



Solutions

TEST REPORT

Test Report No. : UL-RPT-RP-14684854-1016

Customer : Eliwell Controls srl
Model No. / PMN* : AIR EDGE WiFi-Eth RS485 SD
HVIN * : AIR EDGE WiFi Eth RS485
FVIN : EDGEWIFI
FCC ID* : 2AMLEEDGEWIFI
ISED Certification No. * : IC: 9727A-EDGEWIFI
Technology * : WLAN 5 GHz (802.11 a, n)
Test Standard(s) : **FCC Parts 15.209(a), 15.207 & 15.407**
Innovation, Science and Economic Development Canada
RSS-247 Issue 4 July 2025 &
RSS-Gen Issue 5, April 2018 | Amendment 2 (February 2021)

For details of applied tests refer to test result summary

1. This test report shall not be reproduced in full or partial, without the written approval of UL International Germany GmbH.
2. The results in this report apply only to the sample tested.
3. The test results in this report are traceable to the national or international standards.
4. Test report version 1.1 supersedes version 1.0 with immediate effect.
5. Result of the tested sample: **Pass**
6. All information marked with a (*) were provided by customer / applicant or authorized representative

Yixiang Lin

Prepared by: Yixiang Lin
Title: Project Engineer
Date: 28 August 2025

Faiq

Approved by: Muhammad Faiq Khan
Title: Project Engineer
Date: 28 August 2025



Deutsche
Akkreditierungsstelle
D-PL-19381-02-00

This laboratory is accredited by DAkkS.
The tests reported herein have been performed in
accordance with its' terms of accreditation.

This page has been left intentionally blank.

Table of Contents

Customer Information.....	4
Report Revision History	4
1. Attestation of Test Results.....	5
1.1 Description of EUT	5
1.2 General Information	5
1.3. Summary of Test Results	6
1.4. Methods and Procedures	7
1.5. Deviations from the Test Specification	7
2. Equipment Under Test (EUT)	8
2.1. Identification of Equipment Under Test (EUT) *	8
2.2. Description of EUT *	8
2.3. Modifications Incorporated in the EUT	8
2.4. Additional Information Related to Testing	9
2.5. Support Equipment	10
A. Support Equipment (In-house)	10
B. Support Equipment (Manufacturer supplied) *	10
3. Operation and Monitoring of the EUT during Testing	11
3.1. Operating Modes	11
3.2. Configuration and Peripherals	11
4. Measurements, Examinations and Derived Results	14
4.1. General Comments	14
4.2. Test Results	15
4.2.1. Transmitter AC Conducted Spurious Emissions	15
4.2.2. Transmitter 26 dB Bandwidth	23
4.2.3. Transmitter 99% Emission Bandwidth	33
4.2.4. Transmitter Minimum 6 dB Bandwidth	46
4.2.5. Transmitter Power Spectral Density	50
4.2.6. Transmitter Maximum (Peak) Output Power	75
4.2.7. Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation)	84
4.2.8. Transmitter Out of Band Radiated Emissions (5.25-5.35 GHz band operation)	97
4.2.9. Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation)	111
4.2.10. Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation)	124
4.2.11. Transmitter Band Edge Radiated Emissions	136
5. Measurement Uncertainty	156
6. Used equipment.....	157
7. Report Revision History	158

Customer Information

Company Name:	Eliwell Controls srl
Address:	Via dell'Industria 15 32016 Alpago (BL) Italy

Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	25/08/2025	Initial Version	Yixiang Lin
1.1	28/08/2025	Revised Version	Yixiang Lin

1. Attestation of Test Results

1.1 Description of EUT

The equipment under test was a Modbus to WiFi/Ethernet interface with BLE connectivity, supporting WLAN 2.4 GHz, WLAN 5 GHz and Bluetooth LE.

While testing WLAN 5 GHz, all other supported radio technologies were either switched off or were in idle mode. EUT were operating in in U-NII-1, -2a, -2c, -3 bands

1.2 General Information

Specification Reference:	47CFR15.407
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) – Section 15.407
Specification Reference:	47CFR15.207 and 47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) – Sections 15.207 and 15.209
Specification Reference:	RSS-Gen Issue 5 February 2021
Specification Title:	General Requirements for Compliance of Radio Apparatus
Specification Reference:	RSS-247 Issue 4 July 2025
Specification Title:	Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands
Site Registration:	FCC: 399704, ISEDC: 22511
FCC Lab. Designation No.:	DE0019
ISEDC CABID:	DE0008
Location of Testing:	Hedelfinger Strasse. 61,70327 Stuttgart, GERMANY
Test Dates:	14 February 2024 to 16 April 2024

