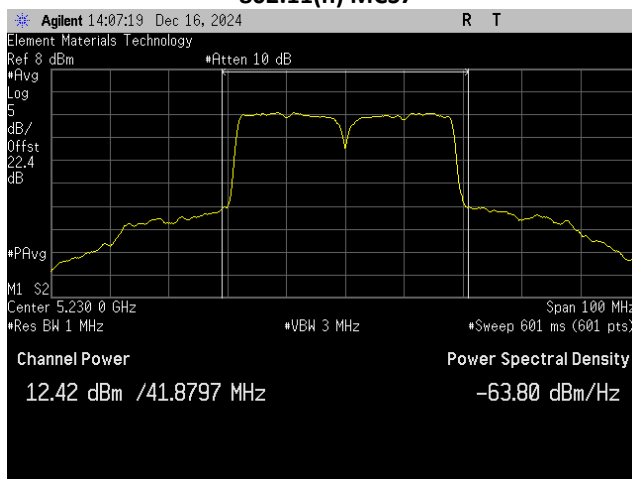
U-NII-1



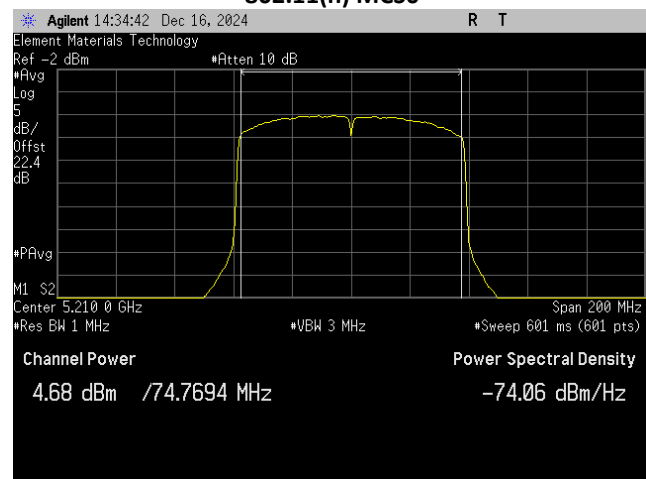
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS7



U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS0



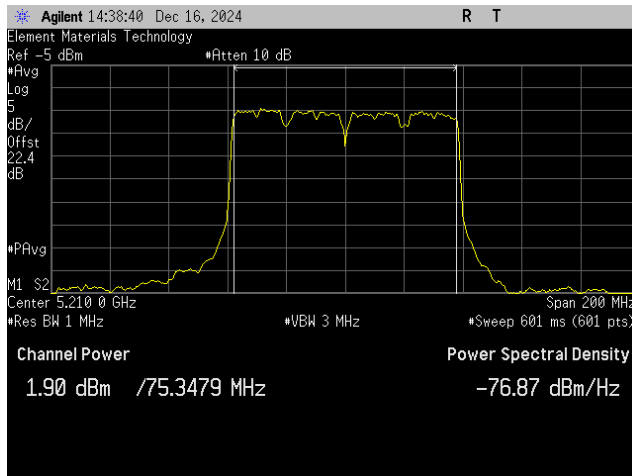
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS7



U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-1



U-NII-1 Band (80MHz BW)

Ch 42 - 5210 MHz

802.11(ac) MCS9

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-3



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the 99% occupied bandwidth (OBW) and the duty cycle (D) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report.

The maximum conducted output power was measured using ANSI C63.10:2013, Clause 12.3.2.4, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

- RMS Detector
- Trace average 100 traces in power averaging mode.
- Power was integrated across "OBW", by using the channel power function of the analyzer.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi).

The worst case (most stringent) limits are shown on the following datasheet based on the limits below where B is the bandwidth in terms of 99% for ISED and 26dB for the FCC.

- In the 5.15 – 5.25GHz band, the maximum e.i.r.p. shall not exceed the lesser of
 - o 250 mW (24.0 dBm) + 6 dBi = 30 dBm EIRP for the FCC
 - o 200 mW EIRP or $10 + 10 \log_{10} B$ dBm EIRP for ISED
- In the 5.25 – 5.35GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$ dBm EIRP.
- In the 5.47 – 5.725GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$, dBm EIRP.
- In the 5.725 – 5.850GHz band, the maximum permissible e.i.r.p. is 36 dBm EIRP.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

Tested By

MAXIMUM CONDUCTED OUTPUT POWER

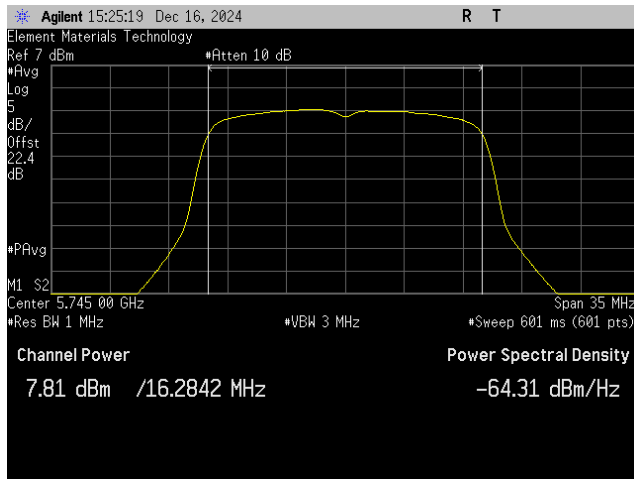
U-NII-3

TEST RESULTS

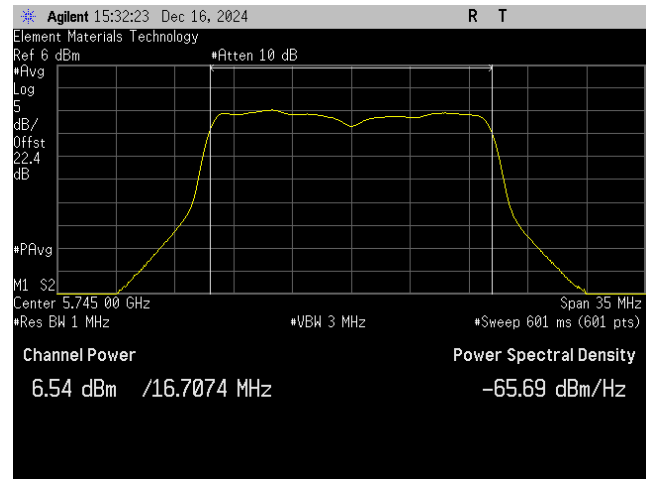
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Limit (dBm)	Result
U-NII-3 Band (20MHz BW)					
Ch 149 - 5745 MHz					
802.11(a) 6 Mbps	7.807	0.3	8.1	30	Pass
802.11(a) 36 Mbps	6.535	1.2	7.7	30	Pass
802.11(a) 54 Mbps	6.241	1.9	8.1	30	Pass
802.11(n) MCS0	7.499	0.5	8	30	Pass
802.11(n) MCS7	5.811	1.7	7.5	30	Pass
Ch 157 - 5785 MHz					
802.11(a) 6 Mbps	7.35	0.3	7.7	30	Pass
802.11(a) 36 Mbps	7.776	1.3	9.1	30	Pass
802.11(a) 54 Mbps	7.242	2.3	9.5	30	Pass
802.11(n) MCS0	8.096	0.3	8.4	30	Pass
802.11(n) MCS7	7.401	2	9.4	30	Pass
Ch 165 - 5825 MHz					
802.11(a) 6 Mbps	6.871	0.3	7.2	30	Pass
802.11(a) 36 Mbps	6.31	1.1	7.4	30	Pass
802.11(a) 54 Mbps	6.592	1.5	8.1	30	Pass
802.11(n) MCS0	8.698	0.8	9.5	30	Pass
802.11(n) MCS7	6.525	2.3	8.8	30	Pass
U-NII-3 Band (40MHz BW)					
Ch 151 - 5755 MHz					
802.11(n) MCS0	7.682	0.6	8.3	30	Pass
802.11(n) MCS7	5.481	2.7	8.2	30	Pass
Ch 159 - 5795 MHz					
802.11(n) MCS0	7.112	1	8.1	30	Pass
802.11(n) MCS7	4.998	2.6	7.6	30	Pass
U-NII-3 Band (80MHz BW)					
Ch 155 - 5775 MHz					
802.11(ac) MCS0	3.903	1.2	5.1	30	Pass
802.11(ac) MCS9	1.01	4.8	5.8	30	Pass

MAXIMUM CONDUCTED OUTPUT POWER

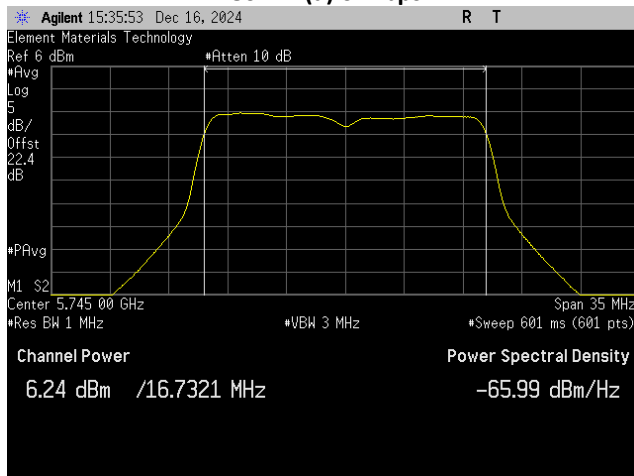
U-NII-3



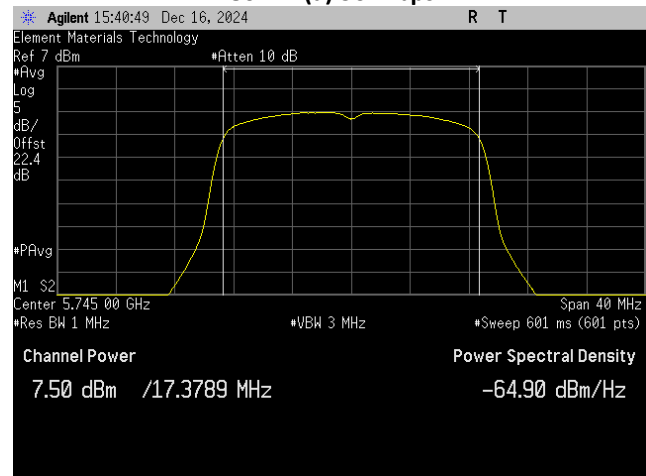
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 6 Mbps



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 36 Mbps



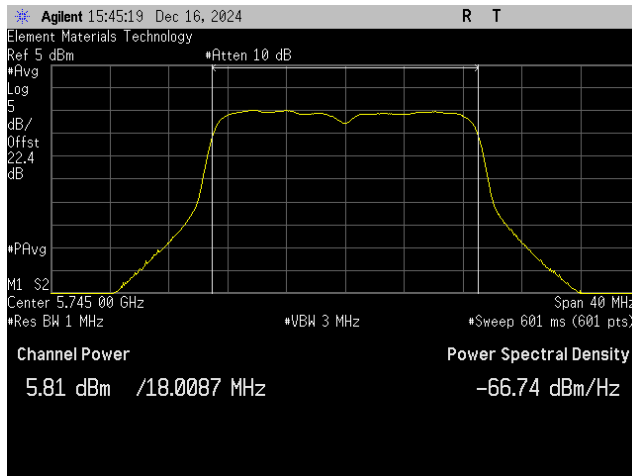
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 54 Mbps



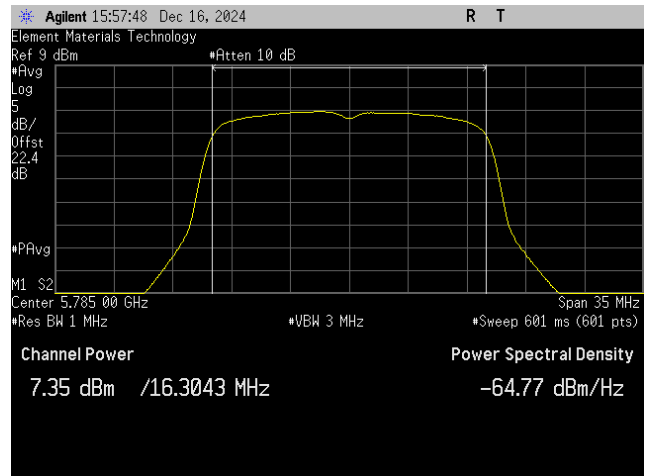
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

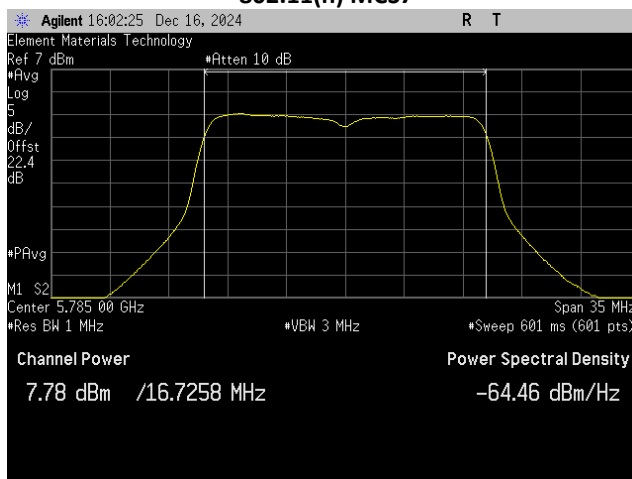
U-NII-3



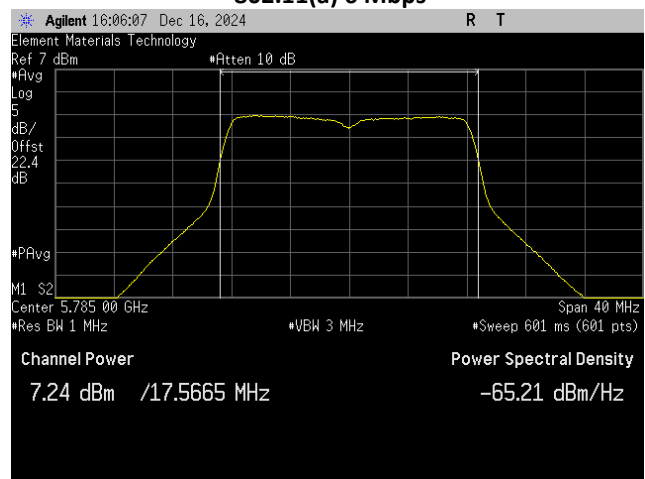
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS7



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 6 Mbps



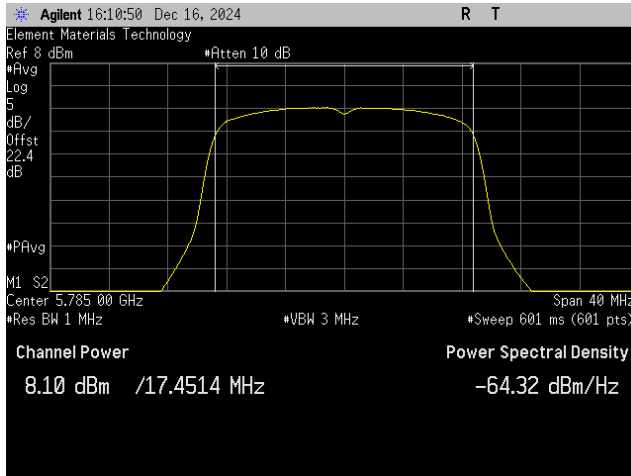
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 36 Mbps



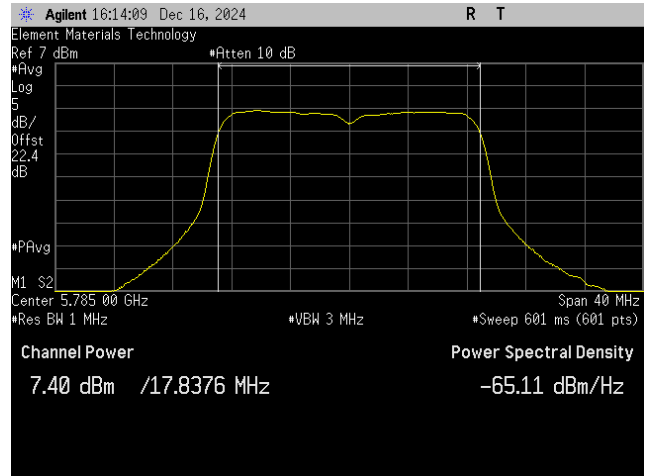
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 54 Mbps

MAXIMUM CONDUCTED OUTPUT POWER

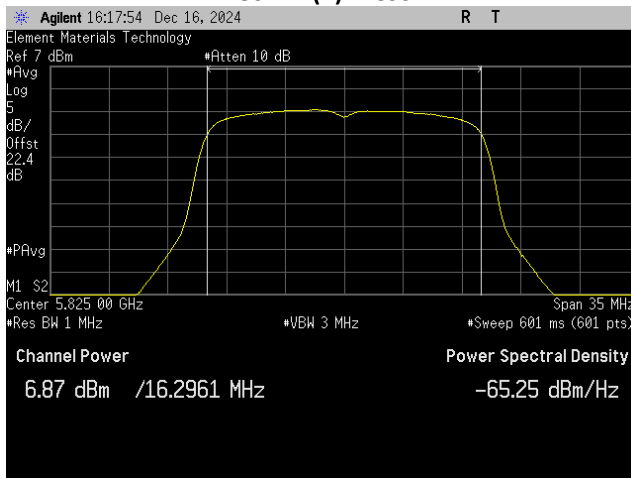
U-NII-3



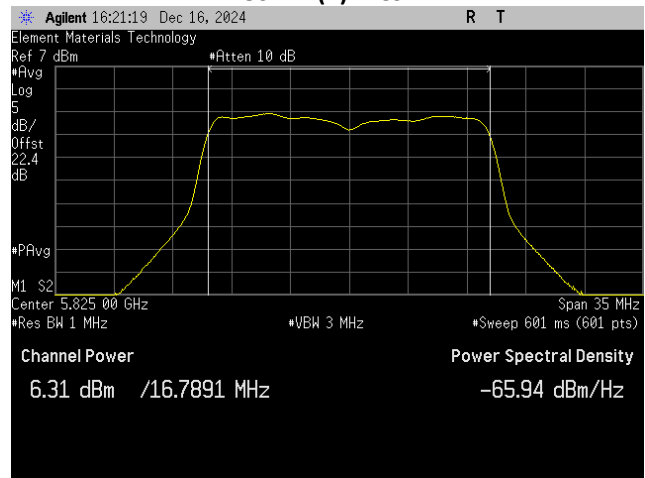
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS0



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS7



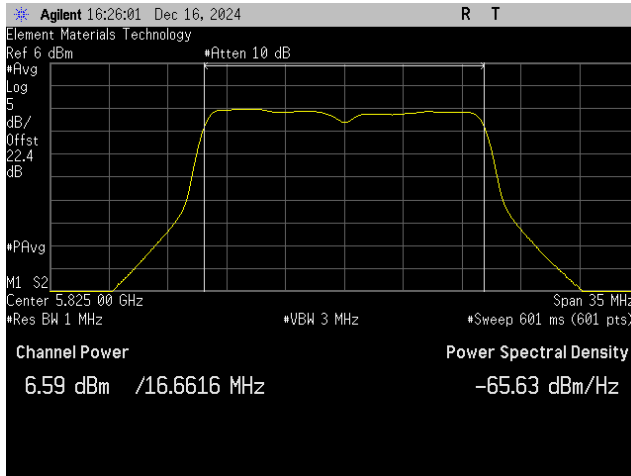
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 6 Mbps



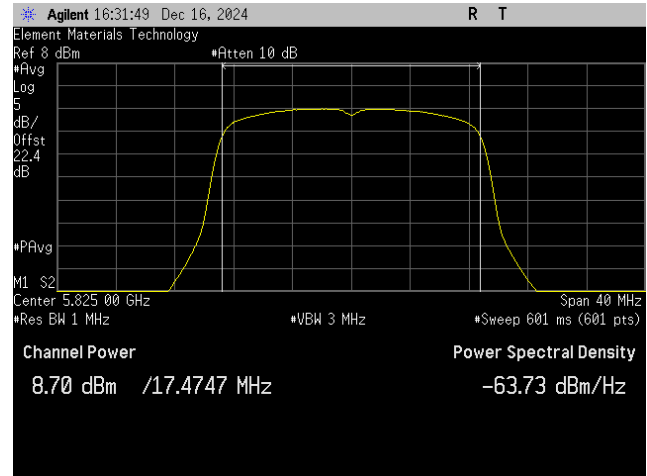
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 36 Mbps

MAXIMUM CONDUCTED OUTPUT POWER

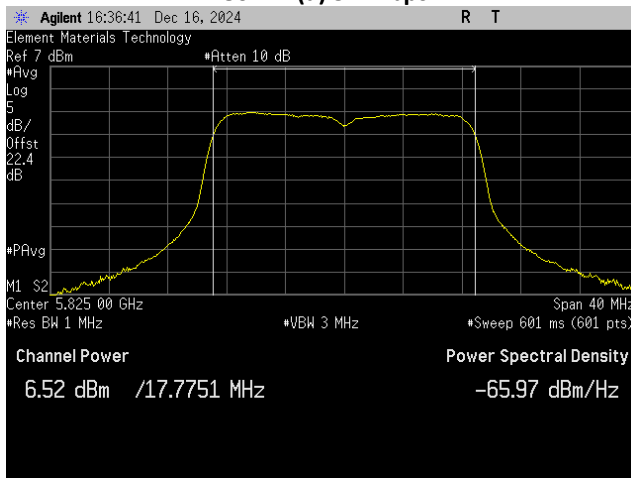
U-NII-3



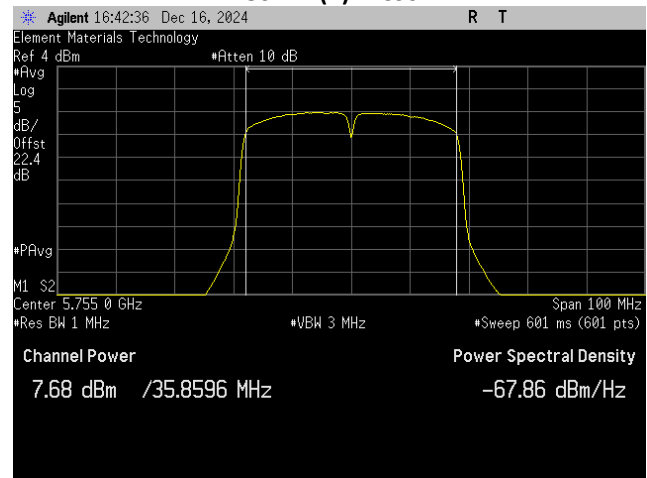
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 54 Mbps



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS0



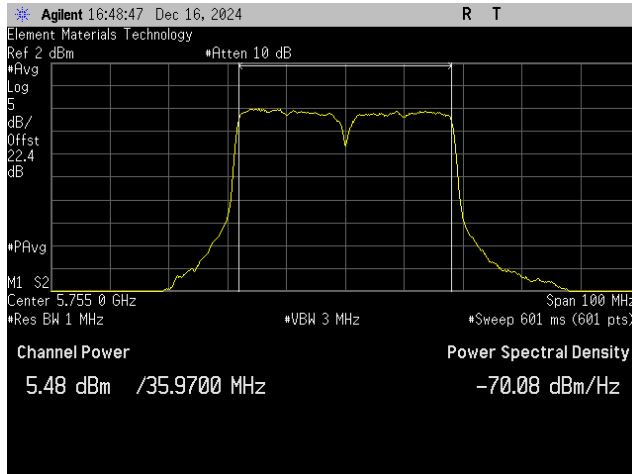
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS7



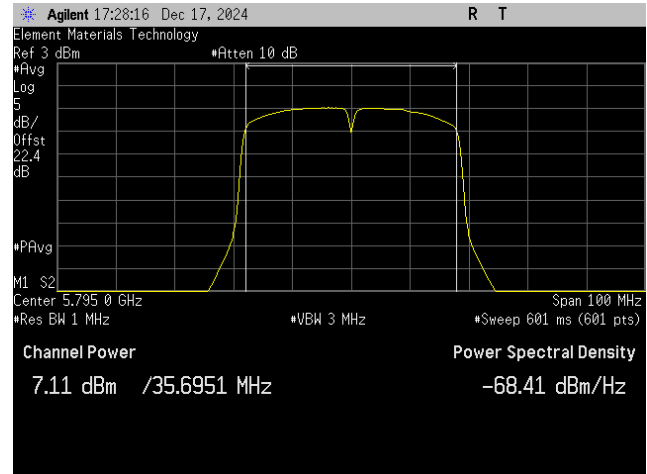
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

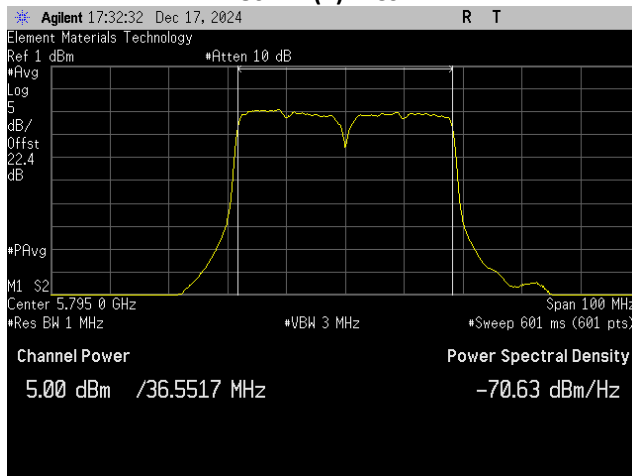
U-NII-3



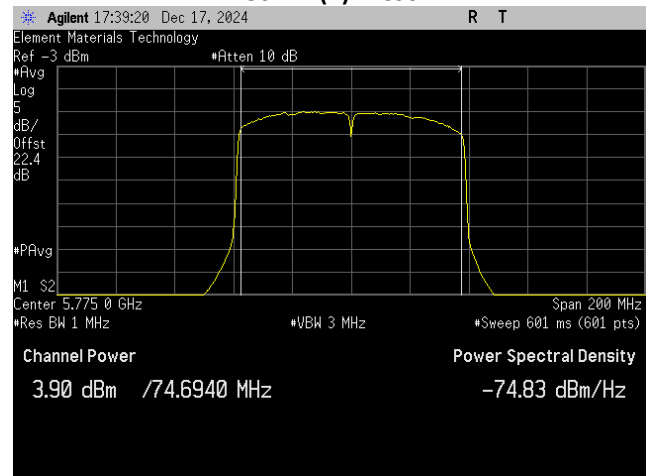
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS7



U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS0



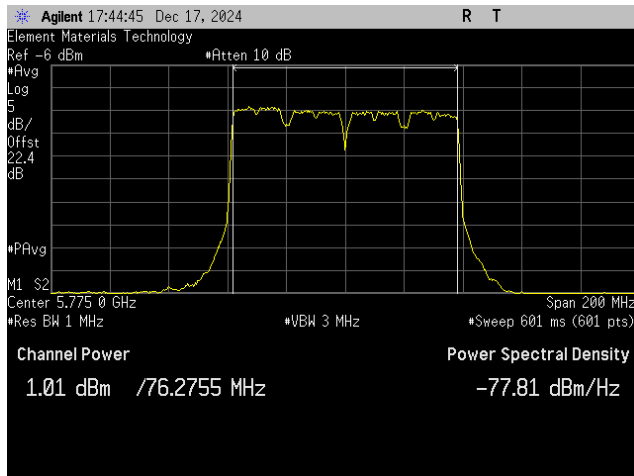
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS7



U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS0

MAXIMUM CONDUCTED OUTPUT POWER

U-NII-3



U-NII-3 Band (80MHz BW)

Ch 155 - 5775 MHz

802.11(ac) MCS9

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

U-NII-1



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the 99% occupied bandwidth (OBW) and the duty cycle (D) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report.

The maximum conducted output power was measured using ANSI C63.10:2013, Clause 12.3.2.4, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

- RMS Detector
- Trace average 100 traces in power averaging mode.
- Power was integrated across "OBW", by using the channel power function of the analyzer.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi).

The worst case (most stringent) limits are shown on the following datasheet based on the limits below where B is the bandwidth in terms of 99% for ISED and 26dB for the FCC.

- In the 5.15 – 5.25GHz band, the maximum e.i.r.p. shall not exceed the lesser of
 - o 250 mW (24.0 dBm) + 6 dBi = 30 dBm EIRP for the FCC
 - o 200 mW EIRP or $10 + 10 \log_{10} B$ dBm EIRP for ISED
- In the 5.25 – 5.35GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$ dBm EIRP.
- In the 5.47 – 5.725GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$, dBm EIRP.
- In the 5.725 – 5.850GHz band, the maximum permissible e.i.r.p. is 36 dBm EIRP.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) U-NII-1



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

Tested By

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

U-NII-1

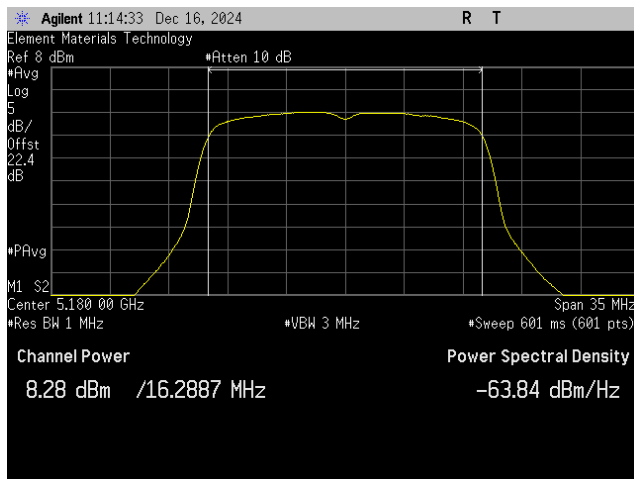


TEST RESULTS

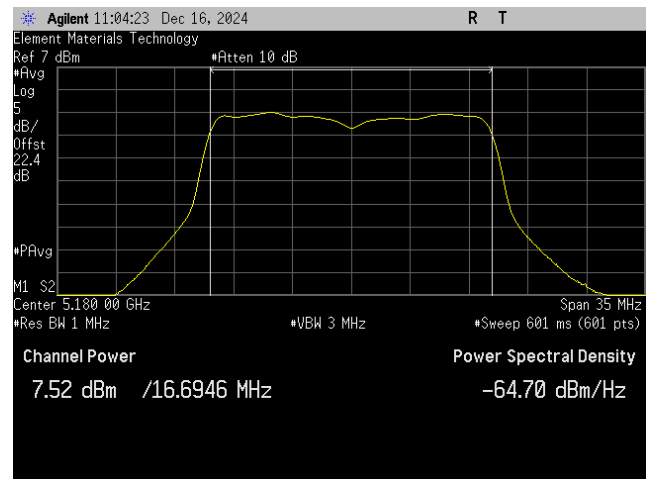
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
U-NII-1 Band (20MHz BW)							
Ch 36 - 5180 MHz							
802.11(a) 6 Mbps	8.276	0.2	8.5	6.5	15	29.5	Pass
802.11(a) 36 Mbps	7.522	1.3	8.8	6.5	15.3	29.5	Pass
802.11(a) 54 Mbps	7.091	2	9.1	6.5	15.6	29.5	Pass
802.11(n) MCS0	7.207	0.4	7.6	6.5	14.1	29.5	Pass
802.11(n) MCS7	7.237	1.9	9.1	6.5	15.6	29.5	Pass
Ch 44 - 5220 MHz							
802.11(a) 6 Mbps	10.542	0.3	10.8	6.5	17.3	29.5	Pass
802.11(a) 36 Mbps	9.399	1.3	10.7	6.5	17.2	29.5	Pass
802.11(a) 54 Mbps	9.038	1.7	10.7	6.5	17.2	29.5	Pass
802.11(n) MCS0	10.479	0.4	10.9	6.5	17.4	29.5	Pass
802.11(n) MCS7	8.932	1.8	10.7	6.5	17.2	29.5	Pass
Ch 48 - 5240 MHz							
802.11(a) 6 Mbps	11.119	0.3	11.4	6.5	17.9	29.5	Pass
802.11(a) 36 Mbps	10.689	1.5	12.2	6.5	18.7	29.5	Pass
802.11(a) 54 Mbps	10.187	1.9	12.1	6.5	18.6	29.5	Pass
802.11(n) MCS0	10.953	0.3	11.3	6.5	17.8	29.5	Pass
802.11(n) MCS7	10.047	2.8	12.8	6.5	19.3	29.5	Pass
U-NII-1 Band (40MHz BW)							
Ch 38 - 5190 MHz							
802.11(n) MCS0	8.275	0.5	8.8	6.5	15.3	29.5	Pass
802.11(n) MCS7	6.43	2.4	8.8	6.5	15.3	29.5	Pass
Ch 46 - 5230 MHz							
802.11(n) MCS0	14.801	0.5	15.3	6.5	21.8	29.5	Pass
802.11(n) MCS7	12.419	2.6	15	6.5	21.5	29.5	Pass
U-NII-1 Band (80MHz BW)							
Ch 42 - 5210 MHz							
802.11(ac) MCS0	4.681	1.2	5.9	6.5	12.4	29.5	Pass
802.11(ac) MCS9	1.897	5.2	7.1	6.5	13.6	29.5	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

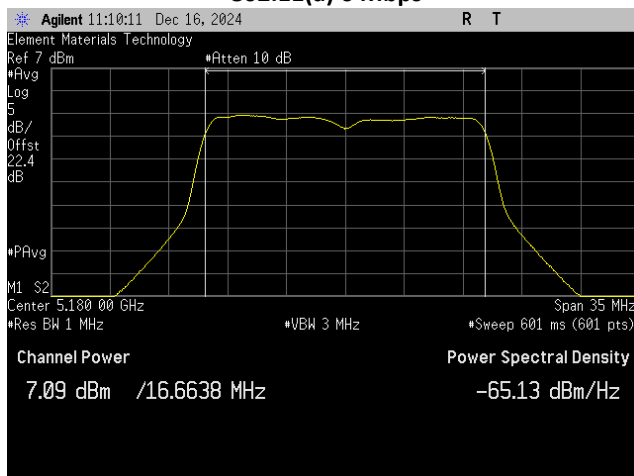
U-NII-1



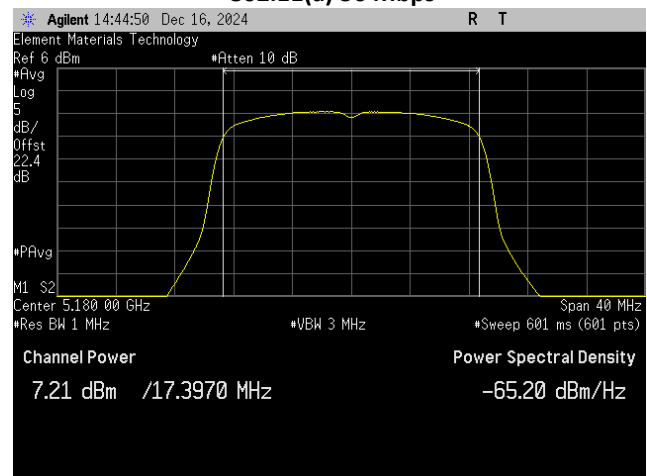
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 6 Mbps



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 36 Mbps



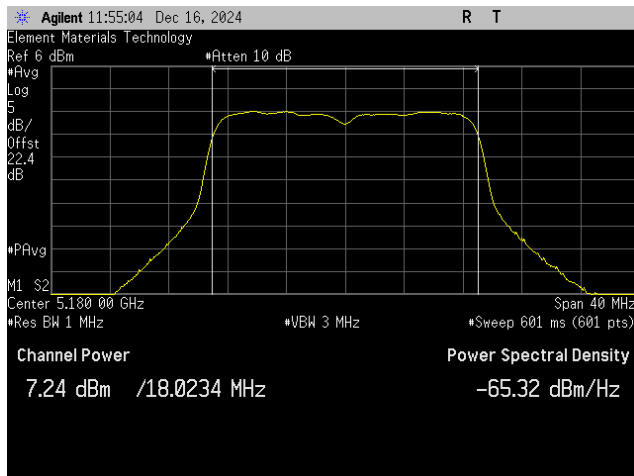
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 54 Mbps



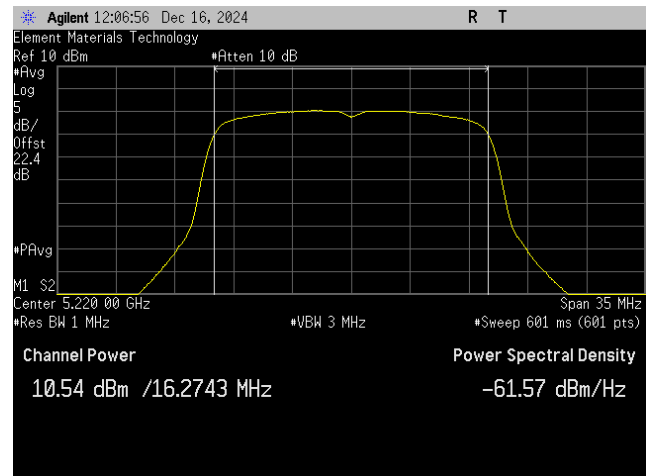
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

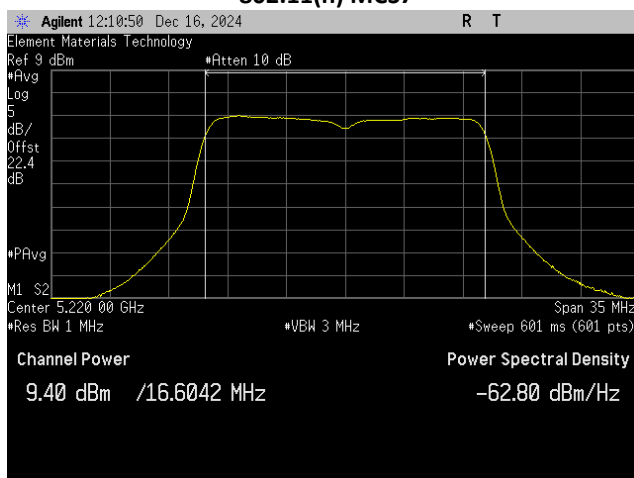
U-NII-1



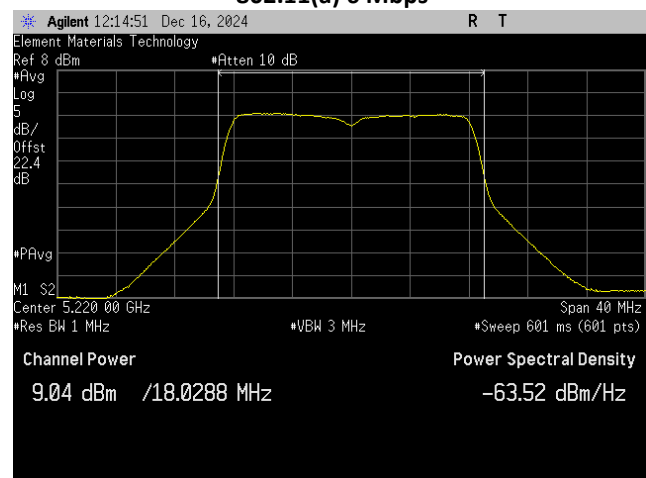
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS7



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 6 Mbps



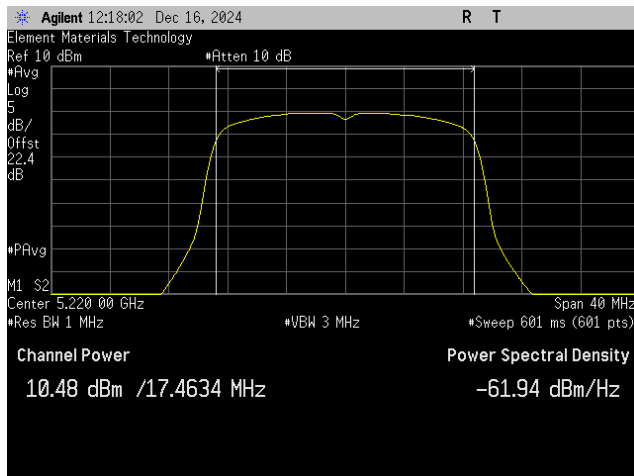
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 36 Mbps



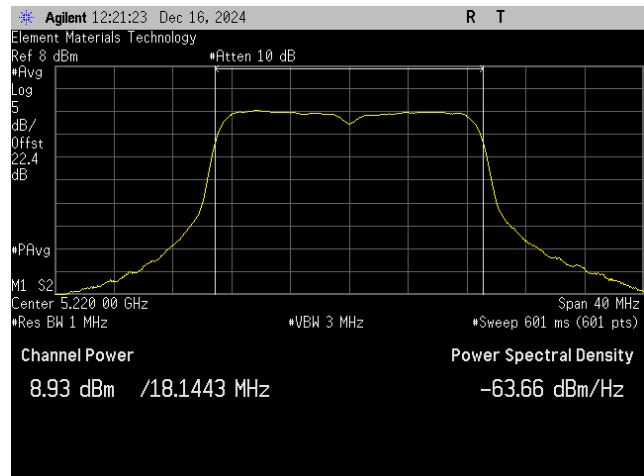
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 54 Mbps

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

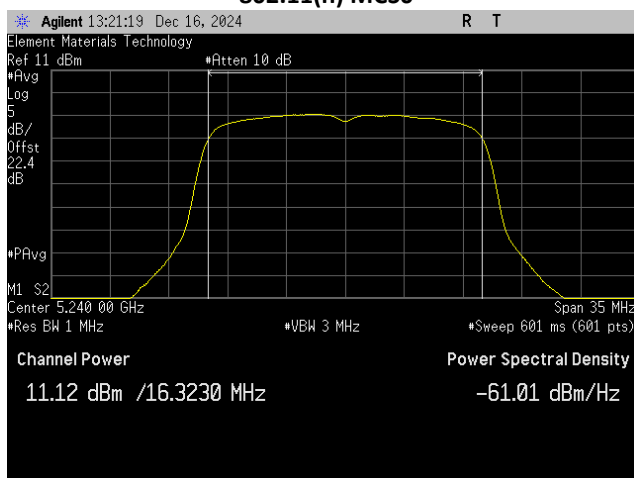
U-NII-1



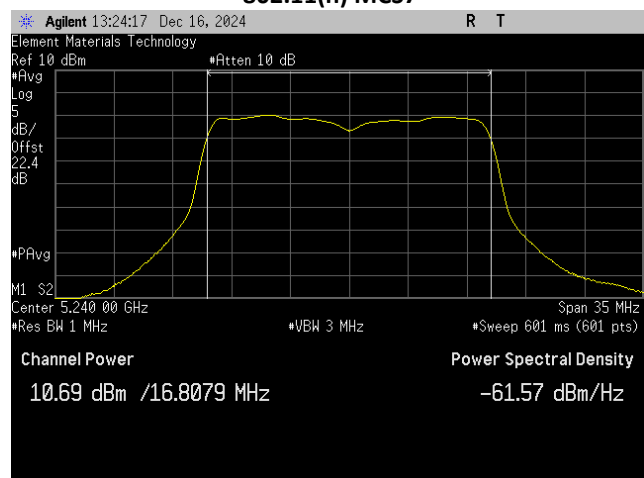
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS0



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS7



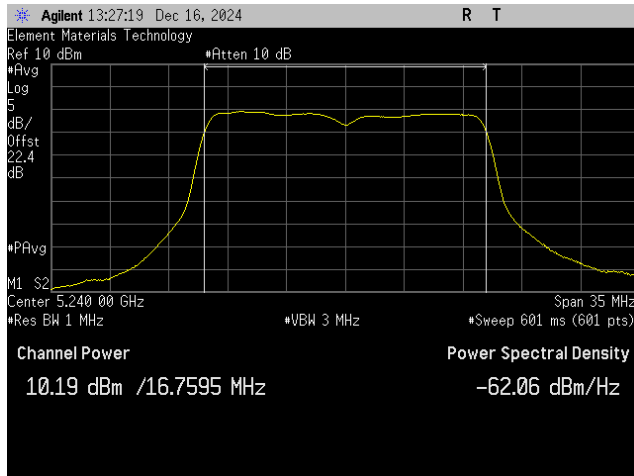
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 6 Mbps



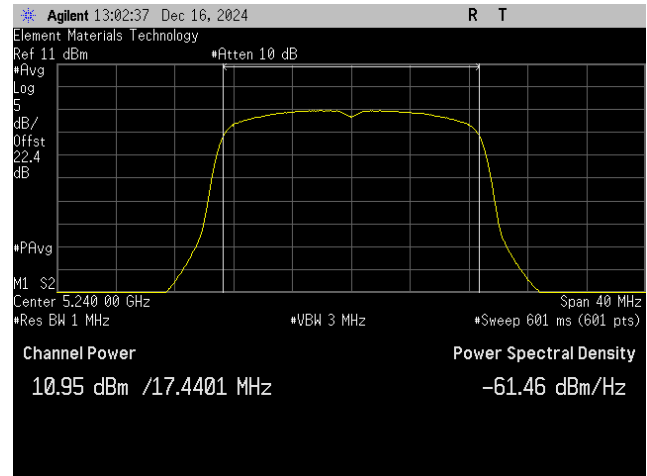
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 36 Mbps

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

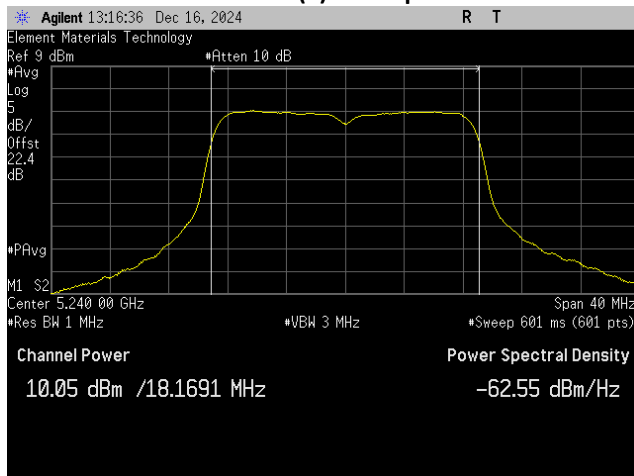
U-NII-1



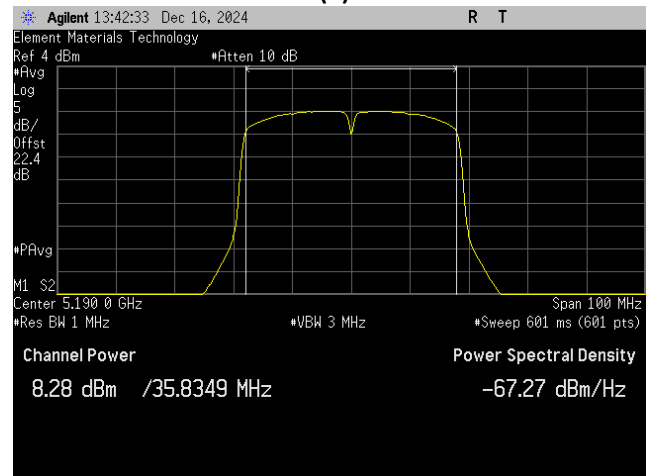
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 54 Mbps



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS0



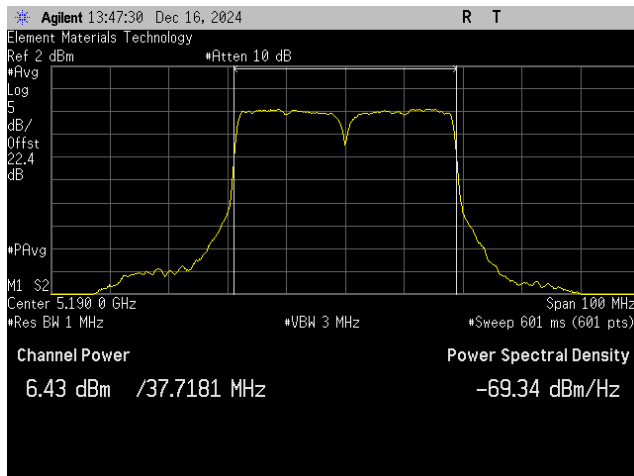
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS7



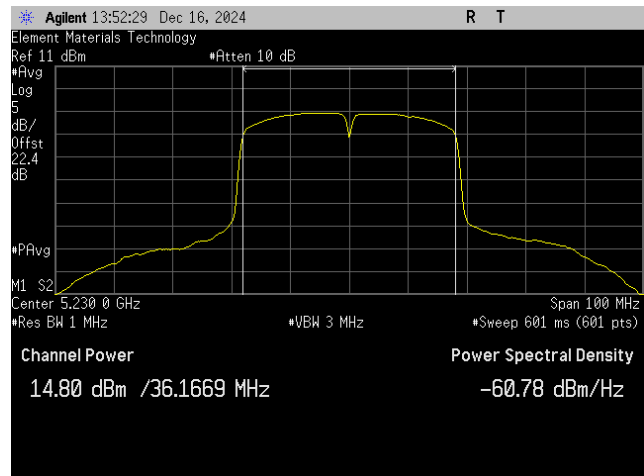
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

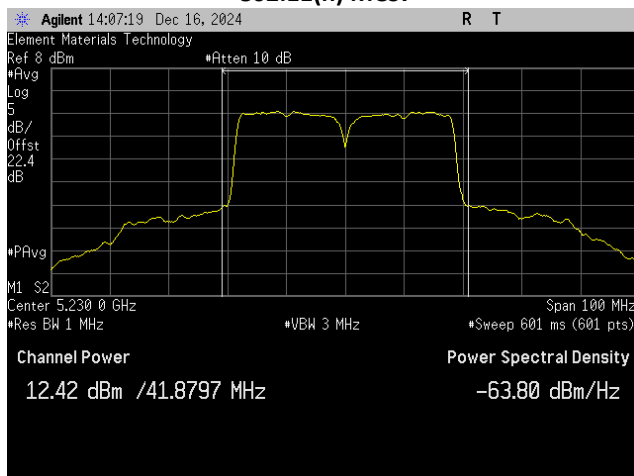
U-NII-1



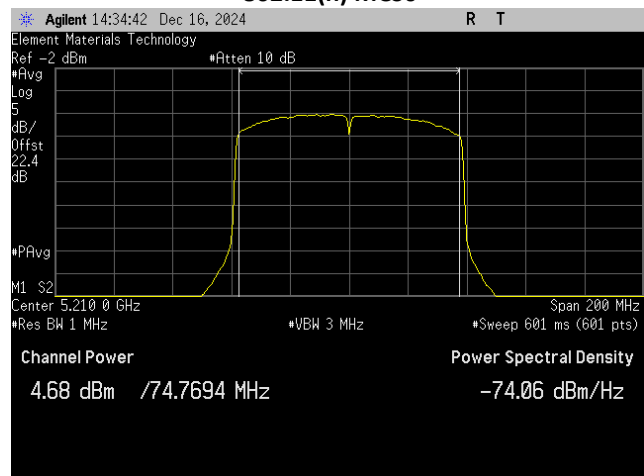
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS7



U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS0



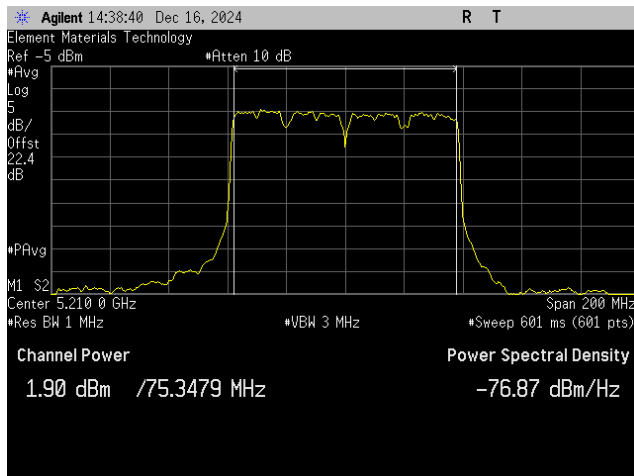
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS7



U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

U-NII-1



U-NII-1 Band (80MHz BW)

Ch 42 - 5210 MHz

802.11(ac) MCS9

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

U-NII-3



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

Prior to measuring maximum transmit power; the 99% occupied bandwidth (OBW) and the duty cycle (D) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report.

The maximum conducted output power was measured using ANSI C63.10:2013, Clause 12.3.2.4, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

- RMS Detector
- Trace average 100 traces in power averaging mode.
- Power was integrated across "OBW", by using the channel power function of the analyzer.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi).

The worst case (most stringent) limits are shown on the following datasheet based on the limits below where B is the bandwidth in terms of 99% for ISED and 26dB for the FCC.