1.3. Summary of Test Results

FCC Reference (47CFR)	ISED Canada Reference	Measurement	Result
Part 15.207	RSS-Gen 8.8	Transmitter AC Conducted Emissions	
--	RSS-Gen 6.7	Transmitter 99% Emission Bandwidth	
Part 15.403	--	Transmitter 26dB Bandwidth	
Part 15.407(e)	RSS-247 7.3.4.2	Transmitter Minimum 6 dB Bandwidth	
Part 15.35(c)	RSS-Gen 8.2	Transmitter Duty Cycle ⁽¹⁾	Note 1
Part 15.407(a)(1)(iv), (2), (3)	RSS-Gen 6.12 / RSS-247 7.3.1.2, 7.3.2.2, 7.3.3.2 & 7.3.4.3	Transmitter Max. Conducted Output Power	
Part 15.407(a)(1)(iv), (2), (3)	RSS-Gen 6.12 / RSS-247 7.3.1.2, 7.3.2.2, 7.3.3.2 & 7.3.4.3	Transmitter Spectral Density	
Part 15.407(b)/15.209(a)	RSS-Gen 6.13, 8.9 & 8.10/ RSS 247 7.3.1.3, 7.3.2.3, 7.3.3.3 & 7.3.4.4	Transmitter Out of Band Radiated Emissions	
Part 15.407(b)/15.209(a)	RSS-Gen 6.13, 8.9 & 8.10/ RSS 247 7.3.1.3, 7.3.2.3, 7.3.3.3 & 7.3.4.4	Transmitter Band Edge Radiated Emissions	
Part 15.407(g)	RSS-Gen 6.11	Transmitter Frequency Stability (Temperature & Voltage Variation) ⁽²⁾	N.P.
Part 15.407(h)(1)	RSS-247 7.3.2.2. 7.3.3.2	Transmitter Power Control ⁽³⁾	N.P.
FCC Part 15.407 (h)	RSS-247 7.3.6	Dynamic Frequency Selection ⁽⁴⁾	Note 4
Key to Results  = Complied  = Did not comply N/A = Not Applicable N.P.= Not performed			
Decision rule: Where not otherwise specified or communicated in writing, statements of conformity (e.g. Pass/Fail) are established according to the following decision rule: considering the ILAC G8:2019 chapter 4.2.1 (simple acceptance rule). This leads to a maximum 50% of false accept or false reject when the measured value equals the tolerance limit. See ILAC-G8:09/2019 for further details.			

Note(s):

1. As the continuous transmission of the EUT ($D \geq 98\%$) can be achieved and EUT was transmitting continuously with 100% duty cycle (+/- 2% tolerance). Therefore, the measurement is not included in the Test report.
2. As per applicant's user manual Frequency stability is better than ± 20 ppm which ensures that the signal remains in the allocated bands under all operational conditions stated in the user manual.
3. Not required for systems with an e.i.r.p. of less than 500 mW.
4. Refer to report: UL-RPT-RP-14684854-1016-DFS.

1.4. Methods and Procedures

Reference:	FCC: ANSI C63.10-2020 + Cor. 1-2023 / ISED: ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 December 14, 2017
Title:	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E
Reference:	KDB 174176 D01 Line Conducted FAQ v01r02 August 7, 2025
Title:	AC Power-Line Conducted Emissions Frequently Asked Questions

1.5. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

2. Equipment Under Test (EUT)

2.1. Identification of Equipment Under Test (EUT) *

Brand Name:	Eliwell Controls
Model Name or Number / PMN:	AIR EDGE WiFi-Eth RS485 SD
HVIN:	AIR EDGE WiFi Eth RS485
FVIN:	EDGEWIFI
Test Sample Serial Number:	111909 + 111934 (Radiated Test Sample)
Hardware Version:	111909C + 111934C
Software Version:	0.1.21t
FCC ID:	2AMLEEDGEWIFI
ISED Canada Certification Number:	9727A-EDGEWIFI
Date of Receipt:	21 June 2023

Brand Name:	Eliwell Controls
Model Name or Number / PMN:	AIR EDGE WiFi-Eth RS485 SD
HVIN:	AIR EDGE WiFi Eth RS485
FVIN:	EDGEWIFI
Test Sample Serial Number:	111909 + 111934 (Conducted Test Sample)
Hardware Version:	111909C + 111934C
Software Version:	0.1.21t
FCC ID:	2AMLEEDGEWIFI
ISED Canada Certification Number:	9727A-EDGEWIFI
Date of Receipt:	21 June 2023

2.2. Description of EUT *

The equipment under test was a Modbus to WiFi/Ethernet interface with BLE connectivity, supporting WLAN 2.4 GHz, WLAN 5 GHz and Bluetooth LE.