- In the 5.15 – 5.25GHz band, the maximum e.i.r.p. shall not exceed the lesser of
 - o 250 mW (24.0 dBm) + 6 dBi = 30 dBm EIRP for the FCC
 - o 200 mW EIRP or $10 + 10 \log_{10} B$ dBm EIRP for ISED
- In the 5.25 – 5.35GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$ dBm EIRP.
- In the 5.47 – 5.725GHz band, the maximum permissible e.i.r.p. shall not exceed the lesser of 1.0 W or $17 + 10 \log_{10} B$, dBm EIRP.
- In the 5.725 – 5.850GHz band, the maximum permissible e.i.r.p. is 36 dBm EIRP.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

Tested By

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) U-NII-3

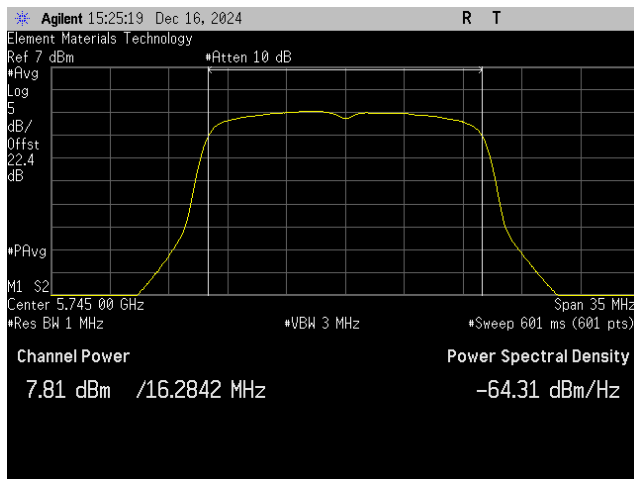


TEST RESULTS

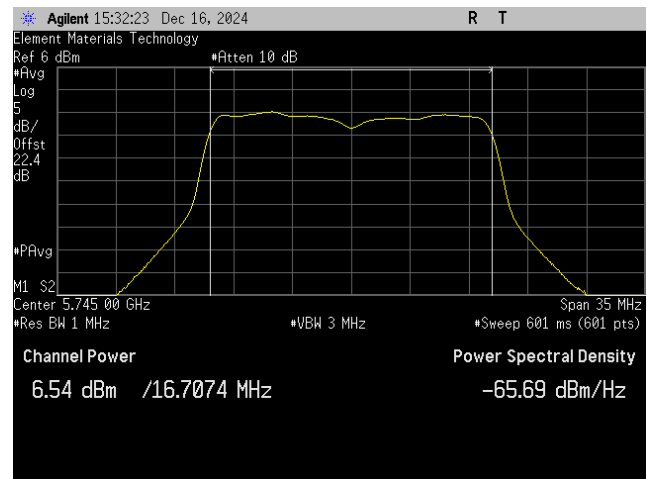
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
U-NII-3 Band (20MHz BW)							
Ch 149 - 5745 MHz							
802.11(a) 6 Mbps	7.807	0.3	8.1	6.5	14.6	35.5	Pass
802.11(a) 36 Mbps	6.535	1.2	7.7	6.5	14.2	35.5	Pass
802.11(a) 54 Mbps	6.241	1.9	8.1	6.5	14.6	35.5	Pass
802.11(n) MCS0	7.499	0.5	8	6.5	14.5	35.5	Pass
802.11(n) MCS7	5.811	1.7	7.5	6.5	14	35.5	Pass
Ch 157 - 5785 MHz							
802.11(a) 6 Mbps	7.35	0.3	7.7	6.5	14.2	35.5	Pass
802.11(a) 36 Mbps	7.776	1.3	9.1	6.5	15.6	35.5	Pass
802.11(a) 54 Mbps	7.242	2.3	9.5	6.5	16	35.5	Pass
802.11(n) MCS0	8.096	0.3	8.4	6.5	14.9	35.5	Pass
802.11(n) MCS7	7.401	2	9.4	6.5	15.9	35.5	Pass
Ch 165 - 5825 MHz							
802.11(a) 6 Mbps	6.871	0.3	7.2	6.5	13.7	35.5	Pass
802.11(a) 36 Mbps	6.31	1.1	7.4	6.5	13.9	35.5	Pass
802.11(a) 54 Mbps	6.592	1.5	8.1	6.5	14.6	35.5	Pass
802.11(n) MCS0	8.698	0.8	9.5	6.5	16	35.5	Pass
802.11(n) MCS7	6.525	2.3	8.8	6.5	15.3	35.5	Pass
U-NII-3 Band (40MHz BW)							
Ch 151 - 5755 MHz							
802.11(n) MCS0	7.682	0.6	8.3	6.5	14.8	35.5	Pass
802.11(n) MCS7	5.481	2.7	8.2	6.5	14.7	35.5	Pass
Ch 159 - 5795 MHz							
802.11(n) MCS0	7.112	1	8.1	6.5	14.6	35.5	Pass
802.11(n) MCS7	4.998	2.6	7.6	6.5	14.1	35.5	Pass
U-NII-3 Band (80MHz BW)							
Ch 155 - 5775 MHz							
802.11(ac) MCS0	3.903	1.2	5.1	6.5	11.6	35.5	Pass
802.11(ac) MCS9	1.01	4.8	5.81	6.5	12.31	35.5	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

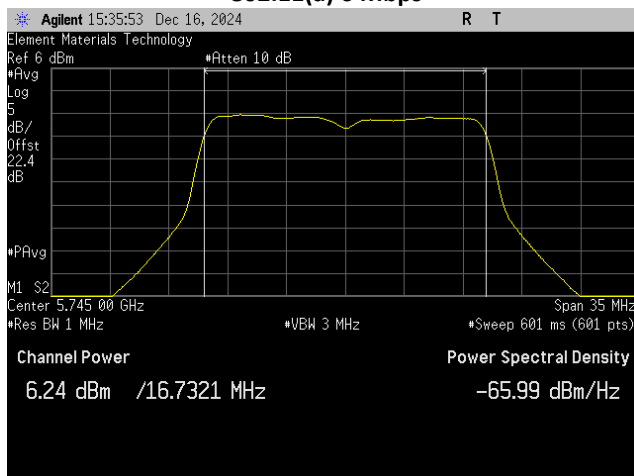
U-NII-3



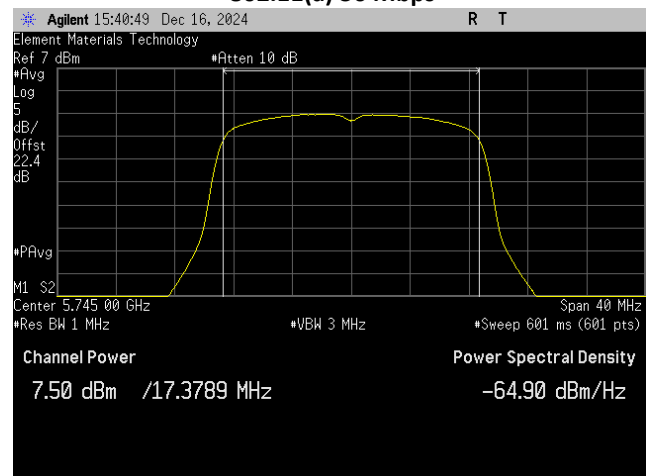
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 6 Mbps



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 36 Mbps



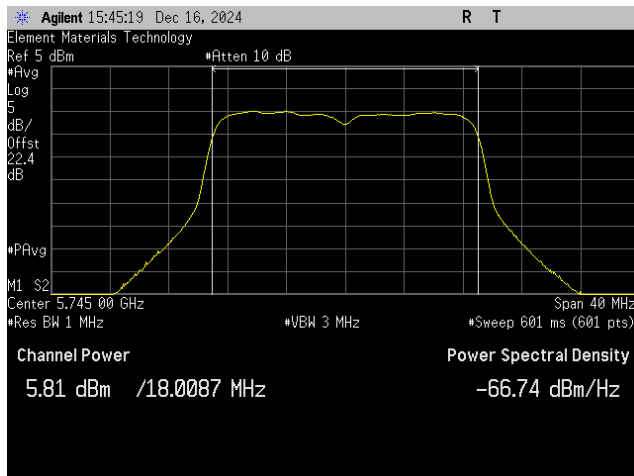
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 54 Mbps



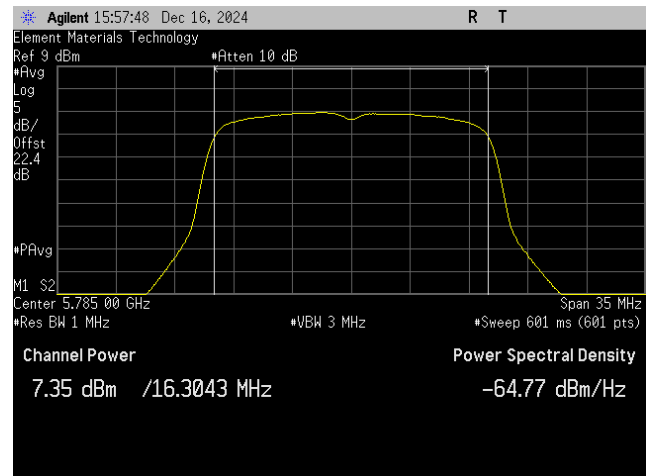
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

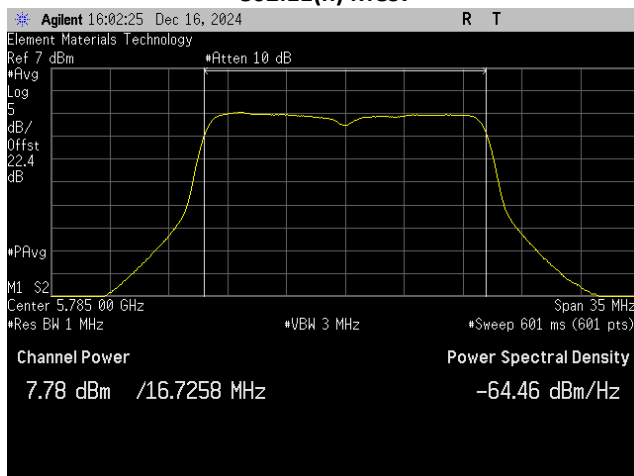
U-NII-3



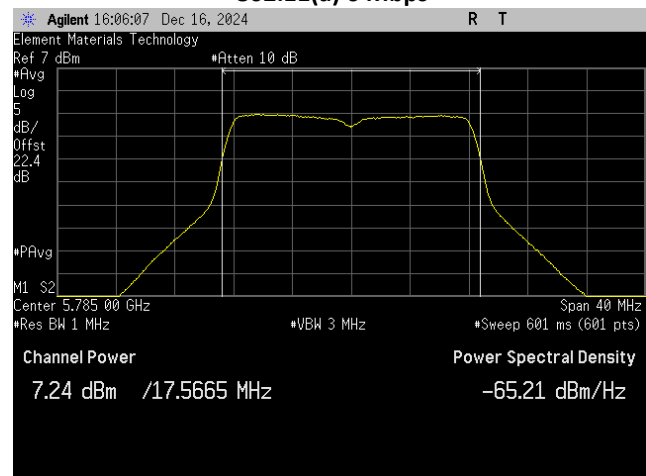
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS7



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 6 Mbps



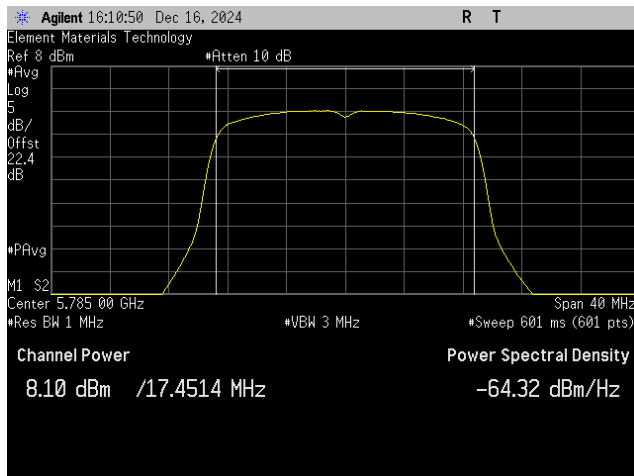
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 36 Mbps



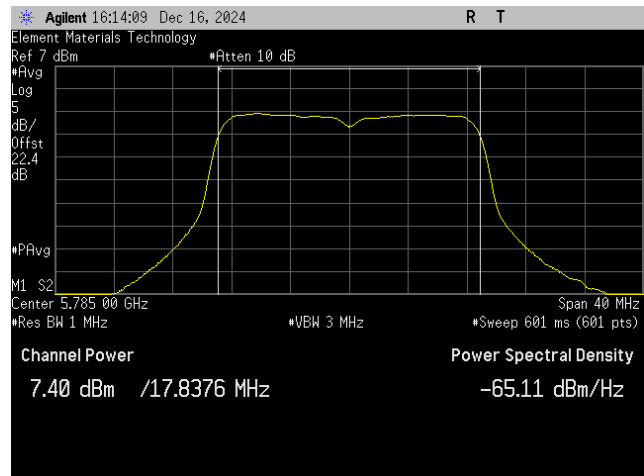
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 54 Mbps

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

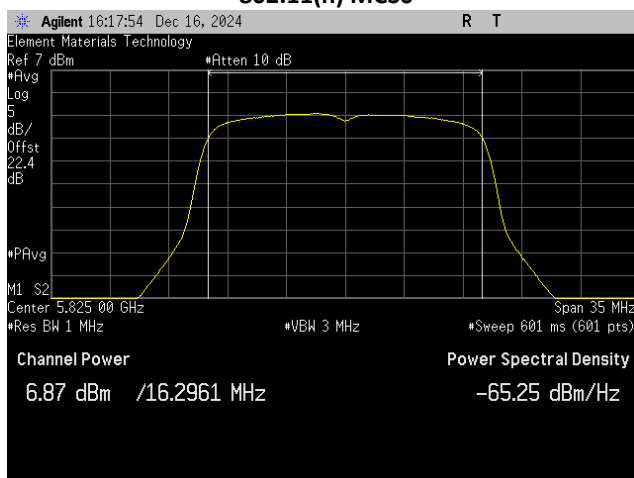
U-NII-3



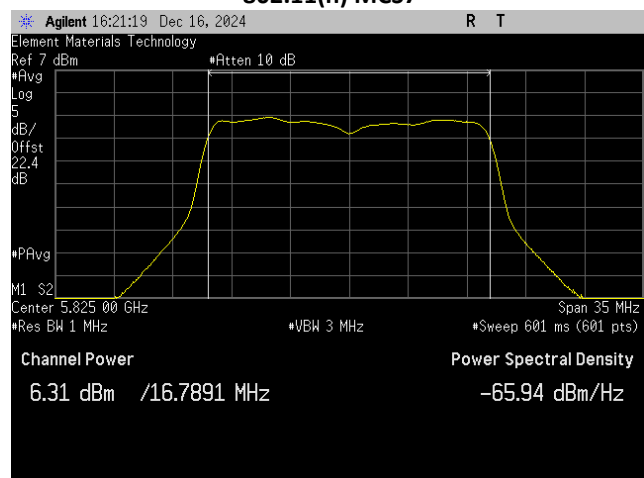
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS0



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS7



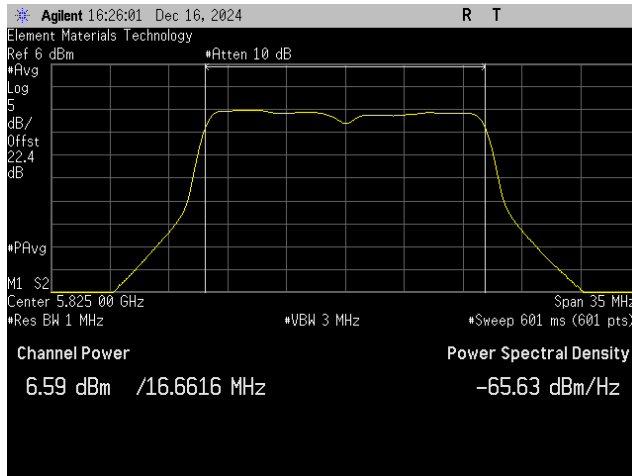
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 6 Mbps



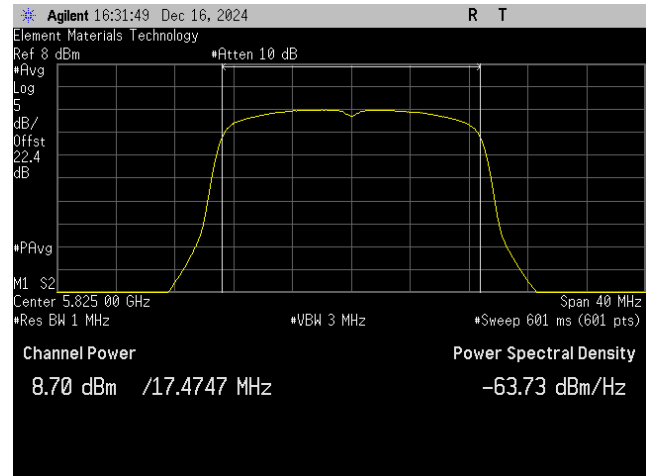
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 36 Mbps

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

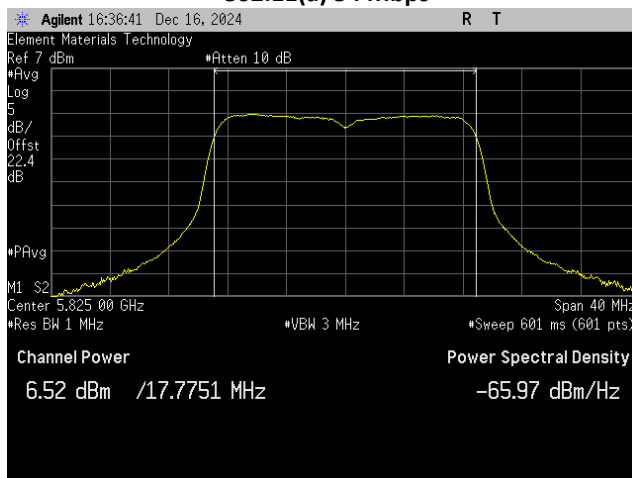
U-NII-3



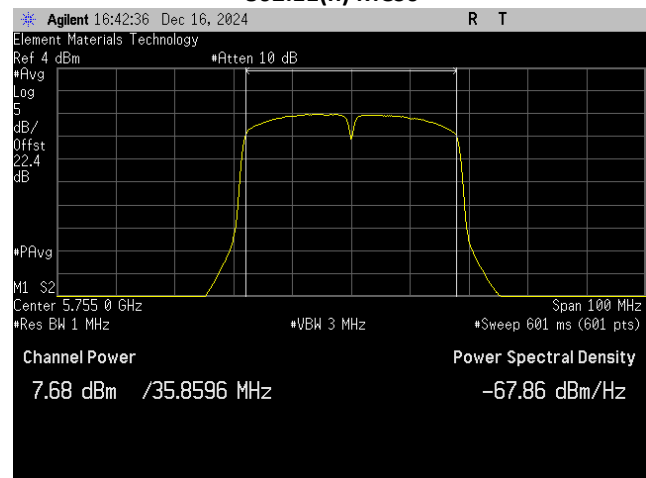
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 54 Mbps



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS0



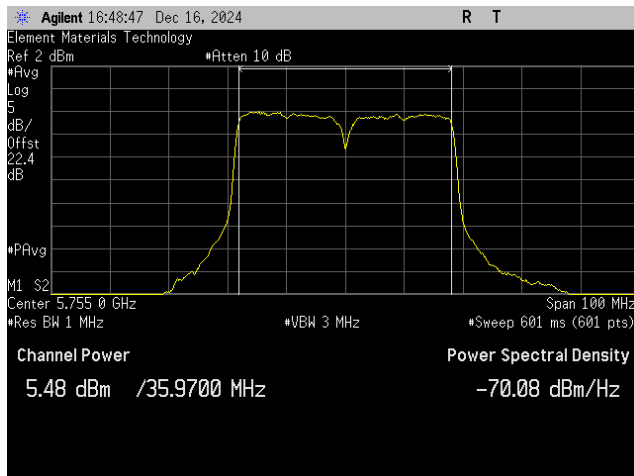
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS7



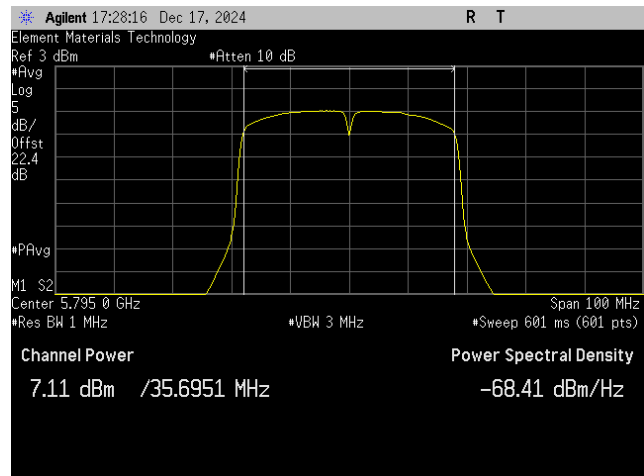
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

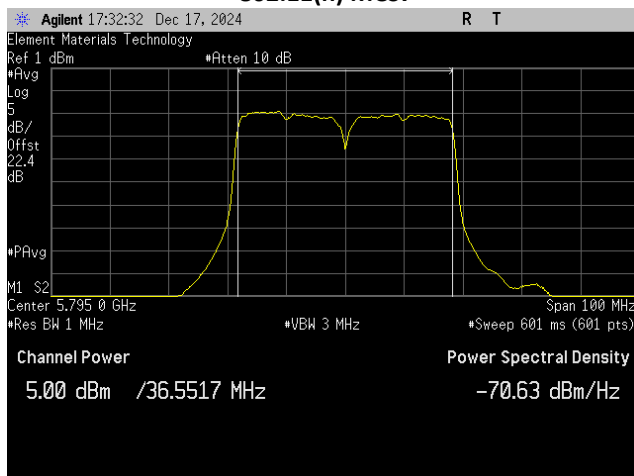
U-NII-3



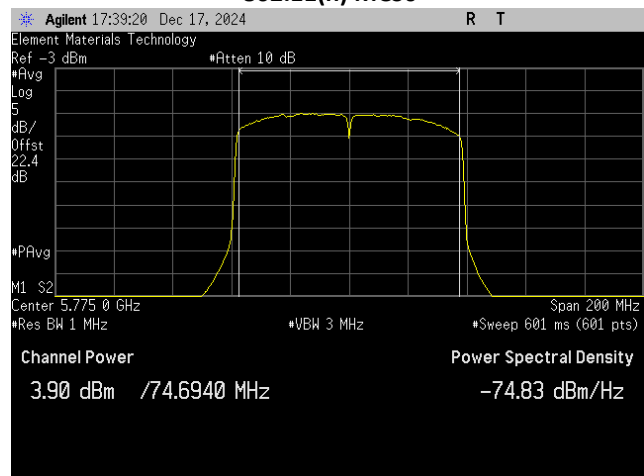
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS7



U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS0



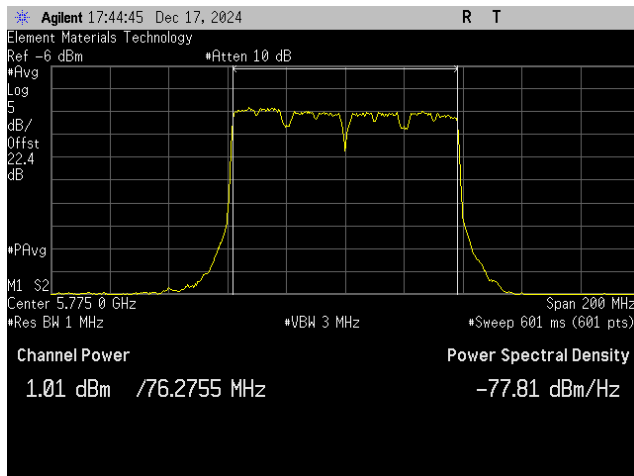
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS7



U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS0

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

U-NII-3



U-NII-3 Band (80MHz BW)

Ch 155 - 5775 MHz

802.11(ac) MCS9

OCCUPIED BANDWIDTH

U-NII-1



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth as defined in RSS-Gen Clause 6.7. This value is also used to set the integration bandwidth for output power as allowed per ANSI C63.10 section 12.3.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

OCCUPIED BANDWIDTH U-NII-1



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

Tested By

OCCUPIED BANDWIDTH

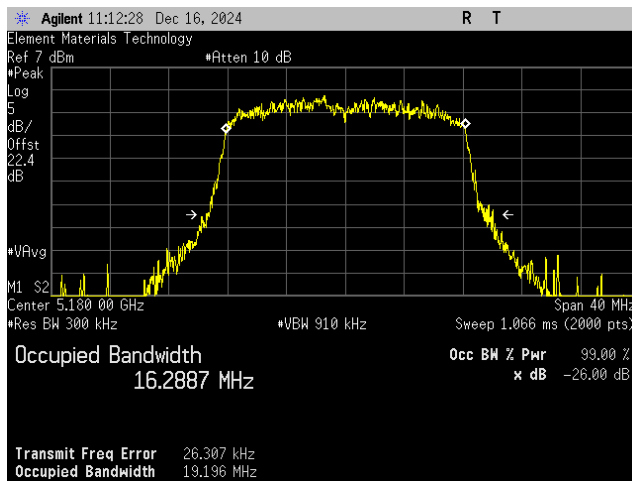
U-NII-1

TEST RESULTS

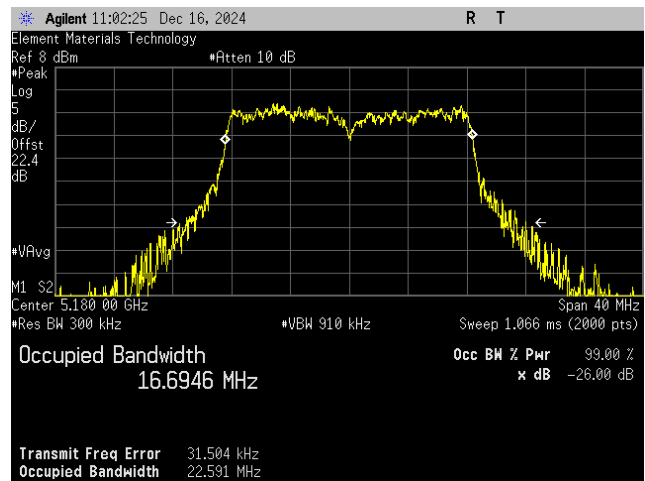
		Value	Limit	Result
U-NII-1 Band (20MHz BW)				
Ch 36 - 5180 MHz				
	802.11(a) 6 Mbps	16.289 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.695 MHz	N/A	N/A
	802.11(a) 54 Mbps	16.664 MHz	N/A	N/A
	802.11(n) MCS0	17.397 MHz	N/A	N/A
	802.11(n) MCS7	18.023 MHz	N/A	N/A
Ch 44 - 5220 MHz				
	802.11(a) 6 Mbps	16.274 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.604 MHz	N/A	N/A
	802.11(a) 54 Mbps	18.029 MHz	N/A	N/A
	802.11(n) MCS0	17.463 MHz	N/A	N/A
	802.11(n) MCS7	18.144 MHz	N/A	N/A
Ch 48 - 5240 MHz				
	802.11(a) 6 Mbps	16.323 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.808 MHz	N/A	N/A
	802.11(a) 54 Mbps	16.76 MHz	N/A	N/A
	802.11(n) MCS0	17.44 MHz	N/A	N/A
	802.11(n) MCS7	18.169 MHz	N/A	N/A
U-NII-1 Band (40MHz BW)				
Ch 38 - 5190 MHz				
	802.11(n) MCS0	35.835 MHz	N/A	N/A
	802.11(n) MCS7	37.718 MHz	N/A	N/A
Ch 46 - 5230 MHz				
	802.11(n) MCS0	36.167 MHz	N/A	N/A
	802.11(n) MCS7	41.88 MHz	N/A	N/A
U-NII-1 Band (80MHz BW)				
Ch 42 - 5210 MHz				
	802.11(ac) MCS0	74.769 MHz	N/A	N/A
	802.11(ac) MCS9	75.348 MHz	N/A	N/A

OCCUPIED BANDWIDTH

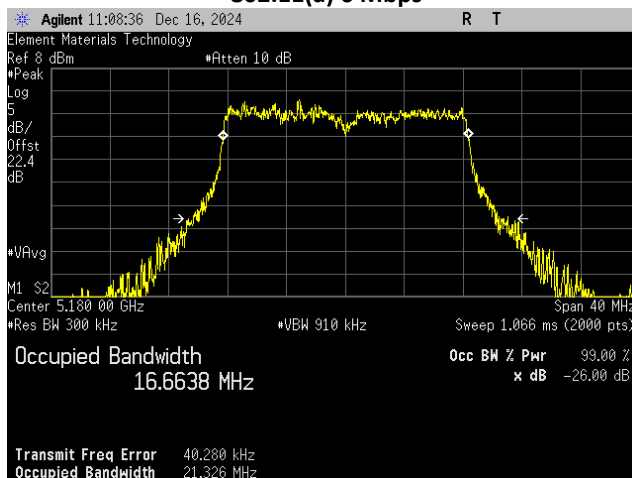
U-NII-1



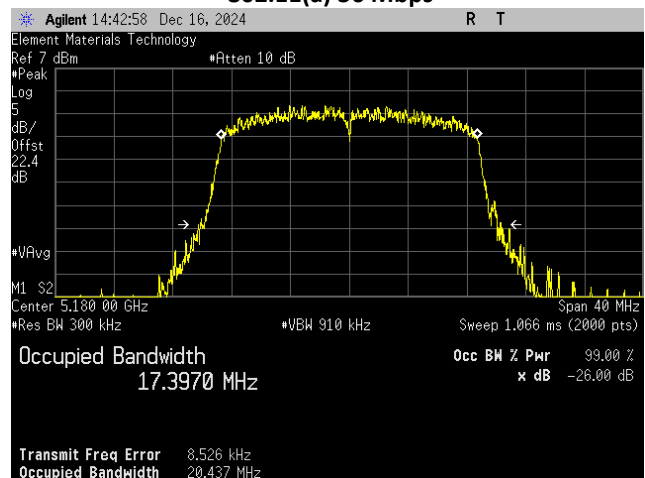
U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 6 Mbps



U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 36 Mbps

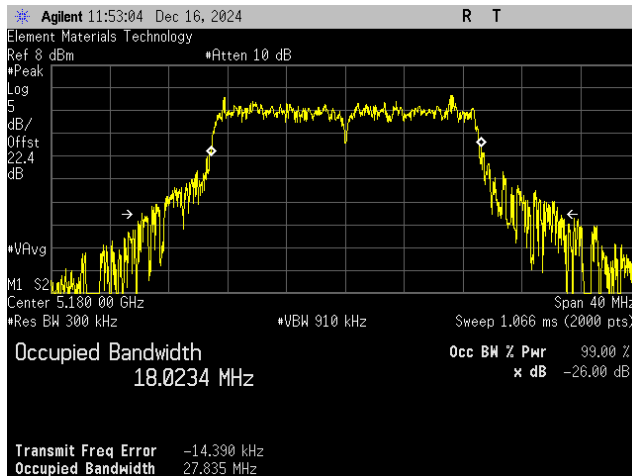


U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(a) 54 Mbps

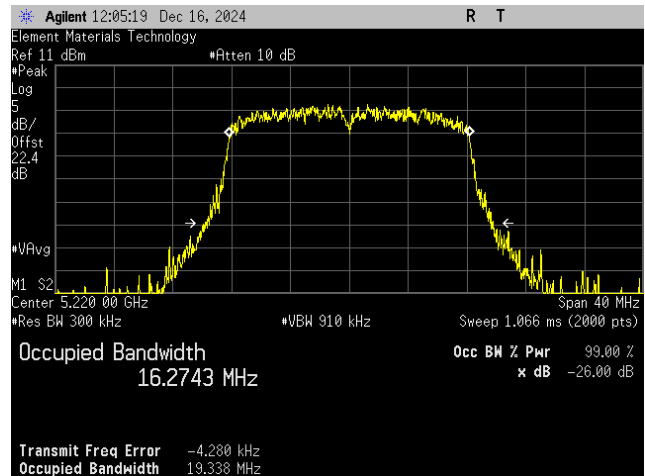


U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS0

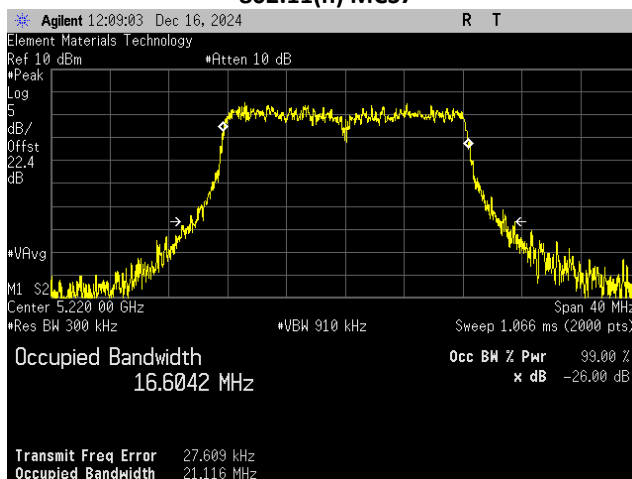
OCCUPIED BANDWIDTH U-NII-1



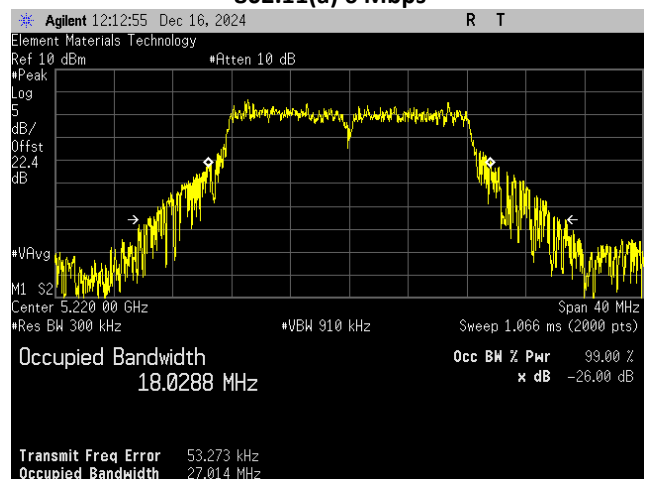
**U-NII-1 Band (20MHz BW)
Ch 36 - 5180 MHz
802.11(n) MCS7**



**U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 6 Mbps**



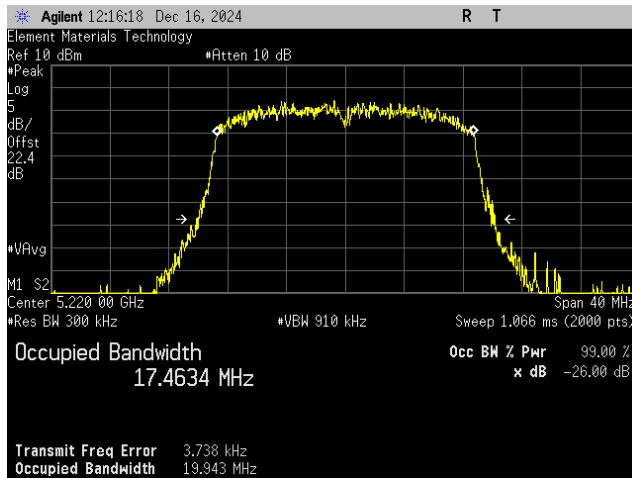
**U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 36 Mbps**



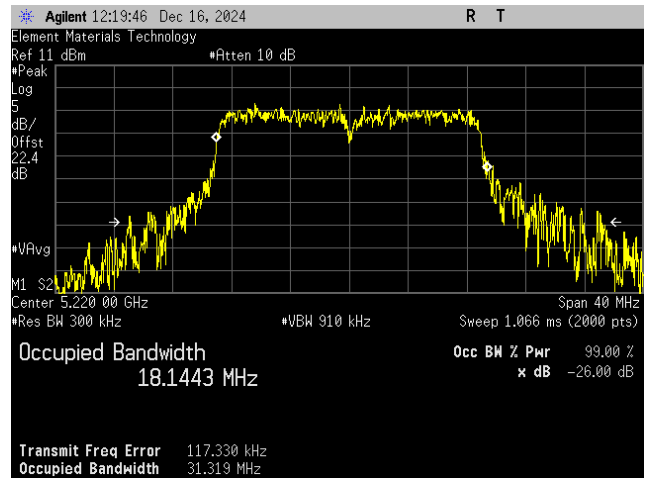
**U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(a) 54 Mbps**

OCCUPIED BANDWIDTH

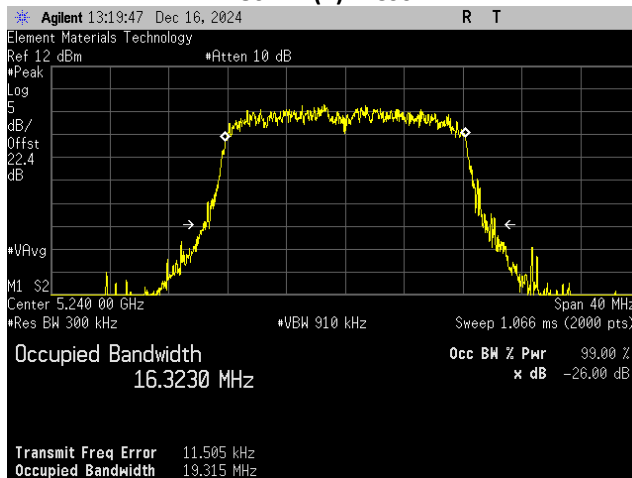
U-NII-1



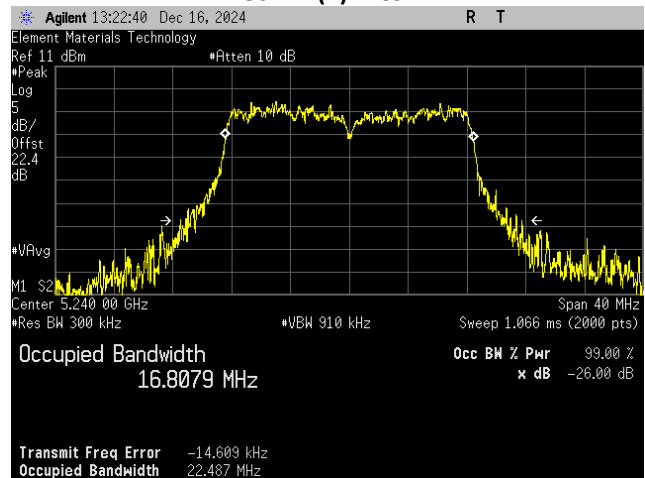
U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS0



U-NII-1 Band (20MHz BW)
Ch 44 - 5220 MHz
802.11(n) MCS7



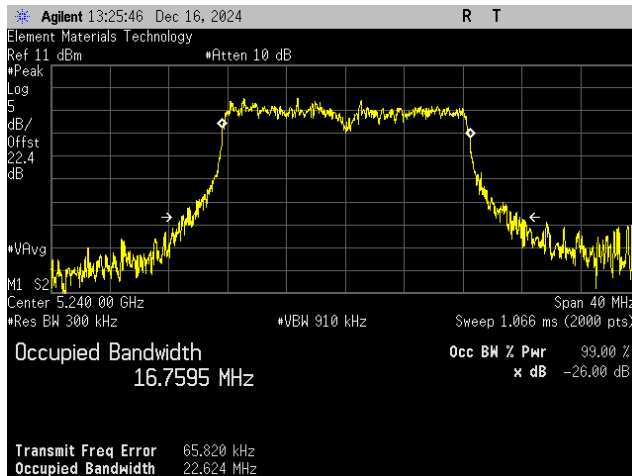
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 6 Mbps



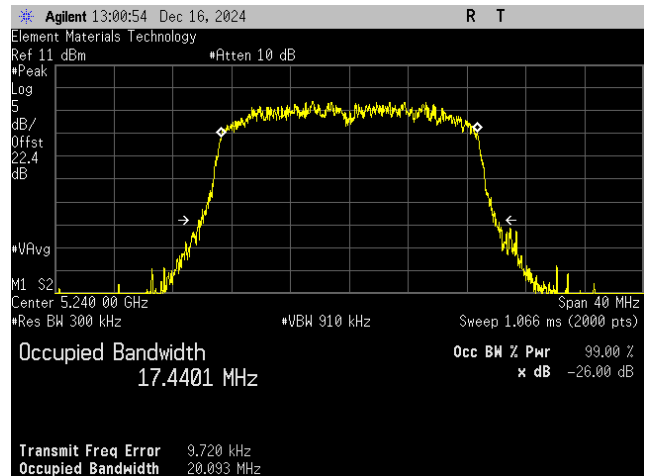
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 36 Mbps

OCCUPIED BANDWIDTH

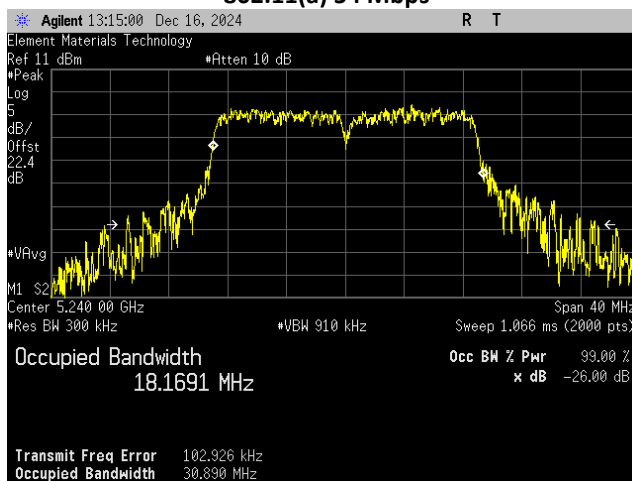
U-NII-1



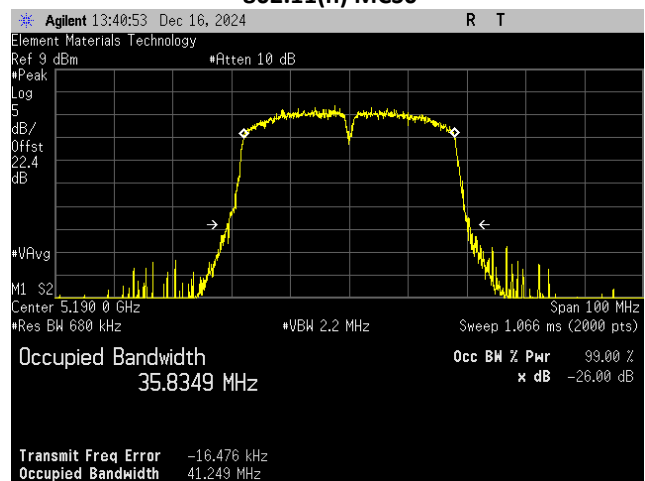
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(a) 54 Mbps



U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS0



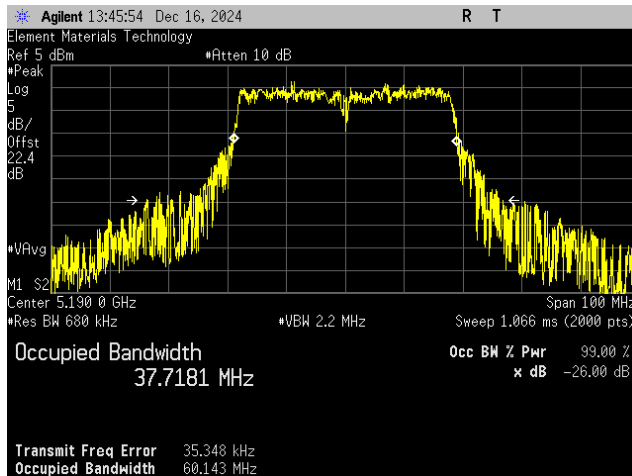
U-NII-1 Band (20MHz BW)
Ch 48 - 5240 MHz
802.11(n) MCS7



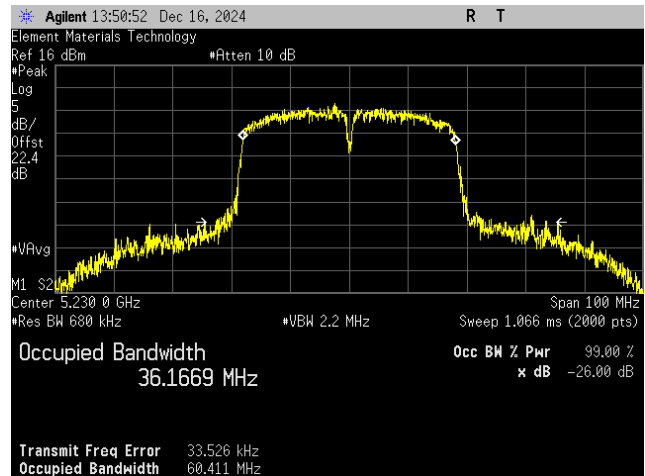
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS0

OCCUPIED BANDWIDTH

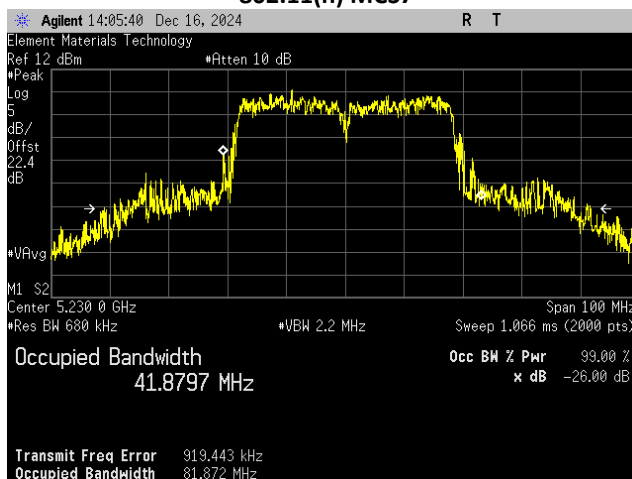
U-NII-1



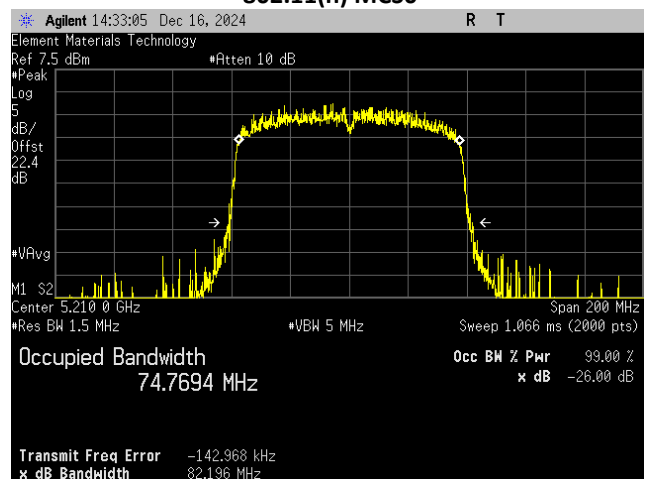
U-NII-1 Band (40MHz BW)
Ch 38 - 5190 MHz
802.11(n) MCS7



U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS0



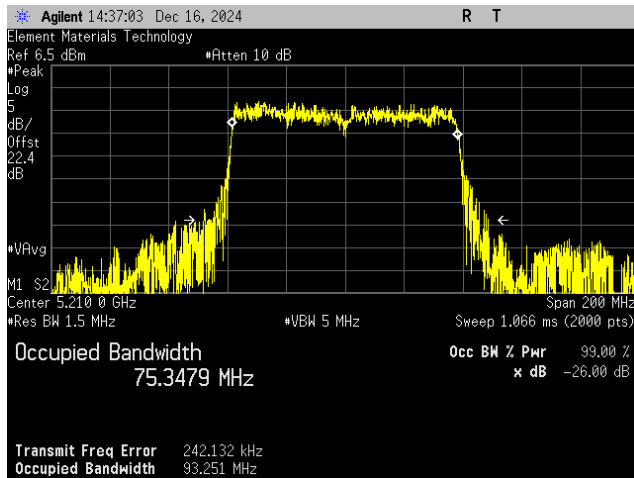
U-NII-1 Band (40MHz BW)
Ch 46 - 5230 MHz
802.11(n) MCS7



U-NII-1 Band (80MHz BW)
Ch 42 - 5210 MHz
802.11(ac) MCS0

OCCUPIED BANDWIDTH

U-NII-1



U-NII-1 Band (80MHz BW)

Ch 42 - 5210 MHz

802.11(ac) MCS9

OCCUPIED BANDWIDTH

U-NII-3



TEST DESCRIPTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth as defined in RSS-Gen Clause 6.7. This value is also used to set the integration bandwidth for output power as allowed per ANSI C63.10 section 12.3.

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) of the spectrum analyzer was set to the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) bandwidth was set to at least 3 times the resolution bandwidth. The analyzer sweep time was set to auto to prevent video filtering or averaging. A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAR	2024-11-07	2025-11-07
Block - DC	Fairview Microwave	SD3379	ANG	2024-10-03	2025-10-03
Attenuator	Fairview Microwave	SA18H-20	UAX	2024-07-11	2025-07-11
Cable	Micro-Coax	UFD150A-1-0720-200200	OCA	2024-10-02	2025-10-02
Generator - Signal	Agilent	E8257D	TGU	2023-11-08	2026-11-08
Meter - Multimeter	Fluke	107	MBF	2024-04-12	2025-04-12

OCCUPIED BANDWIDTH U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	R213200116	Date:	2024-12-16
Customer:	OrthAlign	Temperature:	20.2°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mbar
Tested By:	Nolan De Ramos	Job Site:	OC13
Power:	5VDC	Configuration:	ORTH0035-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

Tested By

OCCUPIED BANDWIDTH

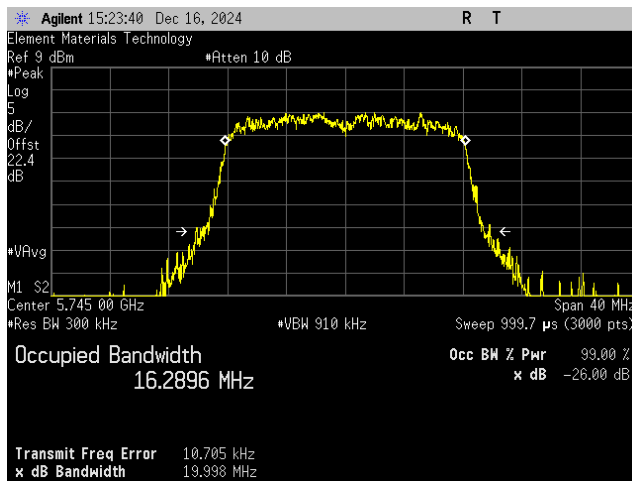
U-NII-3

TEST RESULTS

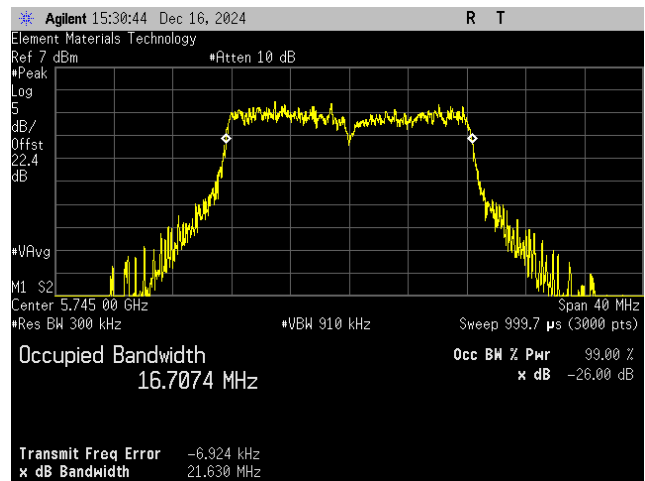
		Value	Limit	Result
U-NII-3 Band (20MHz BW)				
Ch 149 - 5745 MHz				
	802.11(a) 6 Mbps	16.284 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.707 MHz	N/A	N/A
	802.11(a) 54 Mbps	16.732 MHz	N/A	N/A
	802.11(n) MCS0	17.379 MHz	N/A	N/A
	802.11(n) MCS7	18.009 MHz	N/A	N/A
Ch 157 - 5785 MHz				
	802.11(a) 6 Mbps	16.304 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.726 MHz	N/A	N/A
	802.11(a) 54 Mbps	17.567 MHz	N/A	N/A
	802.11(n) MCS0	17.451 MHz	N/A	N/A
	802.11(n) MCS7	17.838 MHz	N/A	N/A
Ch 165 - 5825 MHz				
	802.11(a) 6 Mbps	16.296 MHz	N/A	N/A
	802.11(a) 36 Mbps	16.789 MHz	N/A	N/A
	802.11(a) 54 Mbps	16.662 MHz	N/A	N/A
	802.11(n) MCS0	17.475 MHz	N/A	N/A
	802.11(n) MCS7	17.775 MHz	N/A	N/A
U-NII-3 Band (40MHz BW)				
Ch 151 - 5755 MHz				
	802.11(n) MCS0	35.86 MHz	N/A	N/A
	802.11(n) MCS7	35.97 MHz	N/A	N/A
Ch 159 - 5795 MHz				
	802.11(n) MCS0	35.695 MHz	N/A	N/A
	802.11(n) MCS7	36.552 MHz	N/A	N/A
U-NII-3 Band (80MHz BW)				
Ch 155 - 5775 MHz				
	802.11(ac) MCS0	74.694 MHz	N/A	N/A
	802.11(ac) MCS9	76.276 MHz	N/A	N/A

OCCUPIED BANDWIDTH

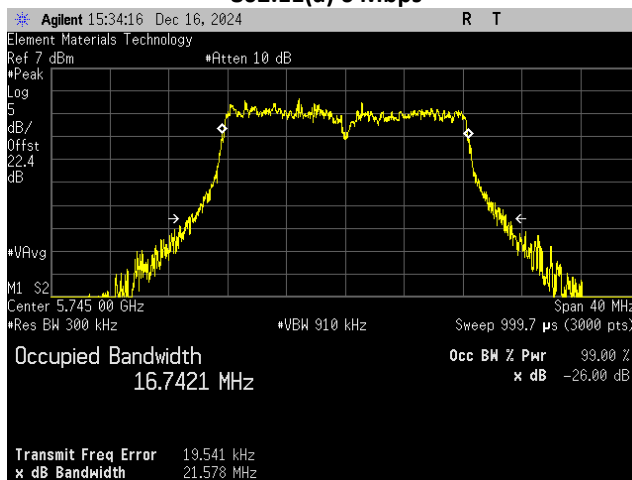
U-NII-3



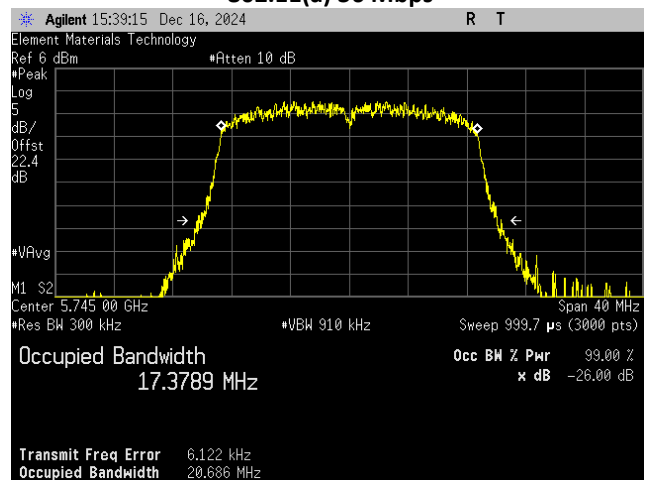
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 6 Mbps



U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 36 Mbps



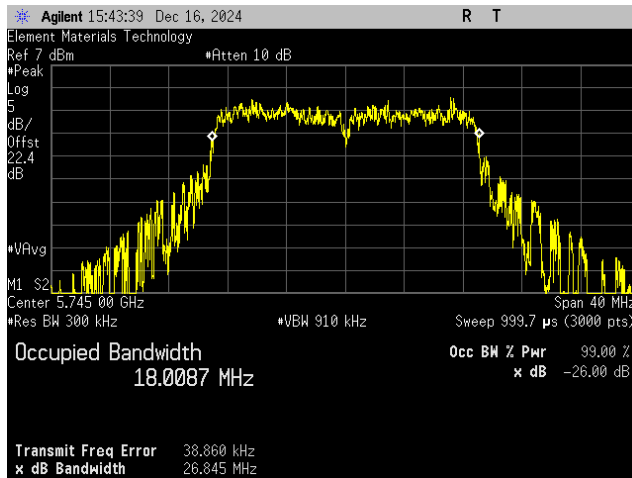
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(a) 54 Mbps



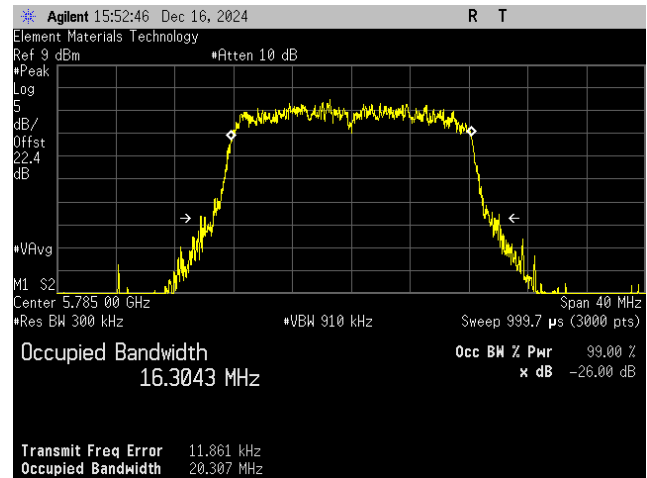
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS0