While testing WLAN 5 GHz a-, n-modes, all other supported radio technologies were either switched off or were in idle mode. EUT were operating in in U-NII-1, -2a, -2c, -3 bands

2.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

2.4. Additional Information Related to Testing

Technology Tested:	WLAN (IEEE 802.11a,n) / Digital Transmission System		
Type of Unit:	Transceiver		
Supported Modulation Types:	OFDM		
Supported Data rates:	802.11a	6,9,12,18,24,36,48,54 Mbit/s (SISO)	
	802.11n	MCS0-7 (SISO)	
Power Supply Requirement(s):	120V AC / 60 Hz		
Antenna Type*:	Integral	External	
Antenna Description*:	PCB Antenna	Wi-Fi/WLAN Adhesive External Antenna	
Declared Antenna Gain*:	8.71 dBi	2.81 dBi	
Measured Maximum Conducted Output Power:	12.9 dBm		
Nominal Channel Bandwidth *	20 MHz, 40 MHz		
Transceiver Frequency Band:	5150 MHz to 5250 MHz [U-NII-1 Band]		
Transmit Channels Tested: (20MHz)	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	36	5180
	Middle	40	5200
	Top	48	5240
Transmit Channels Tested: (40MHz)	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	38	5190
	Top	46	5230
Transceiver Frequency Band:	5250 MHz to 5350 MHz [U-NII-2a Band]		
Transmit Channels Tested: (20MHz)	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	52	5260
	Middle	56	5280
	Top	64	5320
Transmit Channels Tested: (40MHz)	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	54	5270
	Top	62	5310
Transceiver Frequency Band:	5470 MHz to 5725 MHz [U-NII-2c Band]		
Transmit Channels Tested: (20MHz)	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	100	5500
	Middle	120	5600
	Top	140	5700
Transmit Channels Tested:	Channel ID	Channel Number	Frequency (MHz)

40 MHz	Bottom	102	5510
	Middle	118	5590
	Top	134	5670
Transceiver Frequency Band:		5725 MHz to 5850 MHz [U-NII-3 Band]	
Transmit Channels Tested: 20 MHz	Channel ID	Channel Number	Frequency (MHz)
	Bottom	149	5745
	Middle	157	5785
	Top	165	5825
Transmit Channels Tested: 40 MHz	Channel ID	Channel Number	Frequency (MHz)
	Bottom	151	5755
	Top	159	5795

2.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

A. Support Equipment (In-house)

Item	Description	Brand Name	Model Name or Number	Serial Number
1	Test Laptop with PuTTY	Lenovo	20NYS1GL1U	PC1D100K

B. Support Equipment (Manufacturer supplied) *

Item	Description	Brand Name	Model Name or Number	Serial Number
1	-/-	-/-	-/-	-/-

3. Operation and Monitoring of the EUT during Testing

3.1. Operating Modes

The EUT was tested in the following operating mode(s):

Continuously transmitting modulated carrier with maximum power setting and a combination of: ^{*(1)}

- 802.11a-Mode | 6, 9, 12, 18, 24, 36, 48, 54 Mbps
- 802.11n-Mode | HT 20/40 | MCS0 to MCS7

^{*(1)} According to the RF output power following data rates were determined to be the worst cases per mode and therefore, all further measurements were performed only with these worst-case modes.

- a-mode 24 Mbps
- n20-mode MCS5
- n40-mode MCS3

3.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

EUT Power Supply:

- The EUT was powered with 120 V AC 60 Hz from Mains.

Test Mode Activation:

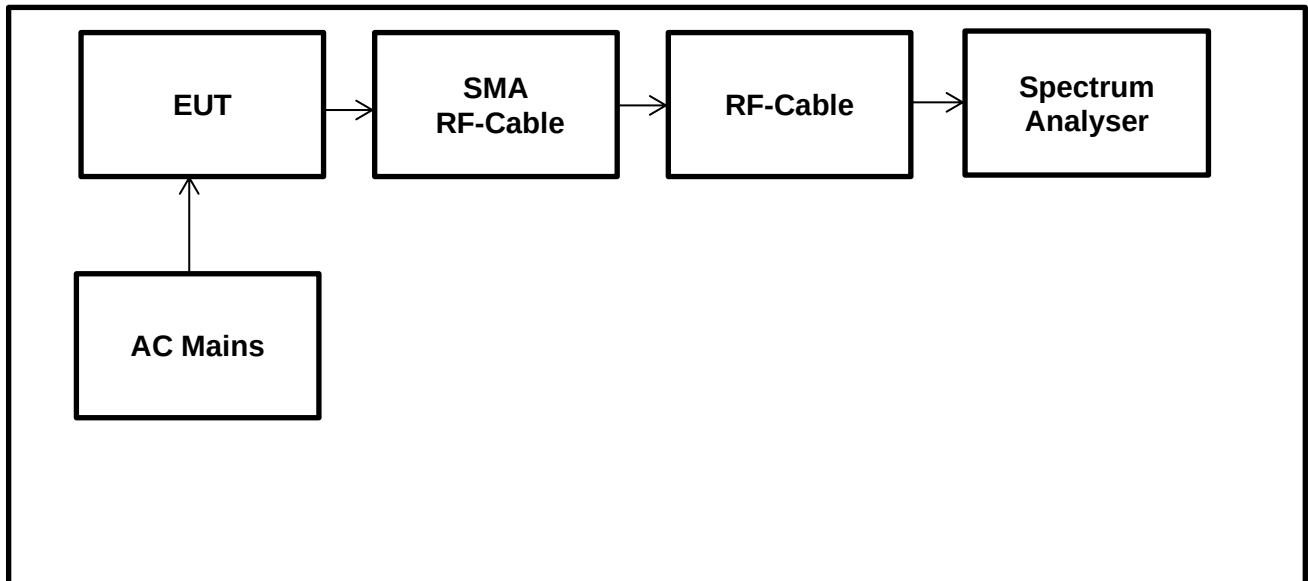
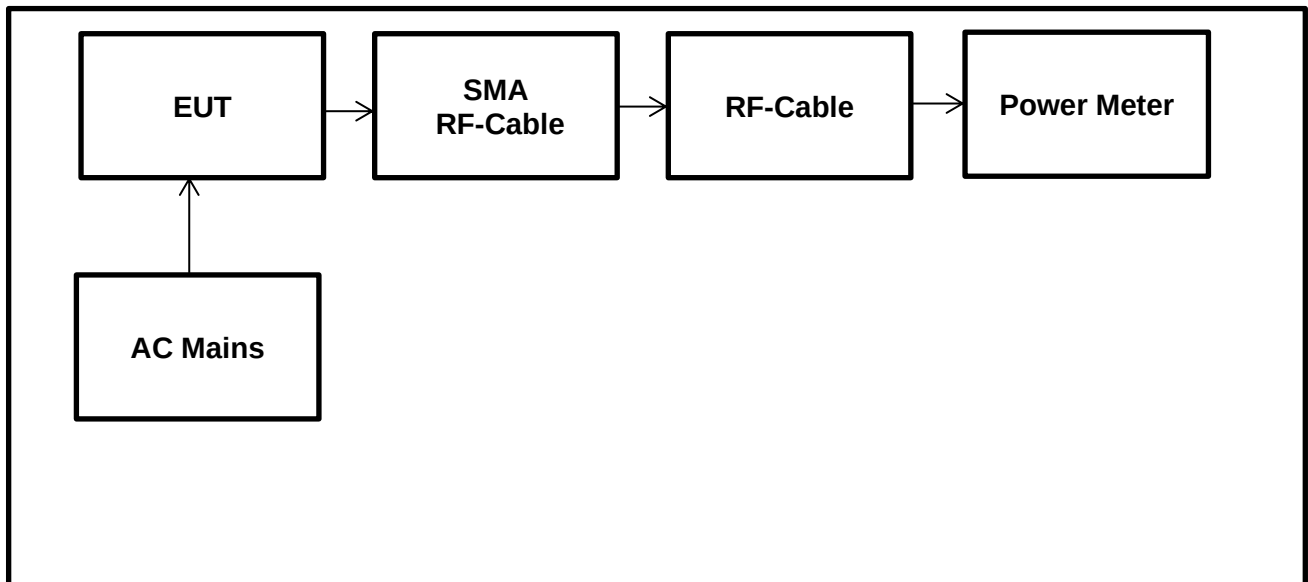
- The EUT can be connected with the Test laptop via USB-UART cables supplied by the customer. The cable was used only for configuration and was removed during the measurement.
- The test modes were activated by the terminal software 'PuTTY'. The commands to setup the respective modes and power were defined by the customer in the setup instructions.
- The transmitter test mode was configured to power settings according to the customer setup instruction.

Conducted Measurements:

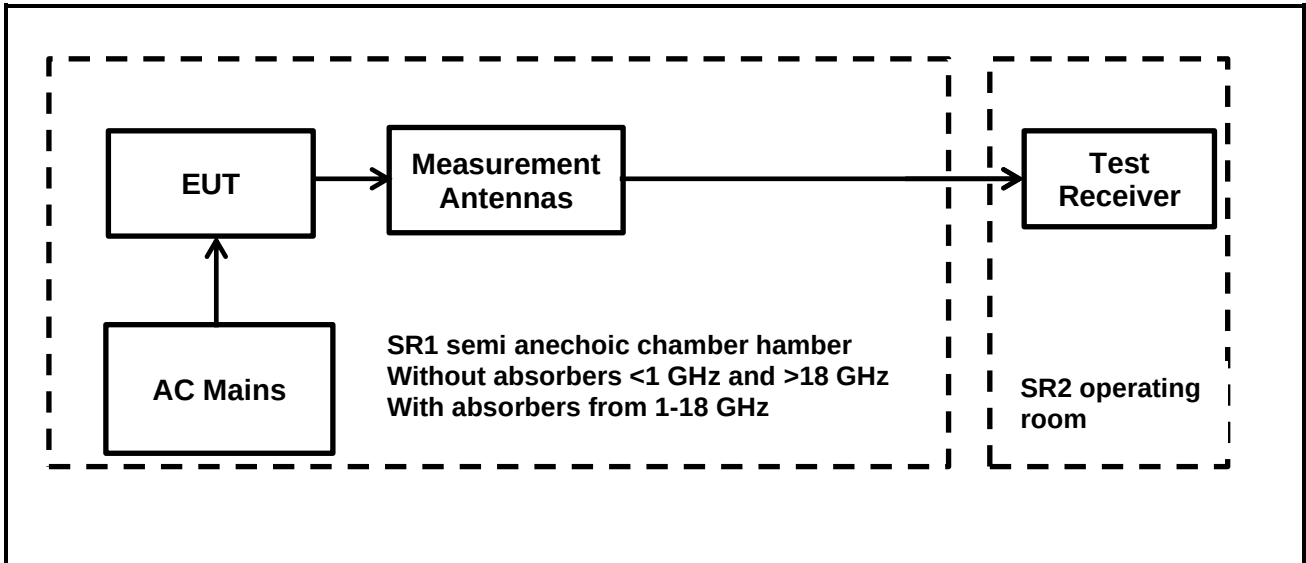
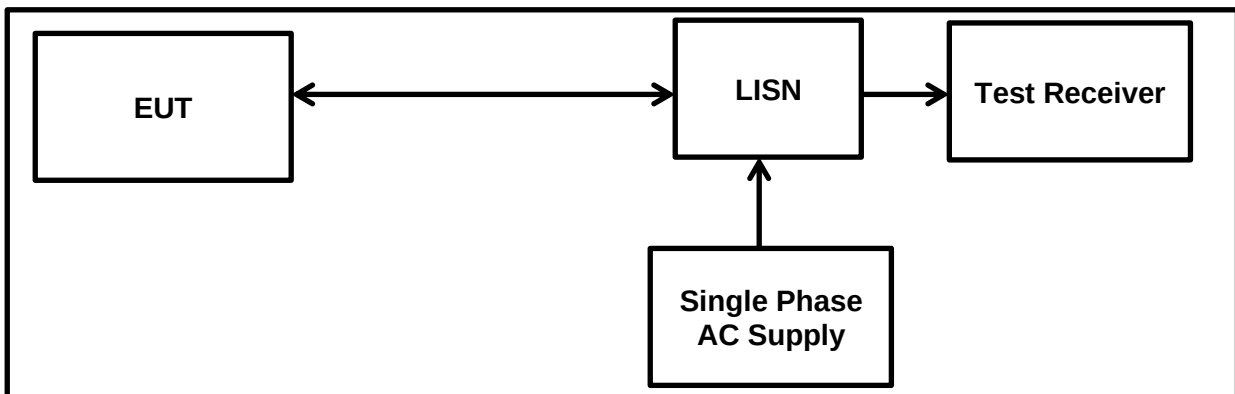
- All conducted measurements were carried out by using the EUT RF sample with SMA cable soldered on to the PCB. The SMA RF cable's attenuation (maximum 1 dB@5GHz) was added to as a reference level offset to each of the conducted plots.

Radiated Measurements:

- For radiated measurements were performed with the radiated test sample.
- Before starting the measurements EUT in standing and laying position with its antenna was evaluated for the worst-case position w.r.t to maximum radiated power measured and following positions of the antenna were found out to be the worst case. Therefore, this report includes relevant results.
 - o External Antenna (External): Vertically placed in y-axis parallel to the Laying EUT.
 - o PCB Antenna (Internal): EUT in Laying position.
- Radiated measurements below 30 MHz were performed with the EUT positioned on the turn table and rotating 360 degrees while the loop antenna height was set at 100 cm.
- Radiated measurements above 30 MHz were performed with the EUT positioned on the turn table and rotating 360° while antenna height varies from 1 to 4m over the frequency range.
- R&S® EMC32 V11.30 Software was used for the Radiated spurious emission measurements.
- As the continuous transmission of the EUT ($D \geq 98\%$) can be achieved and EUT was transmitting continuously with 100% duty cycle (+/- 2% tolerance). Duty Cycle Correction Factor was not added to all average measurements.