OCCUPIED BANDWIDTH

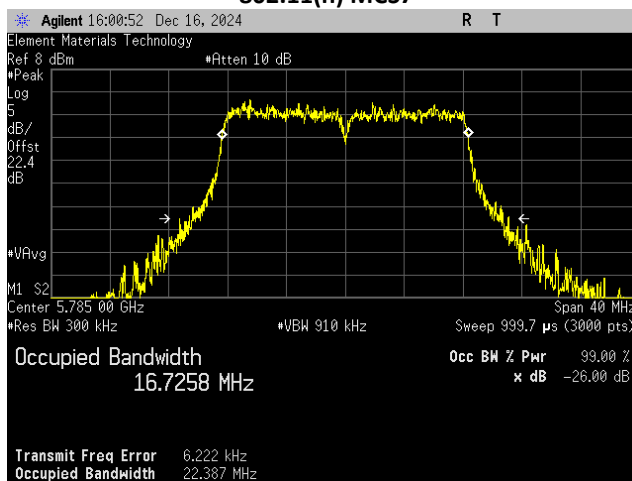
U-NII-3



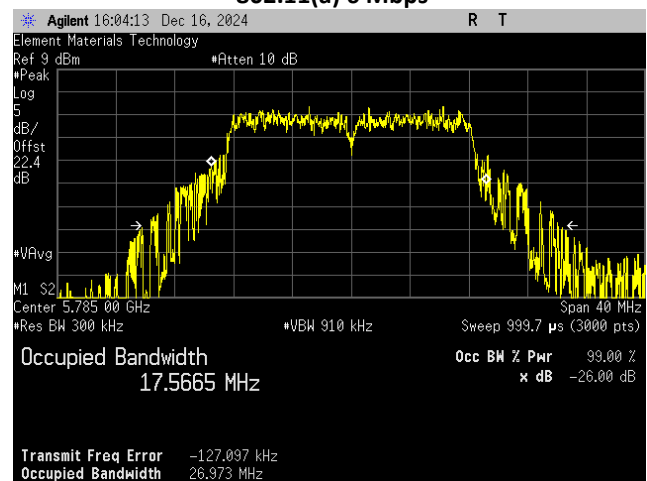
U-NII-3 Band (20MHz BW)
Ch 149 - 5745 MHz
802.11(n) MCS7



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 6 Mbps



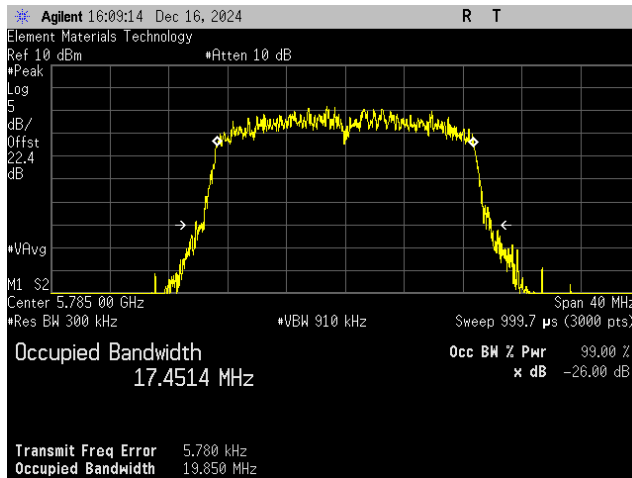
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 36 Mbps



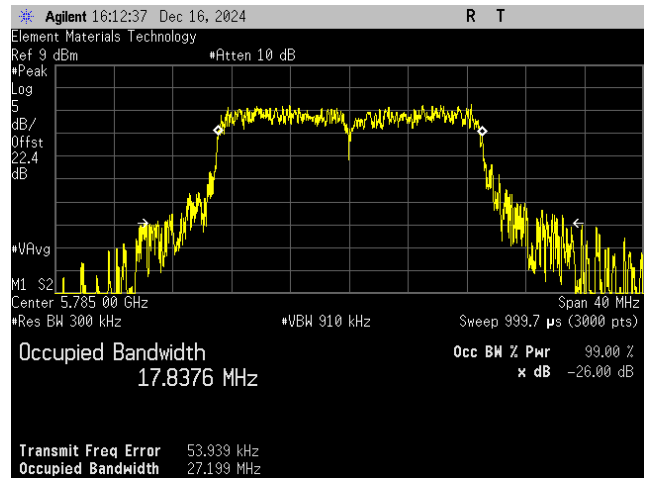
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(a) 54 Mbps

OCCUPIED BANDWIDTH

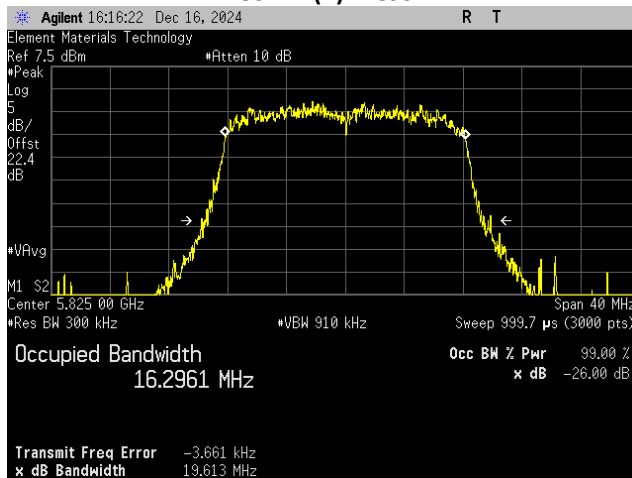
U-NII-3



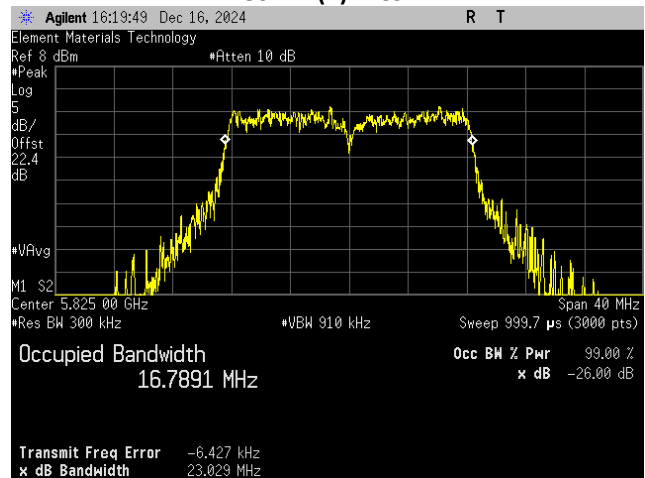
U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS0



U-NII-3 Band (20MHz BW)
Ch 157 - 5785 MHz
802.11(n) MCS7



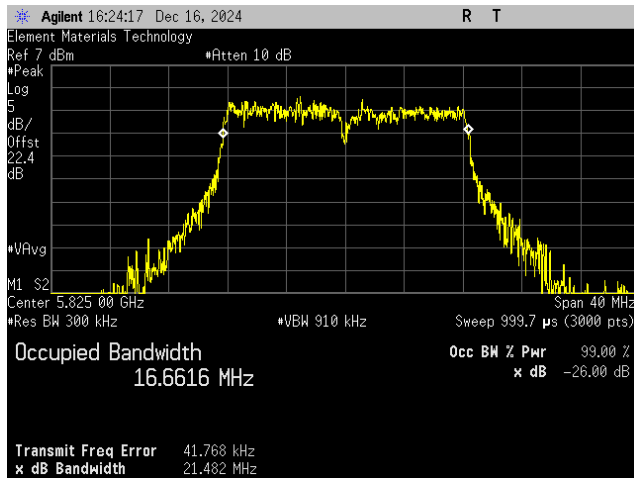
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 6 Mbps



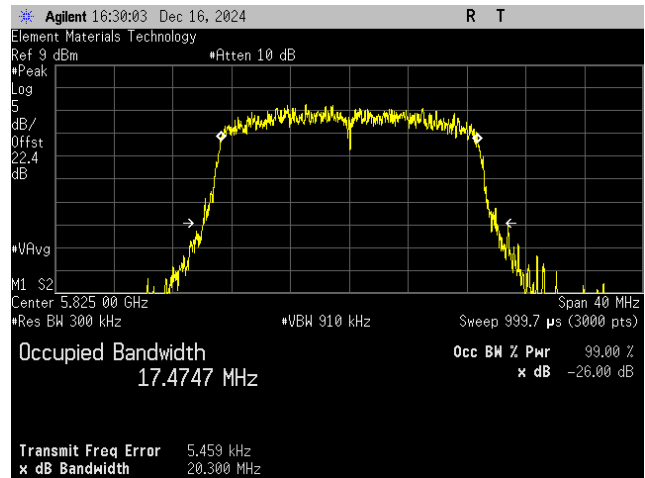
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 36 Mbps

OCCUPIED BANDWIDTH

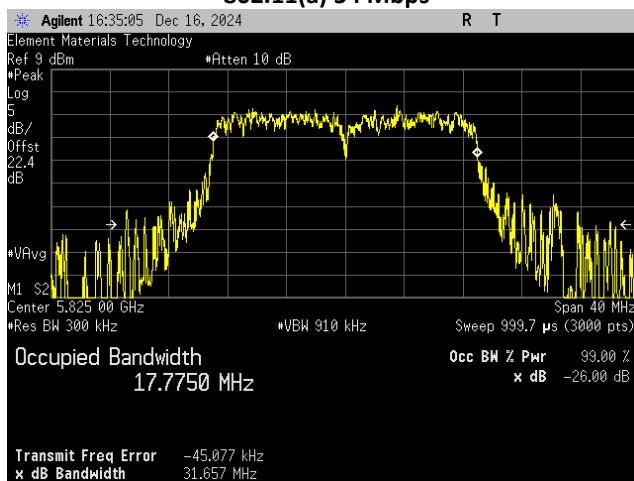
U-NII-3



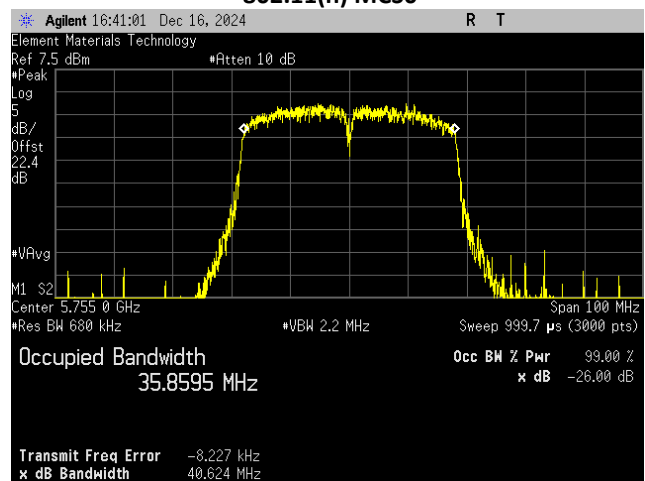
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(a) 54 Mbps



U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS0



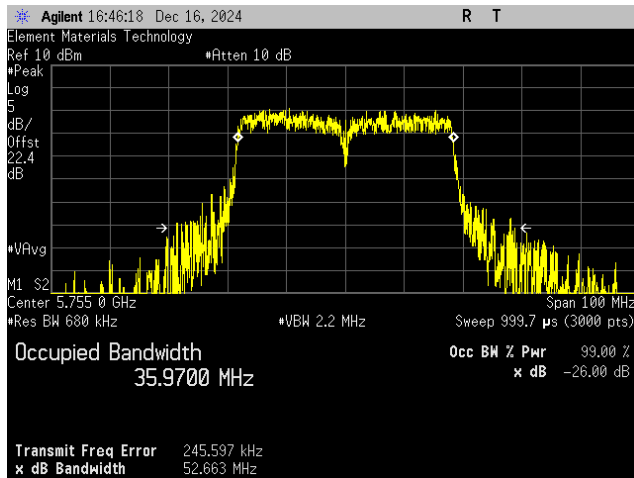
U-NII-3 Band (20MHz BW)
Ch 165 - 5825 MHz
802.11(n) MCS7



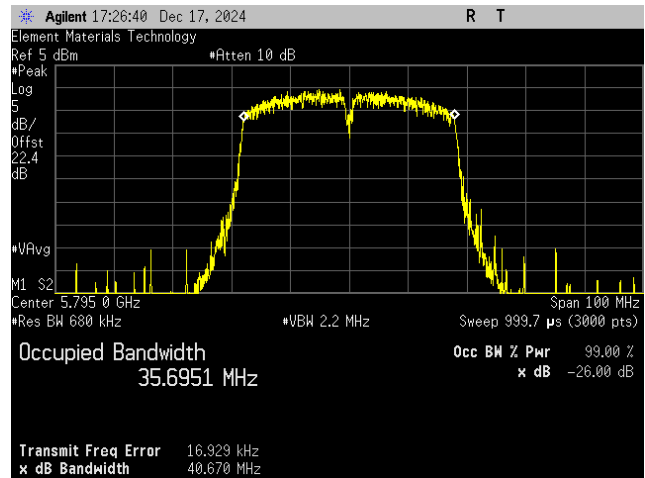
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS0

OCCUPIED BANDWIDTH

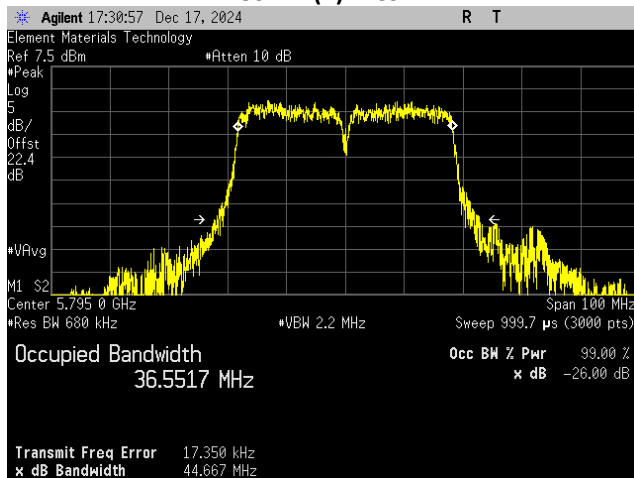
U-NII-3



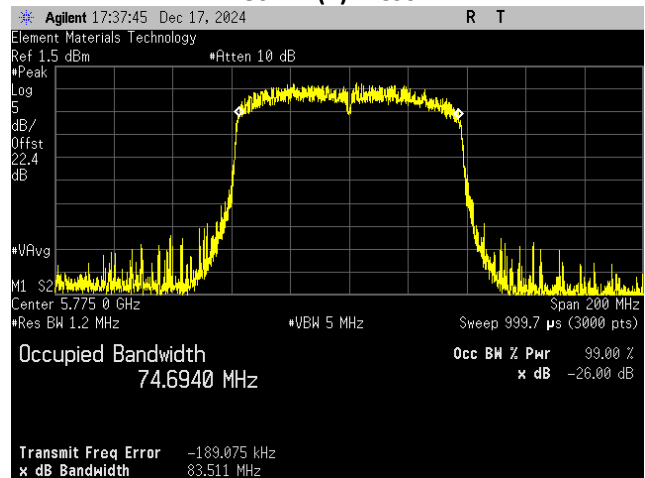
U-NII-3 Band (40MHz BW)
Ch 151 - 5755 MHz
802.11(n) MCS7



U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS0



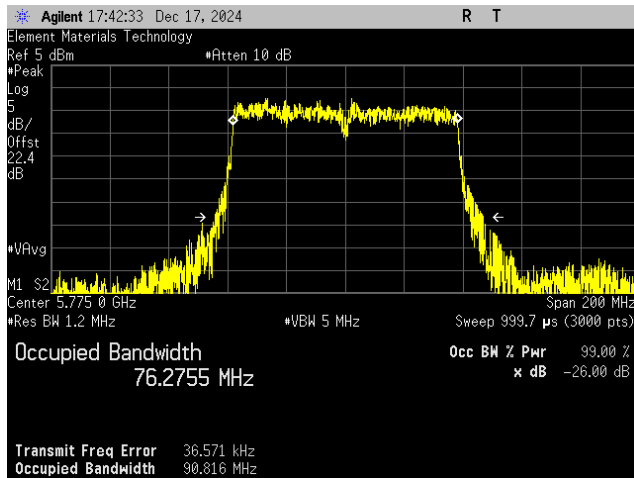
U-NII-3 Band (40MHz BW)
Ch 159 - 5795 MHz
802.11(n) MCS7



U-NII-3 Band (80MHz BW)
Ch 155 - 5775 MHz
802.11(ac) MCS0

OCCUPIED BANDWIDTH

U-NII-3



U-NII-3 Band (80MHz BW)

Ch 155 - 5775 MHz

802.11(ac) MCS9

SPURIOUS RADIATED EMISSIONS U-NII-1

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. A reference preview scan (pre-scan) is included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of $10 \cdot \log(1/dc)$.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Antenna - Double Ridge	ETS Lindgren	3115	AIR	2024-07-23	2026-07-23
Cable	Northwest EMC	1-8GHz RE Cables	OCJ	2024-05-08	2025-05-08
Amplifier - Pre-Amplifier	Cernex	CBL01084020-xx	PAX	2024-05-08	2025-05-08
Filter - Band Pass/Notch	Micro-Tronics	BRC50703	HHQ	2024-05-08	2025-05-08
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	2024-01-25	2025-01-25
Antenna - Standard Gain	ETS Lindgren	3160-07	AHR	NCR	NCR
Cable	Northwest EMC	8-18GHz RE Cables	OCO	2024-03-19	2025-03-19
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	2024-03-19	2025-03-19
Antenna - Standard Gain	ETS Lindgren	3160-08	AHT	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOF	2024-03-19	2025-03-19
Antenna - Standard Gain	ETS Lindgren	3160-09	AHN	NCR	NCR
Cable	Northwest EMC	18-26GHz RE Cables	OCH	2023-12-15	2024-12-15
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	2023-12-15	2024-12-15
Antenna - Standard Gain	ETS Lindgren	3160-10	AIX	NCR	NCR
Cable	ESM Cable Corp.	TTBJ141-KMKM-72	OC1	2023-12-18	2024-12-18
Amplifier - Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVQ	2023-12-18	2024-12-18
Antenna - Loop	EMCO	6502	AZB	2023-09-06	2025-09-06
Cable	Northwest EMC	10kHz-1GHz RE Cables	OCH	2024-05-09	2025-05-09

SPURIOUS RADIATED EMISSIONS U-NII-1

FREQUENCY RANGE INVESTIGATED

9 kHz TO 40 GHz

POWER INVESTIGATED

5VDC

CONFIGURATIONS INVESTIGATED

ORTH0035-1

MODES INVESTIGATED

Transmitting Wi-Fi U-NII-1, IEEE

- 802.11a, 20 MHz BW Ch: 36, 44, & 48, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 36, 44, & 48, 40 MHz BW Ch: 38 & 46, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 42, Data Rate: MCS0, MCS9

Transmitting Wi-Fi U-NII-1, IEEE

- 802.11a, 20 MHz BW Ch: 36, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 36, 40 MHz BW Ch: 38, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 42, Data Rate: MCS0, MCS9

SPURIOUS RADIATED EMISSIONS U-NII-1

EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-23
Customer:	OrthAlign	Temperature:	20.8°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.2%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	55	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

None

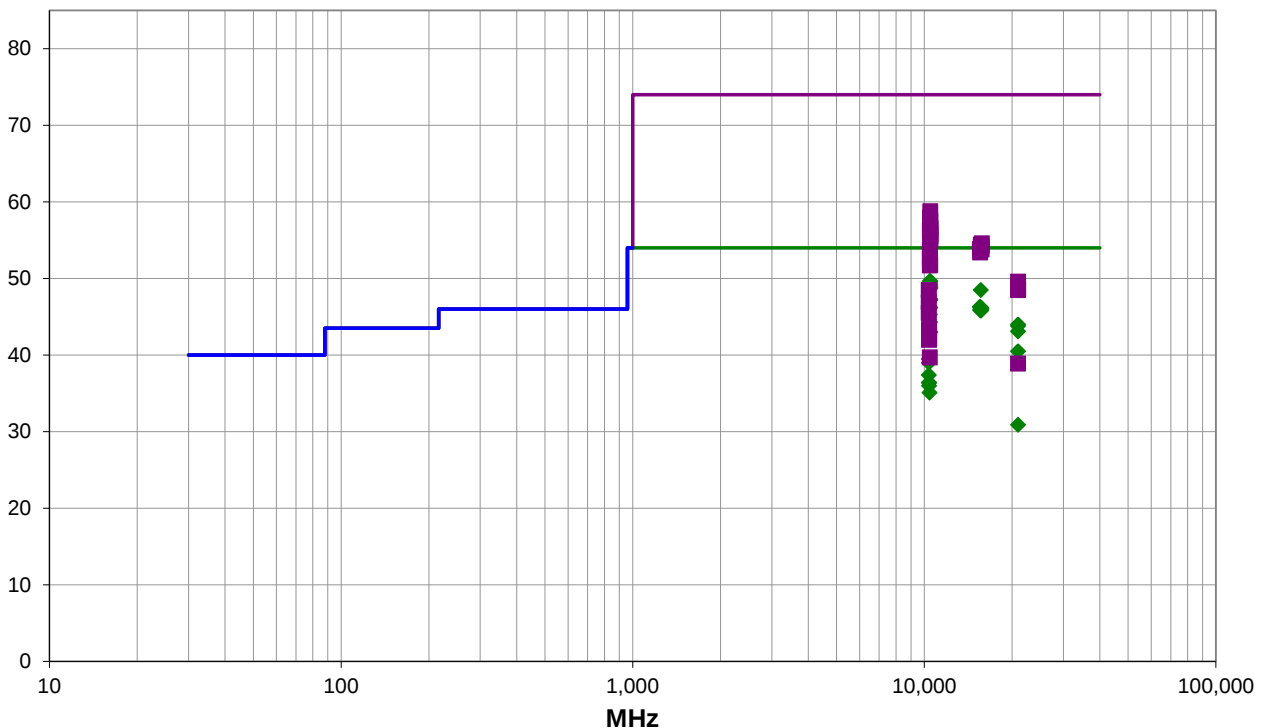
EUT OPERATING MODES

Transmitting Wi-Fi U-NII-1, IEEE

- 802.11a, 20 MHz BW Ch: 36, 44, & 48, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 36, 44, & 48, 40 MHz BW Ch: 38 & 46, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 42, Data Rate: MCS0, MCS9

DEVIATIONS FROM TEST STANDARD

None



Run #: 55

■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS U-NII-1

RESULTS - Run #55

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
10461.000	52.2	-5.3	1.7	2.0	2.8	0.0	Vert	AV	0.0	49.7	54.0	-4.3	Tx Ch 48, MCS7, Pwr 14, EUT Vert
10478.870	52.1	-5.3	1.7	360.0	2.8	0.0	Vert	AV	0.0	49.6	54.0	-4.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10461.300	52.1	-5.3	1.7	2.0	2.6	0.0	Vert	AV	0.0	49.4	54.0	-4.6	Tx Ch 46 (40 MHz BW), MCS0, Pwr 18, EUT Vert
10480.870	51.7	-5.3	2.2	359.0	2.8	0.0	Vert	AV	0.0	49.2	54.0	-4.8	Tx Ch 48, 54 Mbps, Pwr 14, EUT Vert
10479.670	51.5	-5.3	2.2	359.0	2.8	0.0	Vert	AV	0.0	49.0	54.0	-5.0	Tx Ch 48, 36 Mbps, Pwr 14, EUT Vert
10481.930	51.4	-5.3	2.2	359.0	2.8	0.0	Vert	AV	0.0	48.9	54.0	-5.1	Tx Ch 48, MCS0, Pwr 14, EUT Vert
10479.000	51.3	-5.3	1.9	346.0	2.8	0.0	Horz	AV	0.0	48.8	54.0	-5.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10481.400	51.2	-5.3	2.2	359.0	2.8	0.0	Vert	AV	0.0	48.7	54.0	-5.3	Tx Ch 48, MCS7, Pwr 14, EUT Vert
15613.800	28.9	14.4	3.0	90.0	5.2	0.0	Vert	AV	0.0	48.5	54.0	-5.5	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
10482.470	49.8	-5.3	2.2	309.0	2.8	0.0	Vert	AV	0.0	47.3	54.0	-6.7	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10482.400	49.7	-5.3	1.8	9.0	2.8	0.0	Horz	AV	0.0	47.2	54.0	-6.8	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
15518.250	29.4	14.1	1.5	151.0	2.8	0.0	Vert	AV	0.0	46.3	54.0	-7.7	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
15517.250	29.4	14.1	1.5	151.0	2.8	0.0	Vert	AV	0.0	46.3	54.0	-7.7	Tx Ch 36, MCS0, Pwr 10, EUT Vert
15643.000	28.8	14.6	1.3	114.0	2.8	0.0	Vert	AV	0.0	46.2	54.0	-7.8	Tx Ch 44, 6 Mbps, Pwr 13, EUT Vert
10479.130	48.7	-5.3	3.6	106.0	2.8	0.0	Vert	AV	0.0	46.2	54.0	-7.8	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
15613.830	28.9	14.4	1.5	203.0	2.8	0.0	Vert	AV	0.0	46.1	54.0	-7.9	Tx Ch 44, MCS0, Pwr 13, EUT Vert
15697.080	28.4	14.9	1.5	0.0	2.8	0.0	Vert	AV	0.0	46.1	54.0	-7.9	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
15674.670	28.5	14.7	1.5	84.0	2.8	0.0	Vert	AV	0.0	46.0	54.0	-8.0	Tx Ch 48, MCS0, Pwr 14, EUT Vert
15522.500	29.2	14.1	1.5	327.0	2.6	0.0	Vert	AV	0.0	45.9	54.0	-8.1	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
15641.000	28.6	14.6	1.7	257.0	2.6	0.0	Vert	AV	0.0	45.8	54.0	-8.2	Tx Ch 46 (40 MHz BW), MCS0, Pwr 18, EUT Vert
10442.470	47.9	-5.4	1.7	341.0	2.8	0.0	Vert	AV	0.0	45.3	54.0	-8.7	Tx Ch 44, 6 Mbps, Pwr 13, EUT Vert
10441.130	46.9	-5.4	2.2	359.0	2.8	0.0	Vert	AV	0.0	44.3	54.0	-9.7	Tx Ch 44, MCS0, Pwr 13, EUT Vert
10442.330	46.9	-5.4	2.5	341.0	2.8	0.0	Vert	AV	0.0	44.3	54.0	-9.7	Tx Ch 44, MCS0, Pwr 13, EUT Vert
20960.120	40.1	1.1	1.2	304.0	2.8	0.0	Horz	AV	0.0	44.0	54.0	-10.0	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
20960.120	39.9	1.1	1.2	337.0	2.8	0.0	Vert	AV	0.0	43.8	54.0	-10.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
20960.080	39.2	1.1	1.2	1.0	2.8	0.0	Horz	AV	0.0	43.1	54.0	-10.9	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10480.670	45.5	-5.3	3.2	192.0	2.8	0.0	Horz	AV	0.0	43.0	54.0	-11.0	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
20960.330	36.6	1.1	1.2	67.0	2.8	0.0	Vert	AV	0.0	40.5	54.0	-13.5	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10362.470	42.3	-5.6	2.5	351.0	2.8	0.0	Vert	AV	0.0	39.5	54.0	-14.5	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
10362.470	41.8	-5.6	1.7	341.0	2.8	0.0	Vert	AV	0.0	39.0	54.0	-15.0	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
10477.600	64.1	-5.3	1.7	360.0	0.0	0.0	Vert	PK	0.0	58.8	74.0	-15.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10460.700	63.3	-5.3	1.7	2.0	0.0	0.0	Vert	PK	0.0	58.0	74.0	-16.0	Tx Ch 48, MCS7, Pwr 14, EUT Vert
10477.870	63.0	-5.3	1.9	346.0	0.0	0.0	Horz	PK	0.0	57.7	74.0	-16.3	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10359.730	40.2	-5.6	2.5	351.0	2.8	0.0	Vert	AV	0.0	37.4	54.0	-16.6	Tx Ch 36, MCS0, Pwr 10, EUT Vert
10479.930	62.7	-5.3	2.2	359.0	0.0	0.0	Vert	PK	0.0	57.4	74.0	-16.6	Tx Ch 48, 54 Mbps, Pwr 14, EUT Vert
10480.870	62.0	-5.3	2.2	359.0	0.0	0.0	Vert	PK	0.0	56.7	74.0	-17.3	Tx Ch 48, MCS0, Pwr 14, EUT Vert
10482.000	61.9	-5.3	2.2	359.0	0.0	0.0	Vert	PK	0.0	56.6	74.0	-17.4	Tx Ch 48, MCS7, Pwr 14, EUT Vert
10378.700	36.7	-5.5	2.3	351.0	5.2	0.0	Vert	AV	0.0	36.4	54.0	-17.6	Tx Ch 42 (80 MHz BW), MCS8, Pwr 8, EUT Vert
10379.000	36.7	-5.5	2.3	351.0	5.2	0.0	Vert	AV	0.0	36.4	54.0	-17.6	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
10456.700	61.6	-5.3	1.7	2.0	0.0	0.0	Vert	PK	0.0	56.3	74.0	-17.7	Tx Ch 46 (40 MHz BW), MCS0, Pwr 18, EUT Vert