Test Setup Diagrams**Conducted Tests:****Test Setup for Transmitter Minimum 6dB Bandwidth, Transmitter 26dB Bandwidth, Transmitter 99% Emission Bandwidth and Power Spectral Density****Test Setup for Maximum Peak Output Power**

Test Setup Diagrams (continued)

Radiated Tests:**Test Setup for Transmitter Radiated Emissions****Test Setup for Transmitter AC Conducted Spurious Emissions**

4. Measurements, Examinations and Derived Results

4.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

In accordance with DAkkS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

4.2. Test Results

4.2.1. Transmitter AC Conducted Spurious Emissions

Test Summary:

Test Engineers:	Abbas Al-Hussainy	Test Dates:	18 March 2024
Test Sample Serial Number:	6869032 (Radiated Test Sample)		
Test Site Identification	SR 7/8		

FCC Reference:	Part 15.207
Test Method Used:	ANSI C63.10 Section 6.2 / FCC KDB 174176 and notes below

Environmental Conditions:

Temperature (°C):	22.4
Relative Humidity (%):	49.0

Settings of the Instrument

Detector	Quasi Peak/ Average Peak
----------	--------------------------

Note(s):

1. In accordance with FCC KDB 174176 Q4, tests were performed with 120 VAC 60 & 240 VAC 60 Hz single phase.
2. Preliminary measurements were performed at both 50 Hz and 60 Hz supply frequencies. There was no change to the observed emissions.
3. Measurement performed with both antennas but only the measurement with Internal antenna is reported as it is the worst case.
4. The EUT was configured with the following modes:
n20-Mode | MCS5 | Power Level 16 | Channel 64: 5320 MHz | Internal antenna
5. Pre-scans were performed, and markers placed on the highest live and neutral measured levels. Final measurements were performed on the marker frequencies and the results entered into the tables below.
6. The final measured value, for the given emission, in the table below incorporates the cable loss.
7. All other emissions shown on the pre-scan plot were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.
8. Measurements were performed in shielded room (SR7/ 8 Asset Number 1603671). The EUT was placed at a height of 80 cm above the reference ground plane and in a distance of 40 cm from the vertical ground plane at the edge of the table.
9. Measurement software used: Toyo EMI Software; CE measurement software EP5/CE Ver 4.0.1.

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Results: Live / Quasi Peak / 120 VAC 60 Hz**

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.20400	Live	54.9	63.4	8.5	Complied
0.26351	Live	56.2	61.3	5.1	Complied
0.33818	Live	50.5	59.2	8.7	Complied
0.40352	Live	48.8	57.8	9.0	Complied
0.46311	Live	42.4	56.6	14.2	Complied
0.48685	Live	37.8	56.2	18.4	Complied
0.53003	Live	39.7	56.0	16.3	Complied
0.60364	Live	36.0	56.0	20.0	Complied
0.66758	Live	37.9	56.0	18.1	Complied

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Results: Live / Average / 120 VAC 60 Hz**

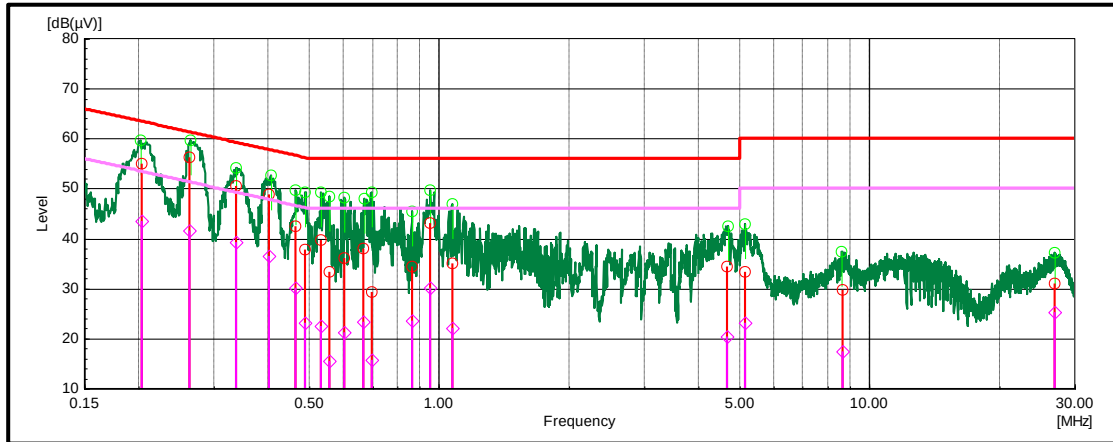
Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.20400	Live	43.5	53.4	9.9	Complied
0.26351	Live	41.7	51.3	9.6	Complied
0.33818	Live	39.2	49.2	10.0	Complied
0.40352	Live	36.6	47.8	11.2	Complied
0.46311	Live	30.2	46.6	16.4	Complied
0.48685	Live	23.2	46.2	23.0	Complied
0.53003	Live	22.6	46.0	23.4	Complied
0.95135	Live	30.2	46.0	15.8	Complied

Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna**Results: Neutral / Quasi Peak / 120 VAC 60 Hz**