SPURIOUS RADIATED EMISSIONS U-NII-1

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
10480.670	61.5	-5.3	2.2	359.0	0.0	0.0	Vert	PK	0.0	56.2	74.0	-17.8	Tx Ch 48, 36 Mbps, Pwr 14, EUT Vert
10381.300	38.9	-5.5	2.0	14.0	2.6	0.0	Vert	AV	0.0	36.0	54.0	-18.0	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
10486.130	61.1	-5.3	2.2	309.0	0.0	0.0	Vert	PK	0.0	55.8	74.0	-18.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10485.800	60.8	-5.3	1.8	9.0	0.0	0.0	Horz	PK	0.0	55.5	74.0	-18.5	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10419.700	35.4	-5.5	2.3	351.0	5.2	0.0	Vert	AV	0.0	35.1	54.0	-18.9	Tx Ch 42 (80 MHz BW), MCS0, Pwr 8, EUT Vert
10486.200	60.3	-5.3	3.6	106.0	0.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
15727.580	39.6	15.0	1.5	0.0	0.0	0.0	Vert	PK	0.0	54.6	74.0	-19.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
15635.420	39.9	14.5	1.3	114.0	0.0	0.0	Vert	PK	0.0	54.4	74.0	-19.6	Tx Ch 44, 6 Mbps, Pwr 13, EUT Vert
15699.000	39.4	14.9	1.5	203.0	0.0	0.0	Vert	PK	0.0	54.3	74.0	-19.7	Tx Ch 44, MCS0, Pwr 13, EUT Vert
15707.000	39.3	14.9	1.5	84.0	0.0	0.0	Vert	PK	0.0	54.2	74.0	-19.8	Tx Ch 48, MCS0, Pwr 14, EUT Vert
15566.330	39.7	14.2	1.5	327.0	0.0	0.0	Vert	PK	0.0	53.9	74.0	-20.1	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
15520.580	39.7	14.1	1.5	151.0	0.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
15621.000	39.3	14.5	3.0	90.0	0.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
10446.000	59.2	-5.4	1.7	341.0	0.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Tx Ch 44, 6 Mbps, Pwr 13, EUT Vert
15715.670	38.9	14.9	1.7	257.0	0.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Tx Ch 46 (40 MHz BW), MCS0, Pwr 18, EUT Vert
15533.500	39.3	14.1	1.5	151.0	0.0	0.0	Vert	PK	0.0	53.4	74.0	-20.6	Tx Ch 36, MCS0, Pwr 10, EUT Vert
10440.530	58.0	-5.4	2.5	341.0	0.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4	Tx Ch 44, MCS0, Pwr 13, EUT Vert
10477.270	57.1	-5.3	3.2	192.0	0.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
10443.270	57.1	-5.4	2.2	359.0	0.0	0.0	Vert	PK	0.0	51.7	74.0	-22.3	Tx Ch 44, MCS0, Pwr 13, EUT Vert
20958.730	27.0	1.1	1.2	297.0	2.8	0.0	Vert	AV	0.0	30.9	54.0	-23.1	Tx Ch 48, MCS7, Pwr 14, EUT Vert
20960.170	48.5	1.1	1.2	304.0	0.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
20966.080	47.6	1.1	1.2	67.0	0.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
20959.540	47.5	1.1	1.2	1.0	0.0	0.0	Horz	PK	0.0	48.6	74.0	-25.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10357.470	54.1	-5.6	2.5	351.0	0.0	0.0	Vert	PK	0.0	48.5	74.0	-25.5	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
20960.210	47.4	1.1	1.2	337.0	0.0	0.0	Vert	PK	0.0	48.5	74.0	-25.5	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10366.130	52.5	-5.6	1.7	341.0	0.0	0.0	Vert	PK	0.0	46.9	74.0	-27.1	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
10365.470	51.1	-5.6	2.5	351.0	0.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	Tx Ch 36, MCS0, Pwr 10, EUT Vert
10381.000	48.9	-5.5	2.3	351.0	0.0	0.0	Vert	PK	0.0	43.4	74.0	-30.6	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
10375.700	47.8	-5.5	2.0	14.0	0.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
10384.700	47.5	-5.5	2.3	351.0	0.0	0.0	Vert	PK	0.0	42.0	74.0	-32.0	Tx Ch 42 (80 MHz BW), MCS8, Pwr 8, EUT Vert
10445.000	45.1	-5.4	2.3	351.0	0.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	Tx Ch 42 (80 MHz BW), MCS0, Pwr 8, EUT Vert
20960.330	37.8	1.1	1.2	297.0	0.0	0.0	Vert	PK	0.0	38.9	74.0	-35.1	Tx Ch 48, MCS7, Pwr 14, EUT Vert

CONCLUSION

Pass



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-1

EUT:	Lantern Surgical Assistant Reusable	Work Order:	ORTH0035
Serial Number:	See Configurations	Date:	2024-10-23
Customer:	OrthAlign	Temperature:	20.8°C
Attendees:	Steven Devinentis, Kian Gholizadeh	Relative Humidity:	46.2%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	55	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

None

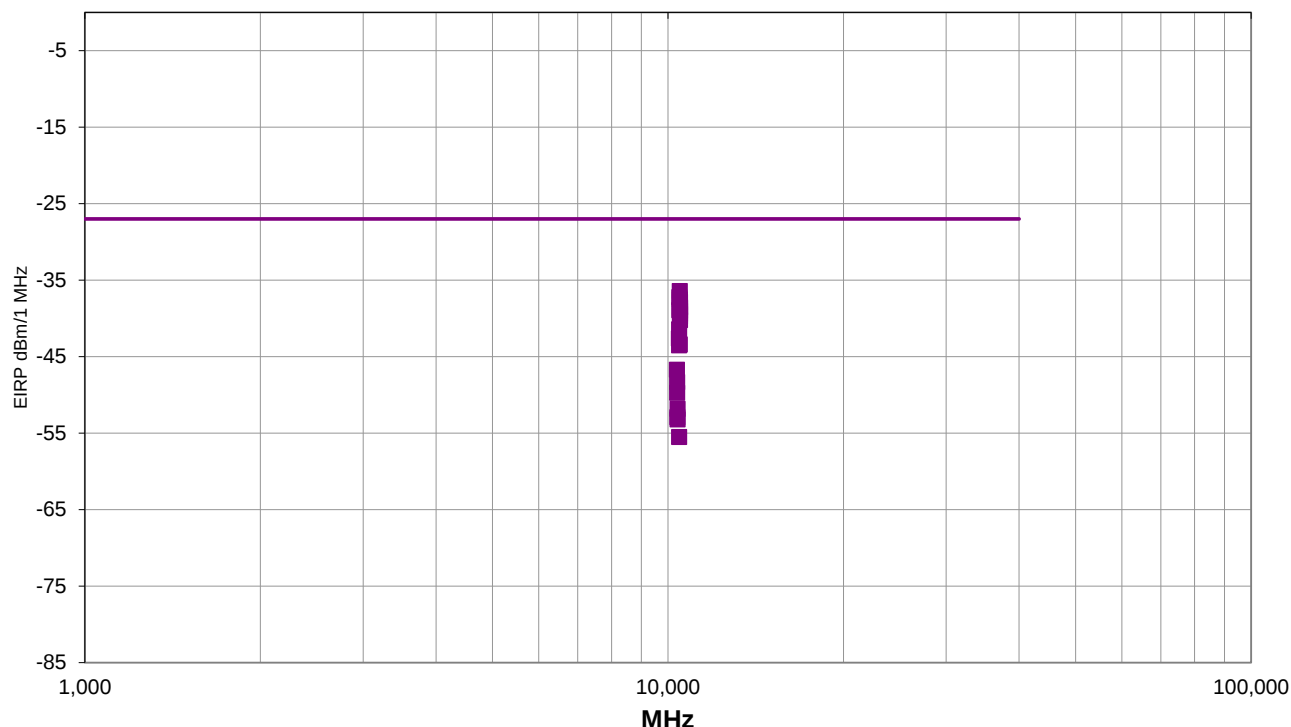
EUT OPERATING MODES

Transmitting Wi-Fi U-NII-1, IEEE

- 802.11a, 20 MHz BW Ch: 36, 44, & 48, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 36, 44, & 48, 40 MHz BW Ch: 38 & 46, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 42, Data Rate: MCS0, MCS9

DEVIATIONS FROM TEST STANDARD

None



Run #: 55

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-1

RESULTS - Run #55

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
10477.600	1.7	360.0	Vert	PK	227.6E-9	-36.4	-27.0	-9.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10460.700	1.7	2.0	Vert	PK	189.3E-9	-37.2	-27.0	-10.2	Tx Ch 48, MCS7, Pwr 14, EUT Vert
10477.870	1.9	346.0	Horz	PK	176.7E-9	-37.5	-27.0	-10.5	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10479.930	2.2	359.0	Vert	PK	164.9E-9	-37.8	-27.0	-10.8	Tx Ch 48, 54 Mbps, Pwr 14, EUT Vert
10480.870	2.2	359.0	Vert	PK	140.3E-9	-38.5	-27.0	-11.5	Tx Ch 48, MCS0, Pwr 14, EUT Vert
10482.000	2.2	359.0	Vert	PK	137.1E-9	-38.6	-27.0	-11.6	Tx Ch 48, MCS7, Pwr 14, EUT Vert
10456.700	1.7	2.0	Vert	PK	128.0E-9	-38.9	-27.0	-11.9	Tx Ch 46 (40 MHz BW), MCS0, Pwr 18, EUT Vert
10480.670	2.2	359.0	Vert	PK	125.1E-9	-39.0	-27.0	-12.0	Tx Ch 48, 36 Mbps, Pwr 14, EUT Vert
10486.130	2.2	309.0	Vert	PK	114.1E-9	-39.4	-27.0	-12.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT on Side
10485.800	1.8	9.0	Horz	PK	106.4E-9	-39.7	-27.0	-12.7	Tx Ch 48, 6 Mbps, Pwr 14, EUT Vert
10486.200	3.6	106.0	Vert	PK	94.9E-9	-40.2	-27.0	-13.2	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
10446.000	1.7	341.0	Vert	PK	72.0E-9	-41.4	-27.0	-14.4	Tx Ch 44, 6 Mbps, Pwr 13, EUT Vert
10440.530	2.5	341.0	Vert	PK	54.6E-9	-42.6	-27.0	-15.6	Tx Ch 44, MCS0, Pwr 13, EUT Vert
10477.270	3.2	192.0	Horz	PK	45.4E-9	-43.4	-27.0	-16.4	Tx Ch 48, 6 Mbps, Pwr 14, EUT Horz
10443.270	2.2	359.0	Vert	PK	44.4E-9	-43.5	-27.0	-16.5	Tx Ch 44, MCS0, Pwr 13, EUT Vert
10357.470	2.5	351.0	Vert	PK	21.2E-9	-46.7	-27.0	-19.7	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
10366.130	1.7	341.0	Vert	PK	14.7E-9	-48.3	-27.0	-21.3	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
10365.470	2.5	351.0	Vert	PK	10.6E-9	-49.7	-27.0	-22.7	Tx Ch 36, MCS0, Pwr 10, EUT Vert
10381.000	2.3	351.0	Vert	PK	6.6E-9	-51.8	-27.0	-24.8	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
10375.700	2.0	14.0	Vert	PK	5.1E-9	-52.9	-27.0	-25.9	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
10384.700	2.3	351.0	Vert	PK	4.8E-9	-53.2	-27.0	-26.2	Tx Ch 42 (80 MHz BW), MCS8, Pwr 8, EUT Vert
10445.000	2.3	351.0	Vert	PK	2.8E-9	-55.5	-27.0	-28.5	Tx Ch 42 (80 MHz BW), MCS0, Pwr 8, EUT Vert

CONCLUSION

Pass



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-1

EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-23
Customer:	OrthAlign	Temperature:	20.8°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.2%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024, FCC 15.205:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	57	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

A duty cycle correction is added to the measurements using the formula of $10 \cdot \log(1/dc)$ using worst case duty cycle (dc): 0.731

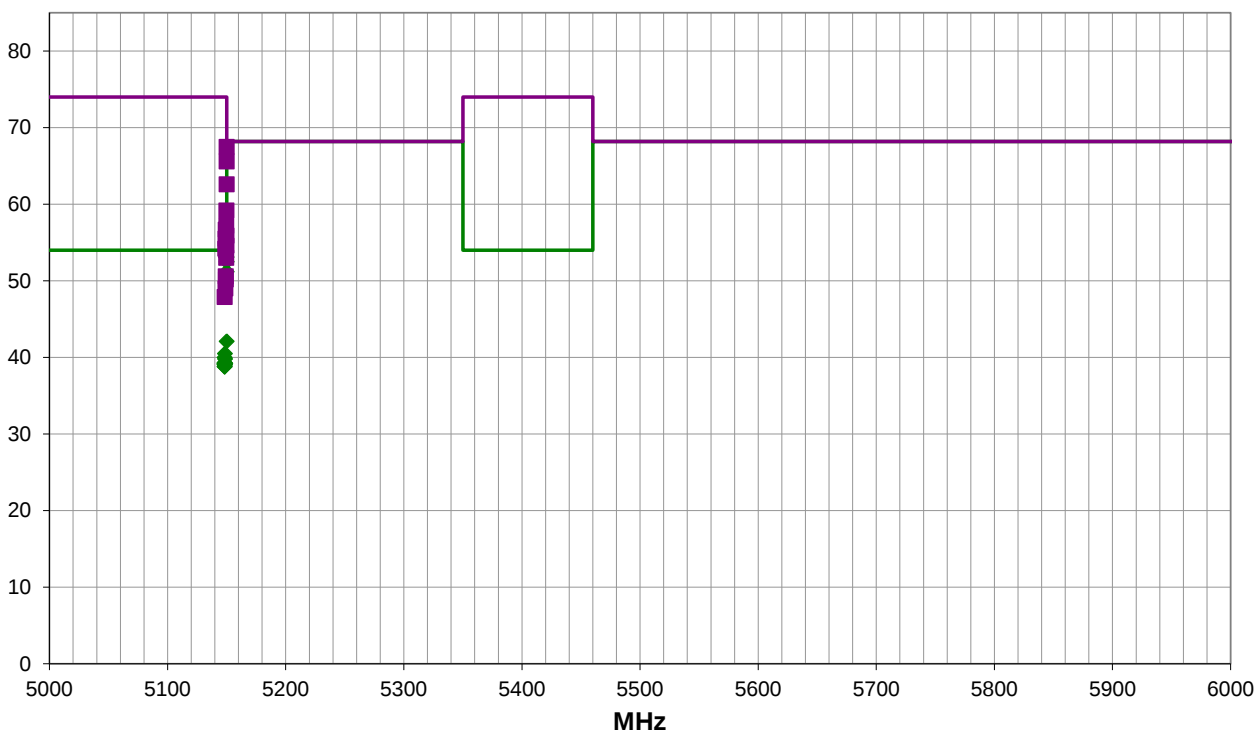
EUT OPERATING MODES

Transmitting Wi-Fi U-NII-1, IEEE

- 802.11a, 20 MHz BW Ch: 36, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 36, 40 MHz BW Ch: 38, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 42, Data Rate: MCS0, MCS9

DEVIATIONS FROM TEST STANDARD

None



Run #: 57

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-1

RESULTS - Run #57

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5149.943	51.5	-3.6	1.5	285.0	5.2	0.0	Horz	AV	0.0	53.1	54.0	-0.9	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
5149.990	50.9	-3.6	1.5	285.0	5.2	0.0	Horz	AV	0.0	52.5	54.0	-1.5	Tx Ch 42 (80 MHz BW), MCS8, Pwr 8, EUT Vert
5150.000	49.6	-3.6	1.5	285.0	5.2	0.0	Horz	AV	0.0	51.2	54.0	-2.8	Tx Ch 42 (80 MHz BW), MCS0, Pwr 8, EUT Vert
5149.973	71.1	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	67.5	74.0	-6.5	Tx Ch 42 (80 MHz BW), MCS8, Pwr 8, EUT Vert
5149.947	69.2	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	65.6	74.0	-8.4	Tx Ch 42 (80 MHz BW), MCS9, Pwr 8, EUT Vert
5149.983	66.2	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	62.6	74.0	-11.4	Tx Ch 42 (80 MHz BW), MCS0, Pwr 8, EUT Vert
5149.990	43.1	-3.6	1.5	285.0	2.6	0.0	Horz	AV	0.0	42.1	54.0	-11.9	Tx Ch 38 (40 MHz BW), MCS7, Pwr 11, EUT Vert
5148.510	41.3	-3.6	1.3	49.0	2.8	0.0	Horz	AV	0.0	40.5	54.0	-13.5	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
5148.250	40.8	-3.6	2.7	70.0	2.8	0.0	Horz	AV	0.0	40.0	54.0	-14.0	Tx Ch 36, 6 Mbps, Pwr 11, EUT Horz
5148.640	40.6	-3.6	1.2	331.0	2.8	0.0	Vert	AV	0.0	39.8	54.0	-14.2	Tx Ch 36, 6 Mbps, Pwr 11, EUT on Side
5148.167	40.1	-3.6	1.5	285.0	2.8	0.0	Horz	AV	0.0	39.3	54.0	-14.7	Tx Ch 36, 36 Mbps, Pwr 11, EUT Vert
5148.457	40.1	-3.6	1.5	105.0	2.8	0.0	Vert	AV	0.0	39.3	54.0	-14.7	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
5149.737	62.8	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	59.2	74.0	-14.8	Tx Ch 38 (40 MHz BW), MCS7, Pwr 11, EUT Vert
5148.140	40.0	-3.6	1.5	285.0	2.8	0.0	Horz	AV	0.0	39.2	54.0	-14.8	Tx Ch 36, 54 Mbps, Pwr 11, EUT Vert
5148.777	40.0	-3.6	1.5	285.0	2.8	0.0	Horz	AV	0.0	39.2	54.0	-14.8	Tx Ch 36, MCS7, Pwr 10, EUT Vert
5148.457	40.1	-3.6	1.5	285.0	2.6	0.0	Horz	AV	0.0	39.1	54.0	-14.9	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
5148.103	39.9	-3.6	1.5	326.0	2.8	0.0	Vert	AV	0.0	39.1	54.0	-14.9	Tx Ch 36, 6 Mbps, Pwr 11, EUT Horz
5148.370	39.8	-3.6	1.5	285.0	2.8	0.0	Horz	AV	0.0	39.0	54.0	-15.0	Tx Ch 36, ac, MCS0, Pwr 10, EUT Vert
5148.213	39.6	-3.6	1.5	28.0	2.8	0.0	Horz	AV	0.0	38.8	54.0	-15.2	Tx Ch 36, 6 Mbps, Pwr 11, EUT on Side
5148.303	39.6	-3.6	1.5	285.0	2.8	0.0	Horz	AV	0.0	38.8	54.0	-15.2	Tx Ch 36, MCS0, Pwr 10, EUT Vert
5149.693	60.8	-3.6	2.7	70.0	0.0	0.0	Horz	PK	0.0	57.2	74.0	-16.8	Tx Ch 36, 6 Mbps, Pwr 11, EUT Horz
5149.097	60.3	-3.6	1.3	49.0	0.0	0.0	Horz	PK	0.0	56.7	74.0	-17.3	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
5149.827	59.5	-3.6	1.2	331.0	0.0	0.0	Vert	PK	0.0	55.9	74.0	-18.1	Tx Ch 36, 6 Mbps, Pwr 11, EUT on Side
5149.027	59.1	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	55.5	74.0	-18.5	Tx Ch 38 (40 MHz BW), MCS0, Pwr 11, EUT Vert
5149.813	58.2	-3.6	1.5	326.0	0.0	0.0	Vert	PK	0.0	54.6	74.0	-19.4	Tx Ch 36, 6 Mbps, Pwr 11, EUT Horz
5148.827	57.8	-3.6	1.5	105.0	0.0	0.0	Vert	PK	0.0	54.2	74.0	-19.8	Tx Ch 36, 6 Mbps, Pwr 11, EUT Vert
5149.307	57.6	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	Tx Ch 36, MCS0, Pwr 10, EUT Vert
5149.557	56.6	-3.6	1.5	28.0	0.0	0.0	Horz	PK	0.0	53.0	74.0	-21.0	Tx Ch 36, 6 Mbps, Pwr 11, EUT on Side
5149.237	54.2	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	Tx Ch 36, MCS7, Pwr 10, EUT Vert
5149.333	53.8	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	Tx Ch 36, ac, MCS0, Pwr 10, EUT Vert
5148.927	52.6	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	Tx Ch 36, 36 Mbps, Pwr 11, EUT Vert
5148.320	51.5	-3.6	1.5	285.0	0.0	0.0	Horz	PK	0.0	47.9	74.0	-26.1	Tx Ch 36, 54 Mbps, Pwr 11, EUT Vert

CONCLUSION

Pass

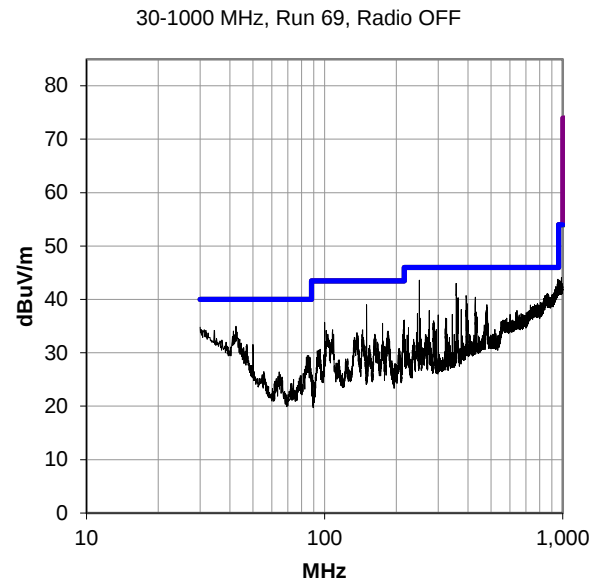
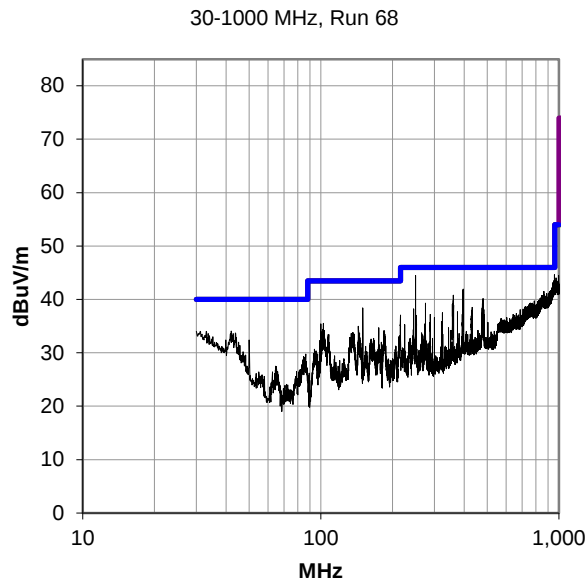
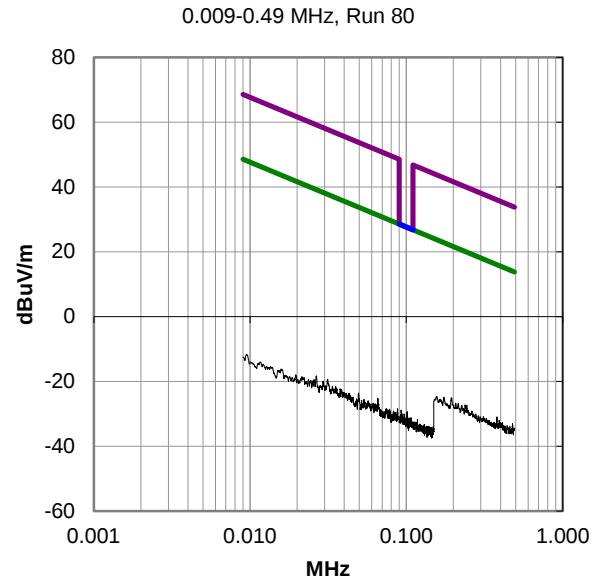
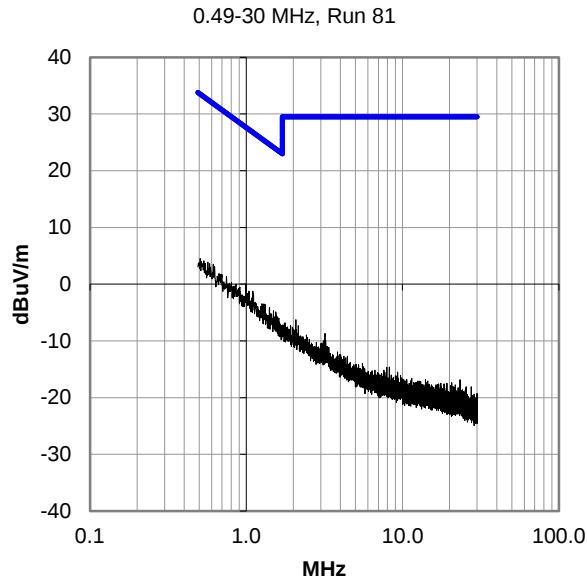


Tested By

SPURIOUS RADIATED EMISSIONS U-NII-1

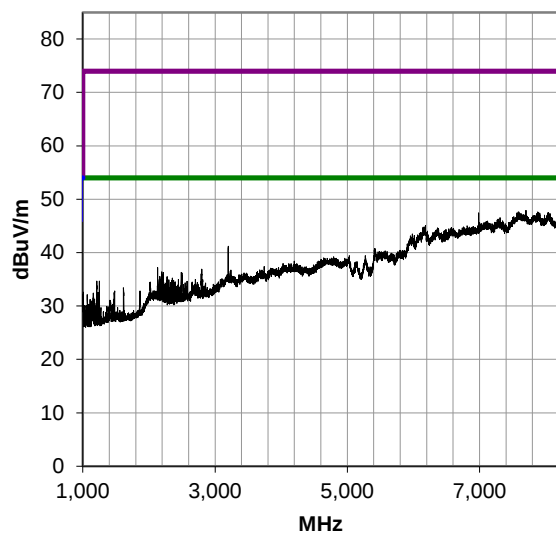
PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.