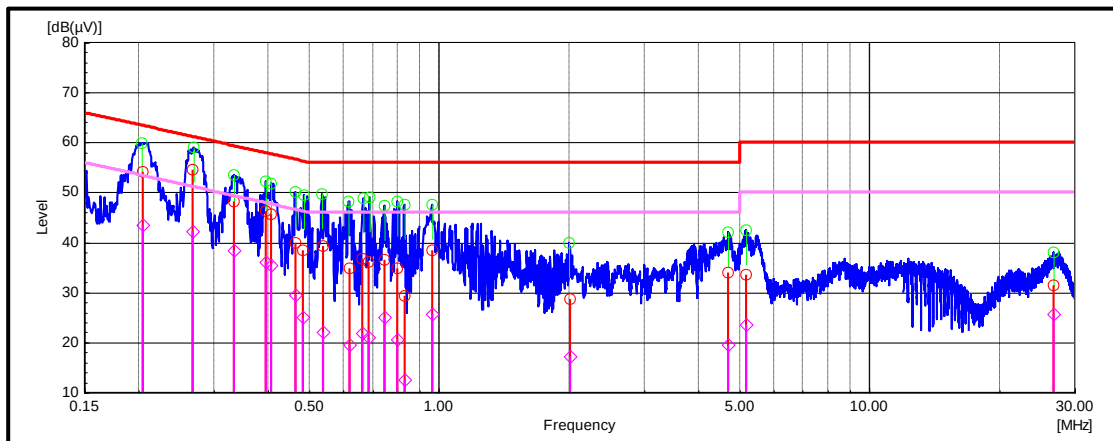
Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.20479	Neutral	54.2	63.4	9.2	Complied
0.26787	Neutral	54.5	61.2	6.7	Complied
0.33421	Neutral	48.3	59.3	11.0	Complied
0.39668	Neutral	46.3	57.9	11.6	Complied
0.40595	Neutral	45.7	57.7	12.0	Complied
0.46400	Neutral	39.9	56.6	16.7	Complied
0.48329	Neutral	38.4	56.3	17.9	Complied
0.53732	Neutral	39.2	56.0	16.8	Complied
0.66339	Neutral	36.6	56.0	19.4	Complied
0.68788	Neutral	36.1	56.0	19.9	Complied
0.74514	Neutral	36.5	56.0	19.5	Complied
0.96467	Neutral	38.5	56.0	17.5	Complied

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Results: Neutral / Average / 120 VAC 60 Hz**

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.20479	Neutral	43.4	53.4	10.0	Complied
0.26787	Neutral	42.3	51.2	8.9	Complied
0.33421	Neutral	38.5	49.3	10.8	Complied
0.39668	Neutral	36.1	47.9	11.8	Complied
0.40595	Neutral	35.5	47.7	12.2	Complied
0.46400	Neutral	29.6	46.6	17.0	Complied
0.74514	Neutral	25.2	46.0	20.8	Complied

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Plot: Live Line / 120 VAC 60 Hz**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Plot: Neutral Line / 120 VAC 60 Hz

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Result: Pass

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Results: Live / Quasi Peak / 240 VAC 60 Hz**

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.21267	Live	50.2	63.1	12.9	Complied
0.26037	Live	50.6	61.4	10.8	Complied
0.33335	Live	42.6	59.4	16.8	Complied
0.39910	Live	48.3	57.9	9.6	Complied
0.46114	Live	43.8	56.7	12.9	Complied
0.48845	Live	43.1	56.2	13.1	Complied
0.53264	Live	44.3	56.0	11.7	Complied
0.63028	Live	41.0	56.0	15.0	Complied
0.78612	Live	39.4	56.0	16.6	Complied
0.99731	Live	40.1	56.0	15.9	Complied
4.53506	Live	36.6	56.0	19.4	Complied

Results: Live / Average / 240 VAC 60 Hz

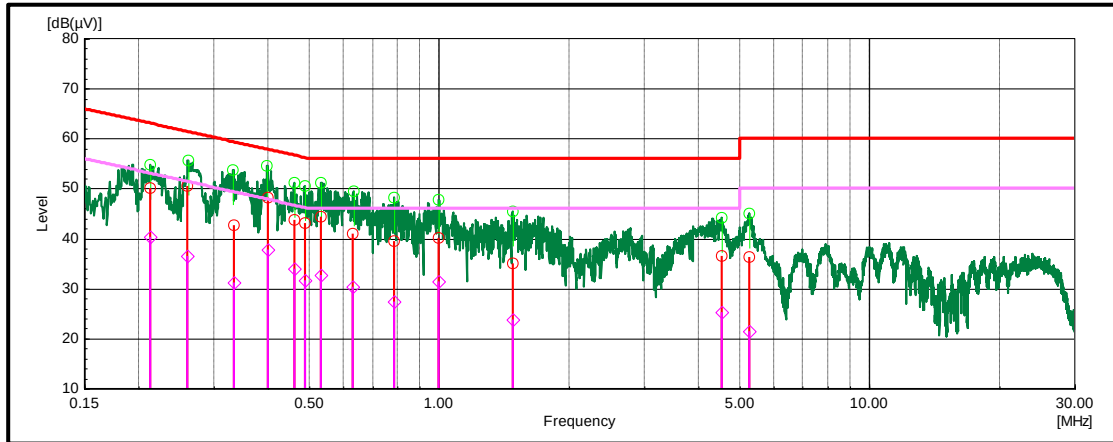
Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.21267	Live	40.3	53.1	12.8	Complied
0.26037	Live	36.6	51.4	14.8	Complied
0.33335	Live	31.2	49.4	18.2	Complied
0.39910	Live	37.8	47.9	10.1	Complied
0.46114	Live	33.9	46.7	12.8	Complied
0.48845	Live	31.6	46.2	14.6	Complied
0.53264	Live	32.7	46.0	13.3	Complied
0.63028	Live	30.3	46.0	15.7	Complied
0.78612	Live	27.4	46.0	18.6	Complied
0.99731	Live	31.5	46.0	14.5	Complied
4.53506	Live	25.2	46.0	20.8	Complied