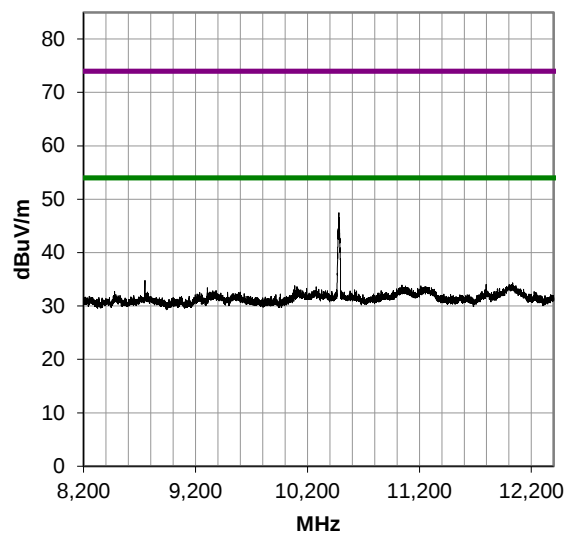


SPURIOUS RADIATED EMISSIONS U-NII-1

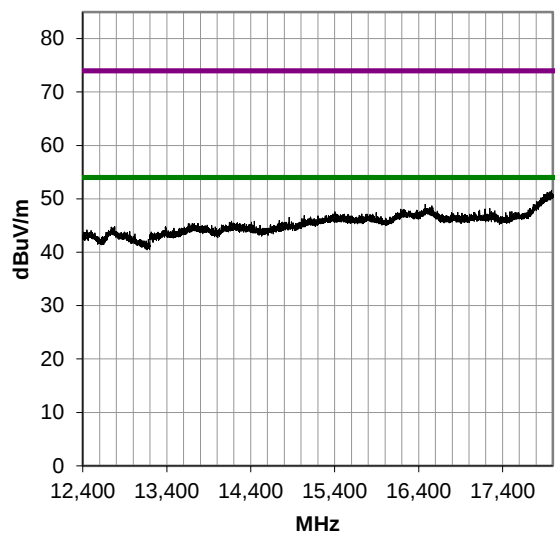
1000-8200 MHz, Run 36



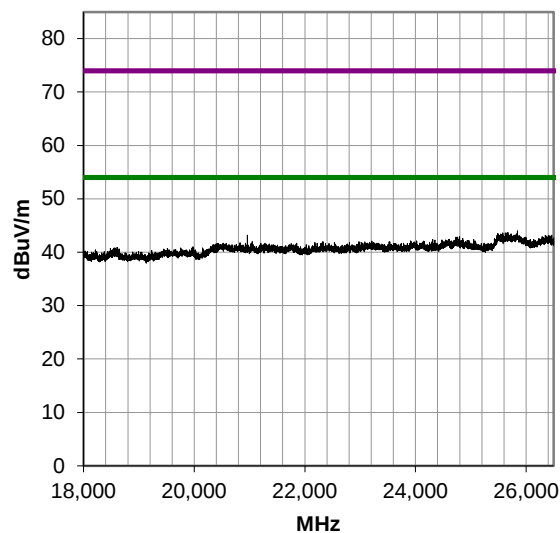
8200-12400 MHz, Run 55



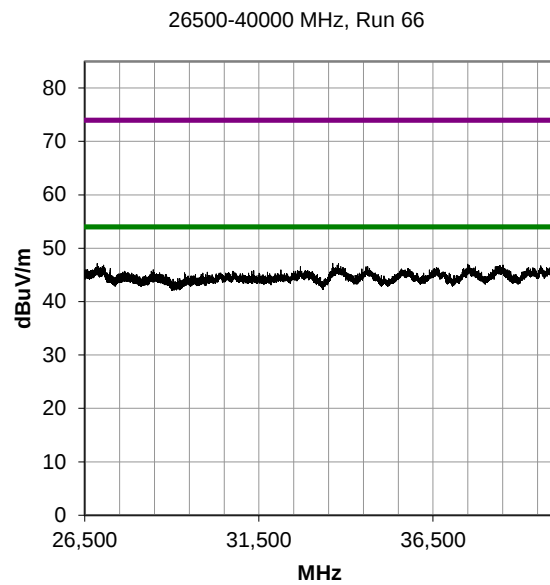
12400-18000 MHz, Run 38



18000-26500 MHz, Run 65



SPURIOUS RADIATED EMISSIONS U-NII-1



SPURIOUS RADIATED EMISSIONS U-NII-3

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. A reference preview scan (pre-scan) is included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of $10 \cdot \log(1/dc)$.

SPURIOUS RADIATED EMISSIONS U-NII-3

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Antenna - Double Ridge	ETS Lindgren	3115	AIR	2024-07-23	2026-07-23
Cable	Northwest EMC	1-8GHz RE Cables	OCJ	2024-05-08	2025-05-08
Amplifier - Pre-Amplifier	Cernex	CBL01084020-xx	PAX	2024-05-08	2025-05-08
Filter - Band Pass/Notch	Micro-Tronics	BRC50703	HHQ	2024-05-08	2025-05-08
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	2024-01-25	2025-01-25
Antenna - Standard Gain	ETS Lindgren	3160-07	AHR	NCR	NCR
Cable	Northwest EMC	8-18GHz RE Cables	OCO	2024-03-19	2025-03-19
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	2024-03-19	2025-03-19
Antenna - Standard Gain	ETS Lindgren	3160-08	AHT	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOF	2024-03-19	2025-03-19
Antenna - Standard Gain	ETS Lindgren	3160-09	AHN	NCR	NCR
Cable	Northwest EMC	18-26GHz RE Cables	OCK	2023-12-15	2024-12-15
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	2023-12-15	2024-12-15
Antenna - Standard Gain	ETS Lindgren	3160-10	AIX	NCR	NCR
Cable	ESM Cable Corp.	TTBJ141-KMKM-72	OC1	2023-12-18	2024-12-18
Amplifier - Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVQ	2023-12-18	2024-12-18
Antenna - Loop	EMCO	6502	AZB	2023-09-06	2025-09-06
Cable	Northwest EMC	10kHz-1GHz RE Cables	OCH	2024-05-09	2025-05-09
Antenna - Double Ridge	EMCO	3115	AHE	2024-09-11	2026-09-11
Power Sensor	Agilent	E4412A	SQE	2024-12-04	2025-12-04
Meter - Power	Hewlett Packard	E4418A	SPA	2024-12-04	2025-12-04

FREQUENCY RANGE INVESTIGATED

9 kHz TO 40 GHz

POWER INVESTIGATED

5VDC

CONFIGURATIONS INVESTIGATED

ORTH0035-1

MODES INVESTIGATED

Transmitting Wi-Fi U-NII-3, IEEE

- 802.11a, 20 MHz BW Ch: 149, 157, & 165, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 149, 157, & 165, 40 MHz BW Ch: 151, & 159, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 155, Data Rate: MCS0, MCS9

Transmitting Wi-Fi U-NII-3, IEEE 802.11a, Ch 149, 5745 MHz, 6 Mbps

Transmitting Wi-Fi U-NII-3, IEEE 802.11a, Ch 165, 5825 MHz, 6 Mbps

Transmitting Wi-Fi U-NII-3, IEEE 802.11ac, Ch 155 (80 MHz BW), 5775 MHz, MCS7

Transmitting Wi-Fi U-NII-3, IEEE 802.11n, Ch 151 (40 MHz BW), 5755 MHz, MCS7

Transmitting Wi-Fi U-NII-3, IEEE 802.11n, Ch 159 (40 MHz BW), 5795 MHz, MCS7

SPURIOUS RADIATED EMISSIONS U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-22
Customer:	OrthAlign	Temperature:	21°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	44.7%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	48	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

None

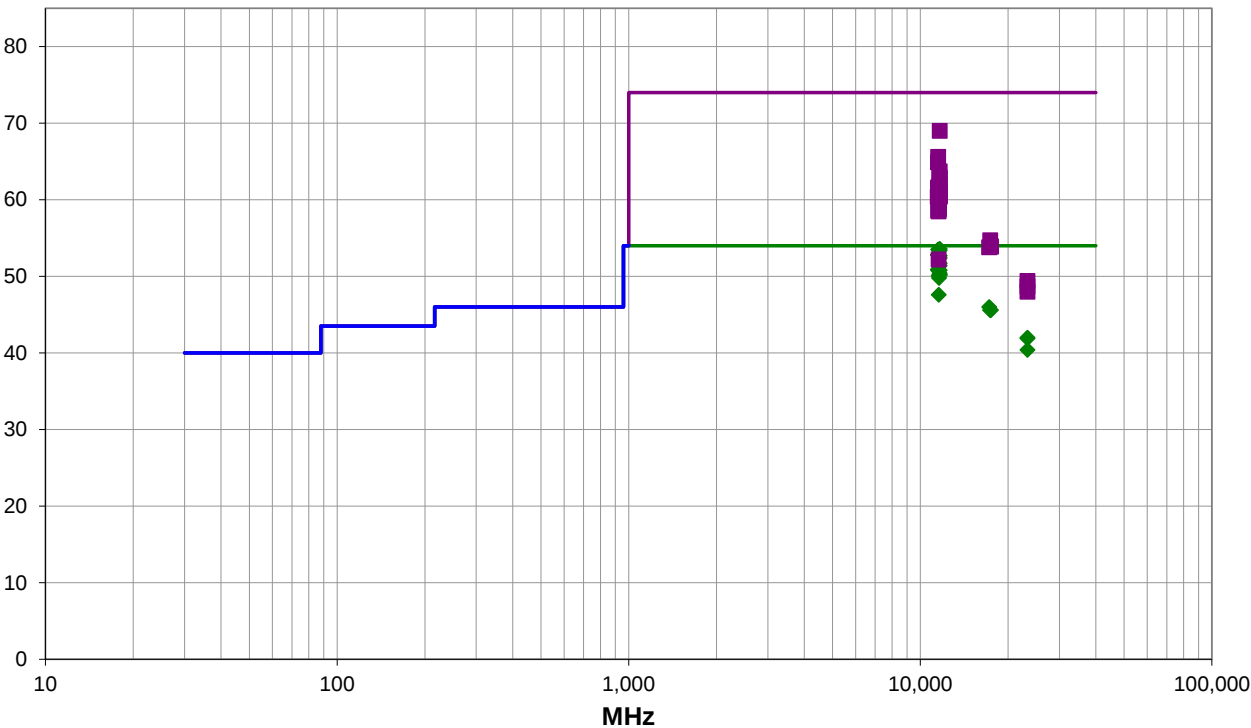
EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE

- 802.11a, 20 MHz BW Ch: 149, 157, & 165, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 149, 157, & 165, 40 MHz BW Ch: 151, & 159, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 155, Data Rate: MCS0, MCS9

DEVIATIONS FROM TEST STANDARD

None



Run #: 48

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #48

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
11649.880	56.2	-4.9	3.1	29.0	2.3	0.0	Vert	AV	0.0	53.6	54.0	-0.4	Tx Ch 165, MCS0, Pwr 11, EUT on Side
11511.170	55.9	-5.1	2.0	40.0	2.7	0.0	Vert	AV	0.0	53.5	54.0	-0.5	Tx Ch 151 (40 MHz BW), MCS7, Pwr 10, EUT on Side
11651.580	56.0	-4.9	3.1	29.0	2.3	0.0	Vert	AV	0.0	53.4	54.0	-0.6	Tx Ch 165, MCS7, Pwr 11, EUT on Side
11489.870	55.9	-5.4	2.0	41.0	2.3	0.0	Vert	AV	0.0	52.8	54.0	-1.2	Tx Ch 149, MCS0, Pwr 9, EUT on Side
11491.330	55.9	-5.4	2.0	41.0	2.3	0.0	Vert	AV	0.0	52.8	54.0	-1.2	Tx Ch 149, MCS7, Pwr 9, EUT on Side
11652.600	55.3	-4.9	3.0	44.0	2.3	0.0	Vert	AV	0.0	52.7	54.0	-1.3	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11651.290	55.0	-4.9	3.1	29.0	2.3	0.0	Vert	AV	0.0	52.4	54.0	-1.6	Tx Ch 165, 54 Mbps, Pwr 10, EUT on Side
11591.330	53.7	-4.7	3.1	29.0	2.7	0.0	Vert	AV	0.0	51.7	54.0	-2.3	Tx Ch 159 (40 MHz BW), MCS7, Pwr 11, EUT on Side
11652.550	54.3	-4.9	3.6	13.0	2.3	0.0	Horz	AV	0.0	51.7	54.0	-2.3	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
11649.710	54.0	-4.9	3.1	29.0	2.3	0.0	Vert	AV	0.0	51.4	54.0	-2.6	Tx Ch 165, 36 Mbps, Pwr 10, EUT on Side
11492.460	54.0	-5.4	1.9	29.0	2.3	0.0	Vert	AV	0.0	50.9	54.0	-3.1	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
11511.170	53.2	-5.1	2.0	40.0	2.7	0.0	Vert	AV	0.0	50.8	54.0	-3.2	Tx Ch 151 (40 MHz BW), MCS0, Pwr 10, EUT on Side
11569.000	53.0	-4.5	1.5	110.0	2.3	0.0	Vert	AV	0.0	50.8	54.0	-3.2	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
11652.550	53.4	-4.9	1.9	49.0	2.3	0.0	Horz	AV	0.0	50.8	54.0	-3.2	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11649.000	53.0	-4.9	2.4	329.0	2.3	0.0	Vert	AV	0.0	50.4	54.0	-3.6	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11652.600	52.8	-4.9	3.5	313.0	2.3	0.0	Vert	AV	0.0	50.2	54.0	-3.8	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
11652.550	52.8	-4.9	4.0	307.0	2.3	0.0	Horz	AV	0.0	50.2	54.0	-3.8	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11564.300	49.8	-4.5	2.0	42.0	4.8	0.0	Vert	AV	0.0	50.1	54.0	-3.9	Tx Ch 155 (80 MHz BW), MCS0, Pwr 7, EUT on Side
11591.170	51.8	-4.7	3.1	29.0	2.7	0.0	Vert	AV	0.0	49.8	54.0	-4.2	Tx Ch 159 (40 MHz BW), MCS0, Pwr 11, EUT on Side
11650.710	73.9	-4.9	3.1	29.0	0.0	0.0	Vert	PK	0.0	69.0	74.0	-5.0	Tx Ch 165, MCS0, Pwr 15, EUT on Side
11564.300	47.3	-4.5	2.0	42.0	4.8	0.0	Vert	AV	0.0	47.6	54.0	-6.4	Tx Ch 155 (80 MHz BW), MCS9, Pwr 7, EUT on Side
17225.540	27.8	15.9	1.5	24.0	2.3	0.0	Vert	AV	0.0	46.0	54.0	-8.0	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
17345.330	27.1	16.2	1.5	201.0	2.3	0.0	Vert	AV	0.0	45.6	54.0	-8.4	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
17462.750	26.6	16.7	1.5	52.0	2.3	0.0	Vert	AV	0.0	45.6	54.0	-8.4	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11510.500	70.8	-5.2	2.0	40.0	0.0	0.0	Vert	PK	0.0	65.6	74.0	-8.4	Tx Ch 151 (40 MHz BW), MCS7, Pwr 10, EUT on Side
11490.500	70.3	-5.4	2.0	41.0	0.0	0.0	Vert	PK	0.0	64.9	74.0	-9.1	Tx Ch 149, MCS7, Pwr 9, EUT on Side
11649.040	68.6	-4.9	3.1	29.0	0.0	0.0	Vert	PK	0.0	63.7	74.0	-10.3	Tx Ch 165, MCS7, Pwr 11, EUT on Side
11653.790	67.8	-4.9	3.1	29.0	0.0	0.0	Vert	PK	0.0	62.9	74.0	-11.1	Tx Ch 165, MCS0, Pwr 11, EUT on Side
11647.850	67.7	-4.9	3.0	44.0	0.0	0.0	Vert	PK	0.0	62.8	74.0	-11.2	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
23300.140	39.1	0.6	1.2	19.0	2.3	0.0	Vert	AV	0.0	42.0	54.0	-12.0	Tx Ch 165, MCS7, Pwr 11, EUT on Side
23300.110	39.0	0.6	1.2	19.0	2.3	0.0	Vert	AV	0.0	41.9	54.0	-12.1	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11647.450	66.8	-4.9	3.6	13.0	0.0	0.0	Horz	PK	0.0	61.9	74.0	-12.1	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
11495.530	67.0	-5.4	2.0	41.0	0.0	0.0	Vert	PK	0.0	61.6	74.0	-12.4	Tx Ch 149, MCS0, Pwr 9, EUT on Side
11649.580	66.3	-4.9	3.1	29.0	0.0	0.0	Vert	PK	0.0	61.4	74.0	-12.6	Tx Ch 165, 54 Mbps, Pwr 10, EUT on Side
11647.600	65.9	-4.9	1.9	49.0	0.0	0.0	Horz	PK	0.0	61.0	74.0	-13.0	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11647.750	65.7	-4.9	2.4	329.0	0.0	0.0	Vert	PK	0.0	60.8	74.0	-13.2	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11654.120	65.4	-4.9	3.1	29.0	0.0	0.0	Vert	PK	0.0	60.5	74.0	-13.5	Tx Ch 165, 36 Mbps, Pwr 10, EUT on Side
11647.500	65.4	-4.9	3.5	313.0	0.0	0.0	Vert	PK	0.0	60.5	74.0	-13.5	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
23300.310	37.5	0.6	1.2	151.0	2.3	0.0	Horz	AV	0.0	40.4	54.0	-13.6	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side

SPURIOUS RADIATED EMISSIONS U-NII-3

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
11487.460	65.8	-5.4	1.9	29.0	0.0	0.0	Vert	PK	0.0	60.4	74.0	-13.6	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
11647.600	65.3	-4.9	4.0	307.0	0.0	0.0	Horz	PK	0.0	60.4	74.0	-13.6	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11588.670	64.8	-4.6	3.1	29.0	0.0	0.0	Vert	PK	0.0	60.2	74.0	-13.8	Tx Ch 159 (40 MHz BW), MCS7, Pwr 11, EUT on Side
11569.440	63.7	-4.5	1.5	110.0	0.0	0.0	Vert	PK	0.0	59.2	74.0	-14.8	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
11588.670	63.4	-4.6	3.1	29.0	0.0	0.0	Vert	PK	0.0	58.8	74.0	-15.2	Tx Ch 159 (40 MHz BW), MCS0, Pwr 11, EUT on Side
11510.500	63.8	-5.2	2.0	40.0	0.0	0.0	Vert	PK	0.0	58.6	74.0	-15.4	Tx Ch 151 (40 MHz BW), MCS0, Pwr 10, EUT on Side
11551.000	63.1	-4.6	2.0	42.0	0.0	0.0	Vert	PK	0.0	58.5	74.0	-15.5	Tx Ch 155 (80 MHz BW), MCS0, Pwr 7, EUT on Side
17365.080	38.4	16.3	1.5	201.0	0.0	0.0	Vert	PK	0.0	54.7	74.0	-19.3	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
17484.620	37.1	16.8	1.5	52.0	0.0	0.0	Vert	PK	0.0	53.9	74.0	-20.1	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
17230.750	37.9	15.9	1.5	24.0	0.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
11551.000	56.8	-4.6	2.0	42.0	0.0	0.0	Vert	PK	0.0	52.2	74.0	-21.8	Tx Ch 155 (80 MHz BW), MCS9, Pwr 7, EUT on Side
23299.930	48.8	0.6	1.2	19.0	0.0	0.0	Vert	PK	0.0	49.4	74.0	-24.6	Tx Ch 165, MCS7, Pwr 11, EUT on Side
23299.860	48.1	0.6	1.2	19.0	0.0	0.0	Vert	PK	0.0	48.7	74.0	-25.3	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
23301.520	47.4	0.6	1.2	151.0	0.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side

CONCLUSION

Pass



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3

EUT:	Lantern Surgical Assistant Reusable	Work Order:	ORTH0035
Serial Number:	See Configurations	Date:	2024-10-22
Customer:	OrthAlign	Temperature:	21°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	44.7%
Customer Project:	None	Bar. Pressure (PMSL):	1017 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST PARAMETERS

Run #:	48	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)
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COMMENTS

None

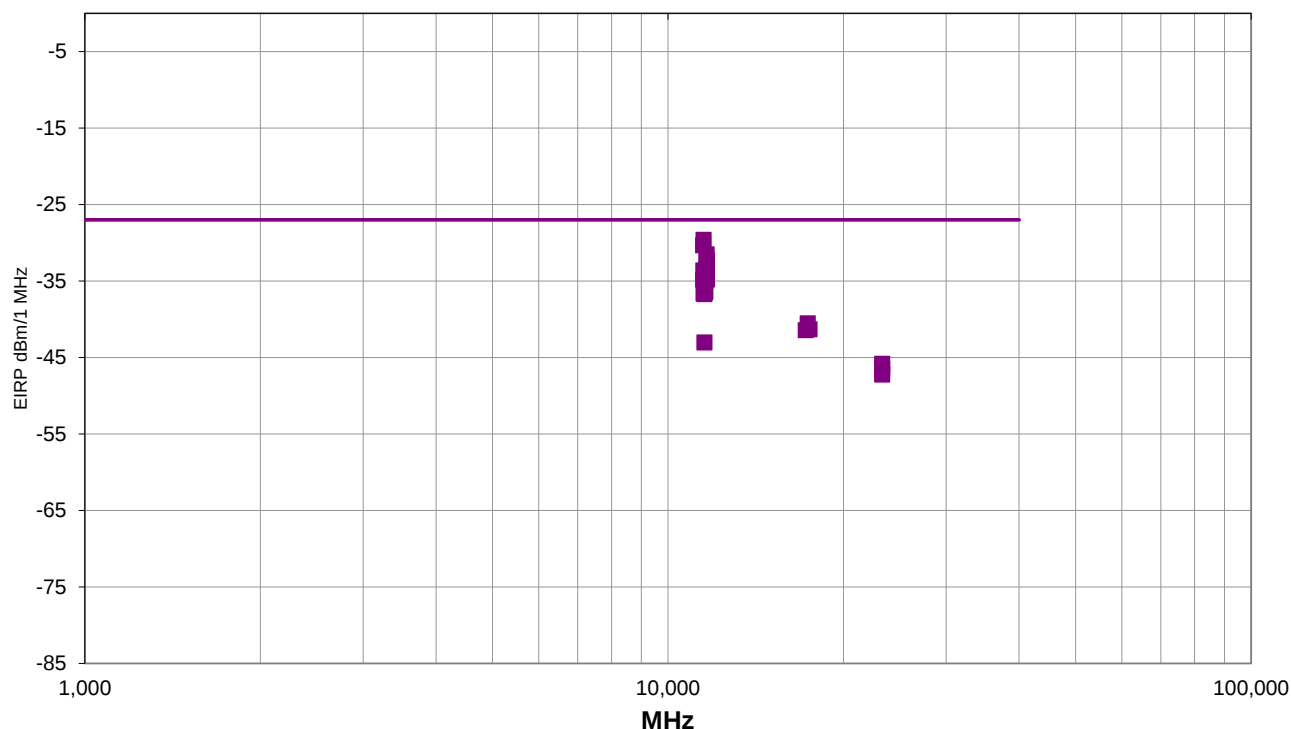
EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE

- 802.11a, 20 MHz BW Ch: 149, 157, & 165, Data Rate: 6, 36, 54 Mbps
- 802.11n, 20 MHz BW Ch: 149, 157, & 165, 40 MHz BW Ch: 151, & 159, Data Rate: MCS0, MCS7
- 802.11ac, 80 MHz BW Ch: 155, Data Rate: MCS0, MCS9

DEVIATIONS FROM TEST STANDARD

None



Run #: 48

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #48

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
11510.500	2.0	40.0	Vert	PK	1.1E-6	-29.6	-27.0	-2.6	Tx Ch 151 (40 MHz BW), MCS7, Pwr 10, EUT on Side
11490.500	2.0	41.0	Vert	PK	927.1E-9	-30.3	-27.0	-3.3	Tx Ch 149, MCS7, Pwr 9, EUT on Side
11649.040	3.1	29.0	Vert	PK	703.3E-9	-31.5	-27.0	-4.5	Tx Ch 165, MCS7, Pwr 11, EUT on Side
11653.790	3.1	29.0	Vert	PK	585.0E-9	-32.3	-27.0	-5.3	Tx Ch 165, MCS0, Pwr 11, EUT on Side
11647.850	3.0	44.0	Vert	PK	571.6E-9	-32.4	-27.0	-5.4	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11647.450	3.6	13.0	Horz	PK	464.6E-9	-33.3	-27.0	-6.3	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
11495.530	2.0	41.0	Vert	PK	433.6E-9	-33.6	-27.0	-6.6	Tx Ch 149, MCS0, Pwr 9, EUT on Side
11649.580	3.1	29.0	Vert	PK	414.1E-9	-33.8	-27.0	-6.8	Tx Ch 165, 54 Mbps, Pwr 10, EUT on Side
11647.600	1.9	49.0	Horz	PK	377.7E-9	-34.2	-27.0	-7.2	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
11647.750	2.4	329.0	Vert	PK	360.7E-9	-34.4	-27.0	-7.4	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11647.500	3.5	313.0	Vert	PK	336.6E-9	-34.7	-27.0	-7.7	Tx Ch 165, 6 Mbps, Pwr 10, EUT Horz
11654.120	3.1	29.0	Vert	PK	336.6E-9	-34.7	-27.0	-7.7	Tx Ch 165, 36 Mbps, Pwr 10, EUT on Side
11487.460	1.9	29.0	Vert	PK	328.9E-9	-34.8	-27.0	-7.8	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
11647.600	4.0	307.0	Horz	PK	328.9E-9	-34.8	-27.0	-7.8	Tx Ch 165, 6 Mbps, Pwr 10, EUT Vert
11588.670	3.1	29.0	Vert	PK	314.1E-9	-35.0	-27.0	-8.0	Tx Ch 159 (40 MHz BW), MCS7, Pwr 11, EUT on Side
11569.440	1.5	110.0	Vert	PK	249.5E-9	-36.0	-27.0	-9.0	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
11588.670	3.1	29.0	Vert	PK	227.6E-9	-36.4	-27.0	-9.4	Tx Ch 159 (40 MHz BW), MCS0, Pwr 11, EUT on Side
11510.500	2.0	40.0	Vert	PK	217.3E-9	-36.6	-27.0	-9.6	Tx Ch 151 (40 MHz BW), MCS0, Pwr 10, EUT on Side
11551.000	2.0	42.0	Vert	PK	212.4E-9	-36.7	-27.0	-9.7	Tx Ch 155 (80 MHz BW), MCS0, Pwr 7, EUT on Side
17365.080	1.5	201.0	Vert	PK	88.5E-9	-40.5	-27.0	-13.5	Tx Ch 157, 6 Mbps, Pwr 11, EUT on Side
17484.620	1.5	52.0	Vert	PK	73.6E-9	-41.3	-27.0	-14.3	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
17230.750	1.5	24.0	Vert	PK	72.0E-9	-41.4	-27.0	-14.4	Tx Ch 149, 6 Mbps, Pwr 9, EUT on Side
11551.000	2.0	42.0	Vert	PK	49.8E-9	-43.0	-27.0	-16.0	Tx Ch 155 (80 MHz BW), MCS9, Pwr 7, EUT on Side
23299.930	1.2	19.0	Vert	PK	26.1E-9	-45.8	-27.0	-18.8	Tx Ch 165, MCS7, Pwr 11, EUT on Side
23299.860	1.2	19.0	Vert	PK	22.2E-9	-46.5	-27.0	-19.5	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side
23301.520	1.2	151.0	Horz	PK	18.9E-9	-47.2	-27.0	-20.2	Tx Ch 165, 6 Mbps, Pwr 10, EUT on Side

CONCLUSION

Pass



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3

EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-24
Customer:	OrthAlign	Temperature:	20.7°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.7%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	60	Test Distance (m):	1	Ant. Height(s) (m):	1.2 (m)
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COMMENTS

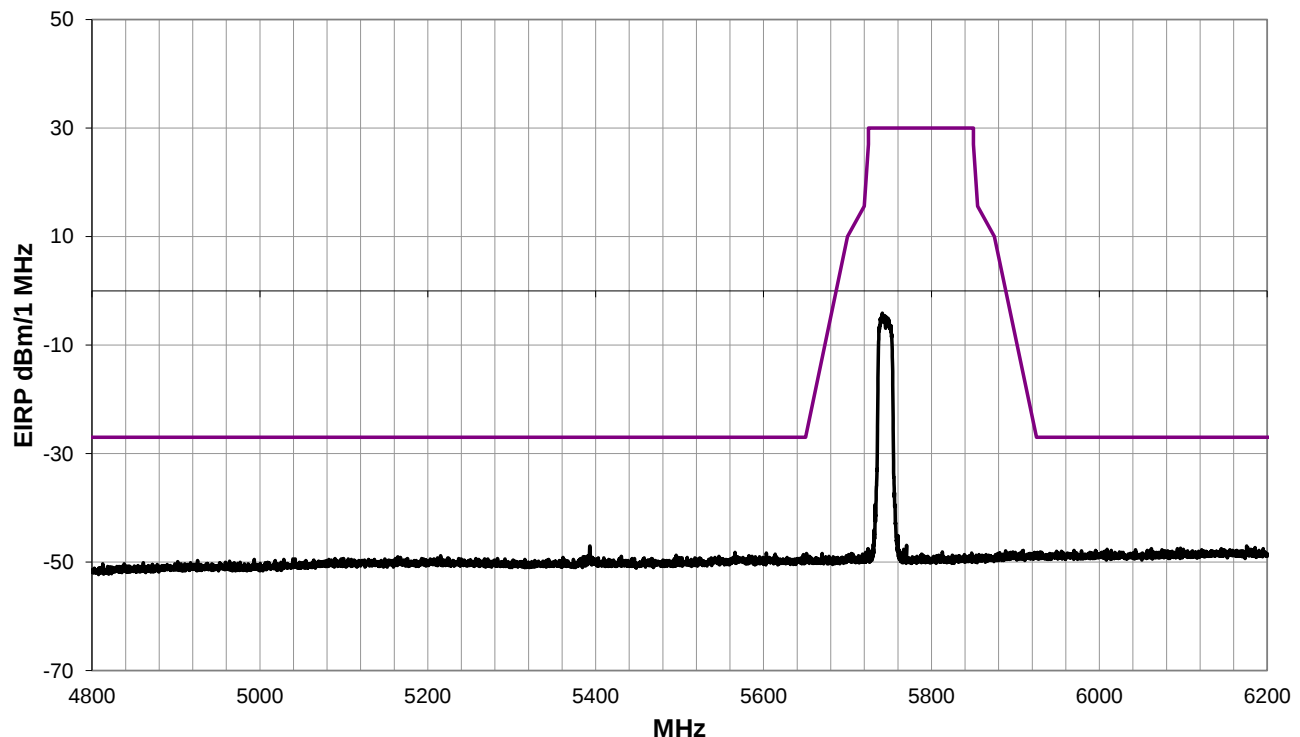
None

EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE 802.11a, Ch 149, 5745 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None



Run #: 60

■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #60

All emissions were below the limit (see graph above).

CONCLUSION

Evaluation



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-24
Customer:	OrthAlign	Temperature:	20.7°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.7%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	61	Test Distance (m):	1	Ant. Height(s) (m):	1.2 (m)
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COMMENTS

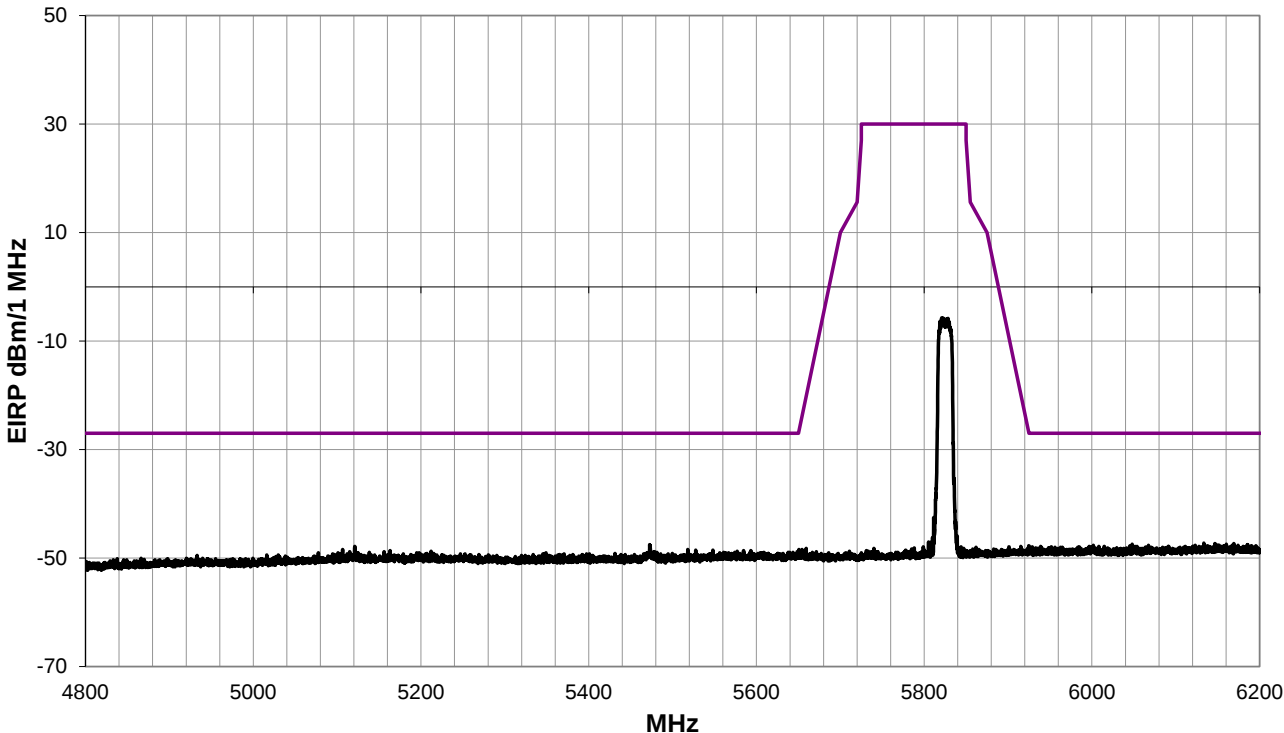
None

EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE 802.11a, Ch 165, 5825 MHz, 6 Mbps

DEVIATIONS FROM TEST STANDARD

None



Run #: 61

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #61

All emissions were below the limit (see graph above).

CONCLUSION

Evaluation



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3

EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-24
Customer:	OrthAlign	Temperature:	20.7°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.7%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	62	Test Distance (m):	1	Ant. Height(s) (m):	1.2 (m)
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COMMENTS

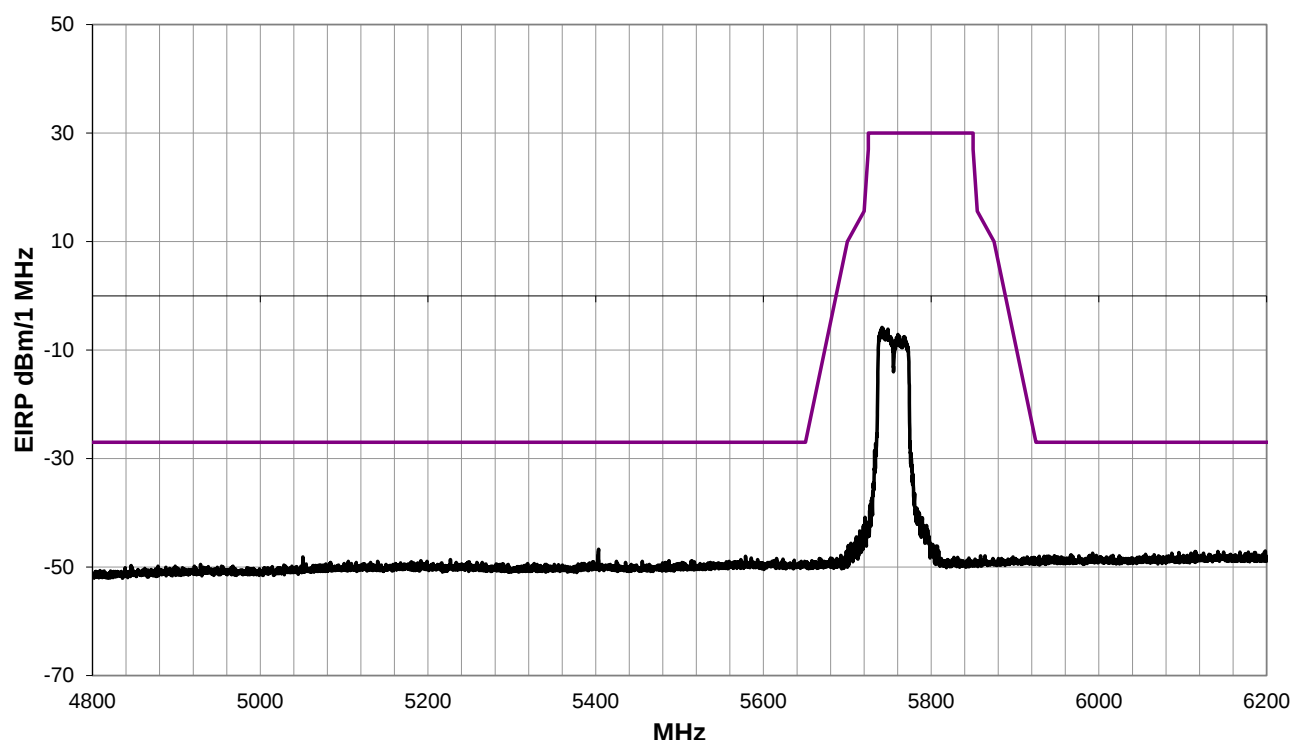
None

EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE 802.11n, Ch 151 (40 MHz BW), 5755 MHz, MCS7

DEVIATIONS FROM TEST STANDARD

None



Run #: 62

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #62

All emissions were below the limit (see graph above).

CONCLUSION

Evaluation



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3



EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-24
Customer:	OrthAlign	Temperature:	20.7°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.7%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	63	Test Distance (m):	1	Ant. Height(s) (m):	1.2 (m)
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COMMENTS

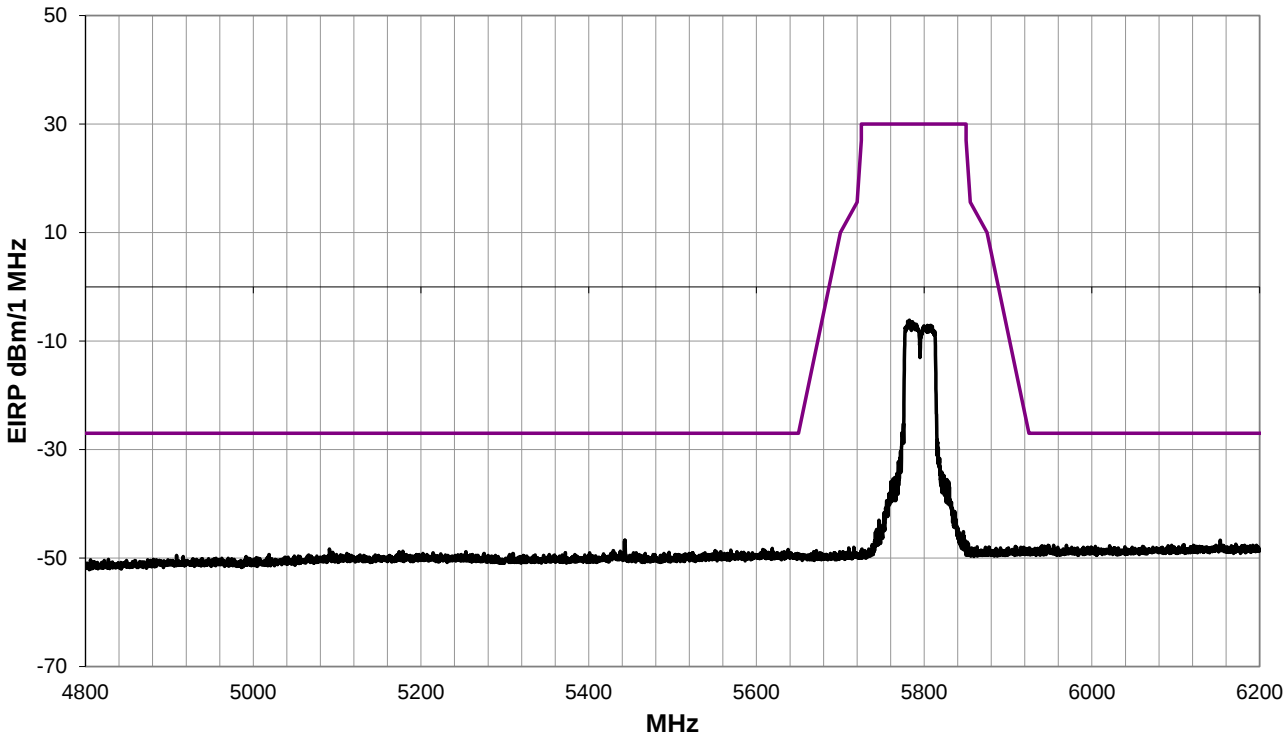
None

EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE 802.11n, Ch 159 (40 MHz BW), 5795 MHz, MCS7

DEVIATIONS FROM TEST STANDARD

None



Run #: 63

PK AV QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #63

All emissions were below the limit (see graph above).

CONCLUSION

Evaluation



Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3

EUT:	Lantern Reusable Navigation Unit	Work Order:	ORTH0035
Serial Number:	2401016	Date:	2024-10-24
Customer:	OrthAlign	Temperature:	20.7°C
Attendees:	Steven Devincentis, Kian Gholizadeh	Relative Humidity:	46.7%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Nolan De Ramos	Job Site:	OC10
Power:	5VDC	Configuration:	ORTH0035-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2024	ANSI C63.10:2013

TEST PARAMETERS

Run #:	64	Test Distance (m):	1	Ant. Height(s) (m):	1.2 (m)
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COMMENTS

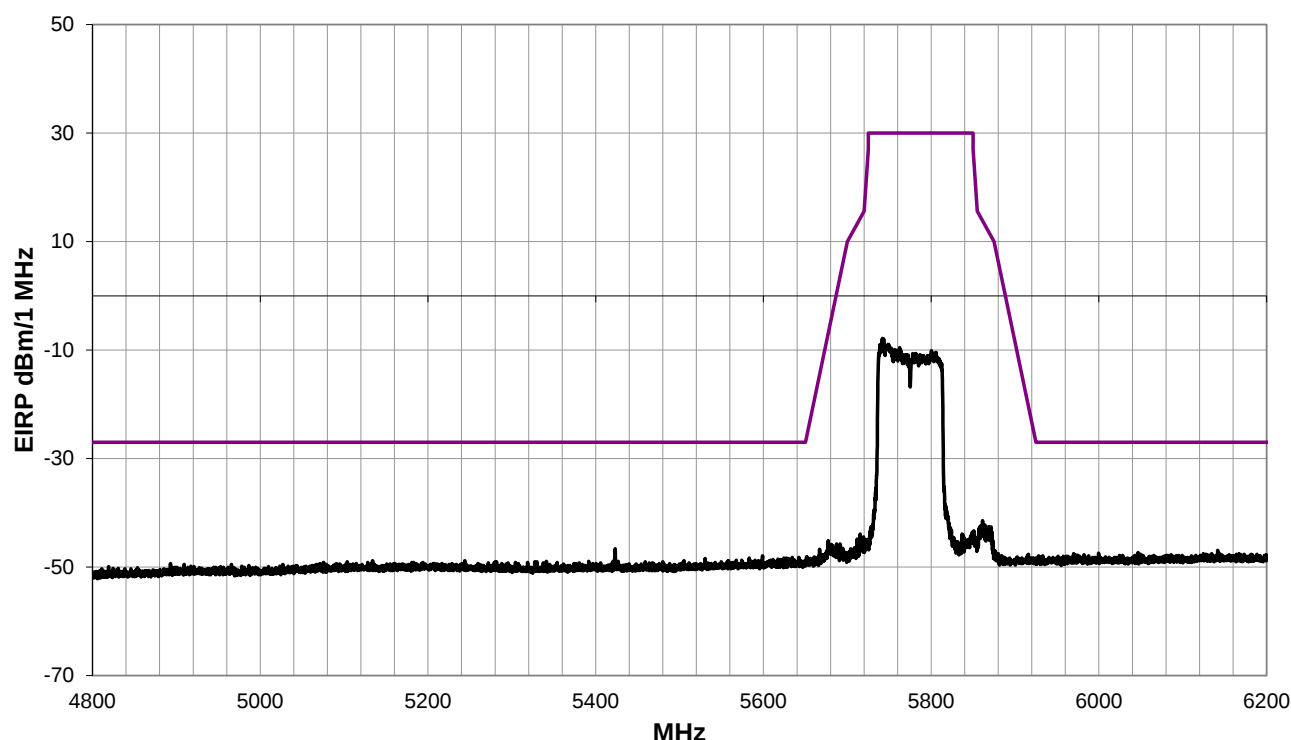
None

EUT OPERATING MODES

Transmitting Wi-Fi U-NII-3, IEEE 802.11ac, Ch 155 (80 MHz BW), 5775 MHz, MCS7

DEVIATIONS FROM TEST STANDARD

None



Run #: 64

■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS U-NII-3

RESULTS - Run #64

All emissions were below the limit (see graph above).

CONCLUSION

Evaluation

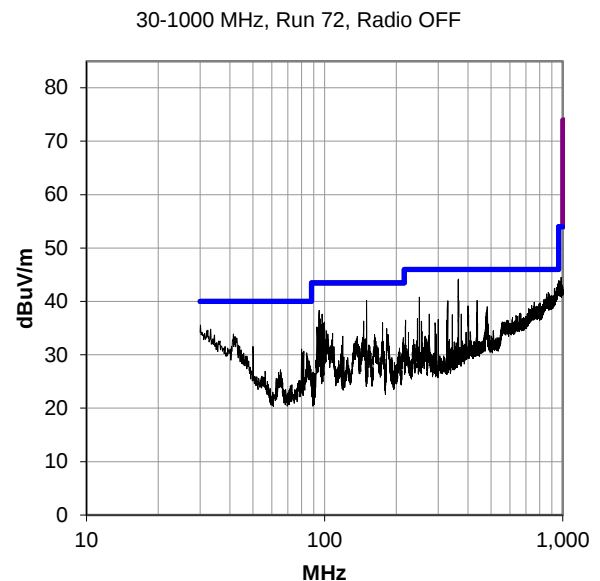
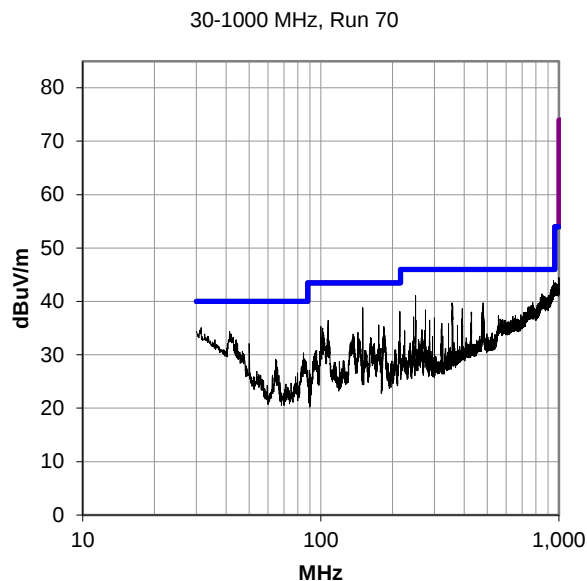
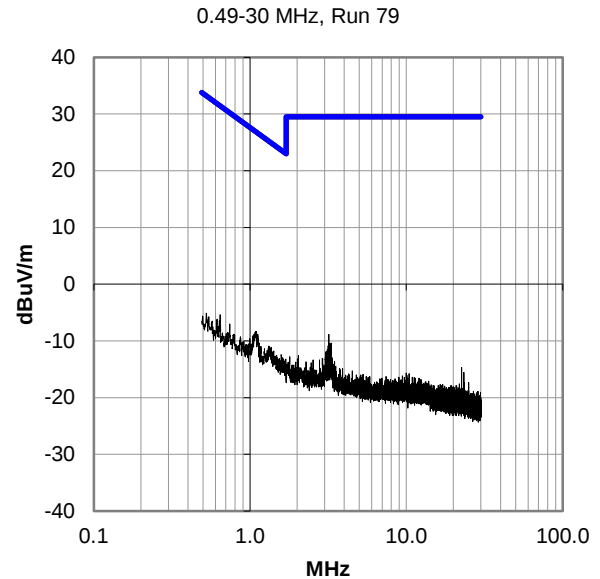
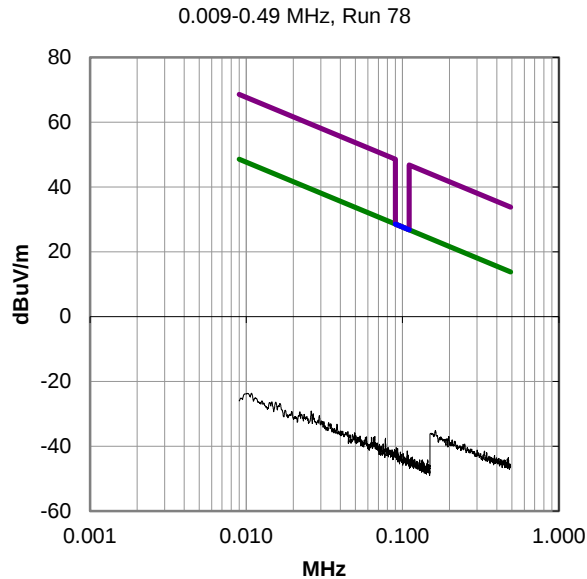


Tested By

SPURIOUS RADIATED EMISSIONS U-NII-3

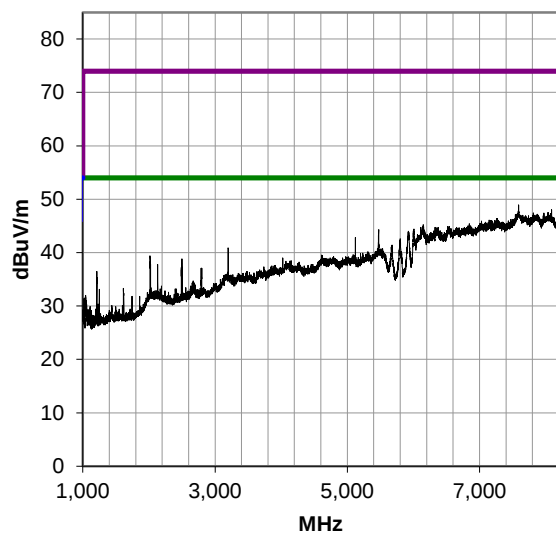
PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.

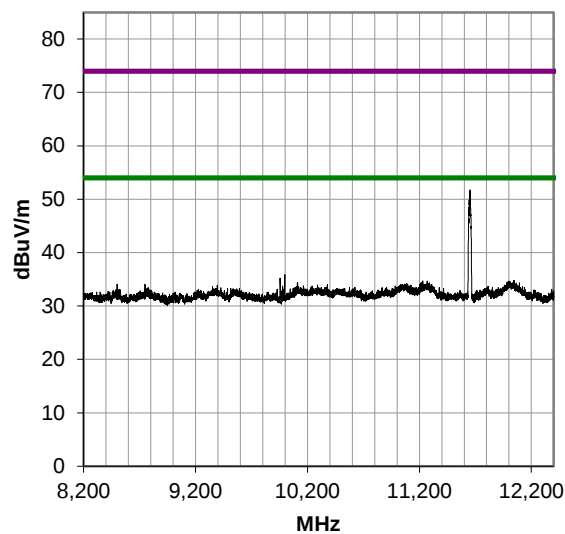


SPURIOUS RADIATED EMISSIONS U-NII-3

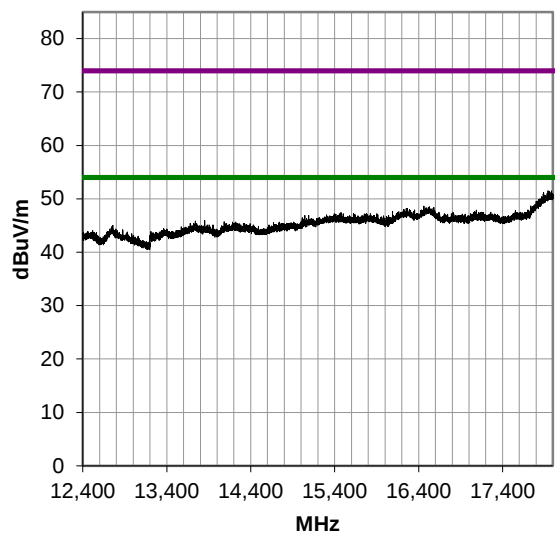
1000-8200 MHz, Run 45



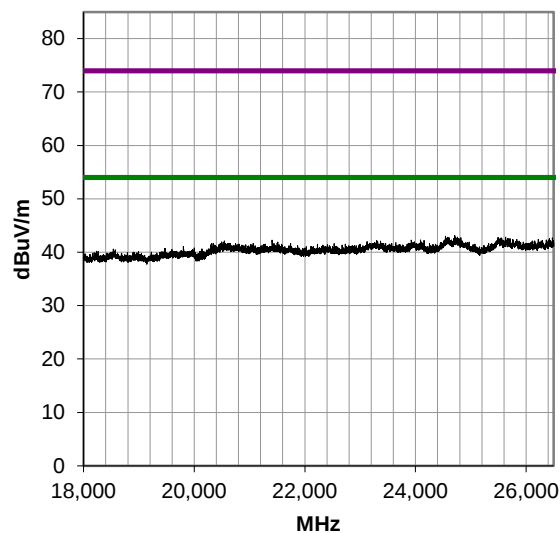
8200-12400 MHz, Run 47



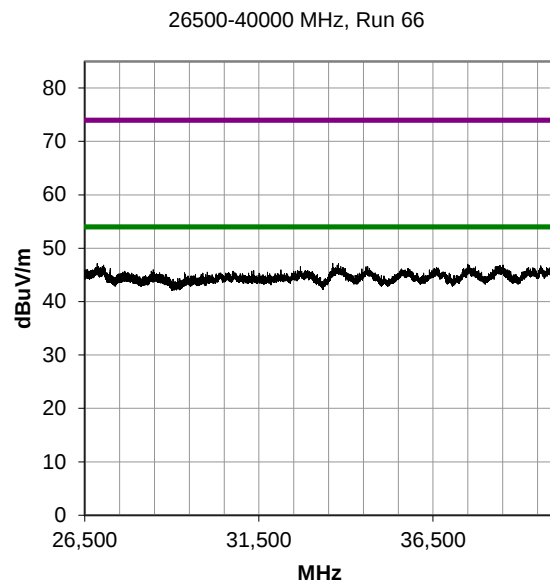
12400-18000 MHz, Run 48



18000-26500 MHz, Run 67



SPURIOUS RADIATED EMISSIONS U-NII-3



End of Test Report