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Results: Neutral / Quasi Peak / 240 VAC 60 Hz**

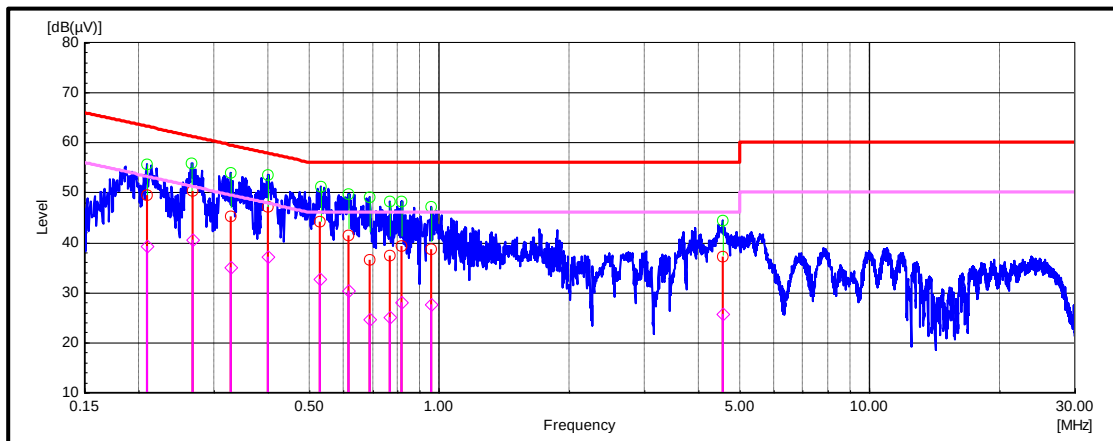
Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.21019	Neutral	49.5	63.2	13.7	Complied
0.26696	Neutral	50.3	61.2	10.9	Complied
0.32845	Neutral	45.2	59.5	14.3	Complied
0.40064	Neutral	47.2	57.8	10.6	Complied
0.52957	Neutral	44.1	56.0	11.9	Complied
0.61521	Neutral	41.5	56.0	14.5	Complied
0.69057	Neutral	36.5	56.0	19.5	Complied
0.77027	Neutral	37.4	56.0	18.6	Complied
0.81747	Neutral	39.2	56.0	16.8	Complied
0.95975	Neutral	38.7	56.0	17.3	Complied
4.56544	Neutral	37.1	56.0	18.9	Complied

Results: Neutral / Average / 240 VAC 60 Hz

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.21019	Neutral	39.2	53.2	14.0	Complied
0.26696	Neutral	40.5	51.2	10.7	Complied
0.32845	Neutral	35.0	49.5	14.5	Complied
0.40064	Neutral	37.1	47.8	10.7	Complied
0.52957	Neutral	32.7	46.0	13.3	Complied
0.61521	Neutral	30.4	46.0	15.6	Complied
0.81747	Neutral	28.1	46.0	17.9	Complied
0.95975	Neutral	27.7	46.0	18.3	Complied
4.56544	Neutral	25.7	46.0	20.3	Complied

Transmitter AC Conducted Spurious Emissions (continued)**Results: 802.11n / 20 MHz / MCS5 / PWR 16 / CH64 / Internal Antenna****Plot: Live Line / 240 VAC 60 Hz**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Plot: Neutral Line / 240 VAC 60 Hz

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Result: Pass

4.2.2. Transmitter 26 dB Bandwidth

Test Summary:

Test Engineer:	Abbas Al-Hussainy	Test Date:	13 March 2024
Test Sample Serial Number:	6869033 (Conducted Test Sample)		
Test Site Identification	SR 9		

FCC Reference:	Part 15.403
ISED Reference:	--
Test Method Used:	KDB 789033 D02 Section II.C.1.

Environmental Conditions:

Temperatures (°C):	22.7
Relative Humidity (%):	40.8

Notes:

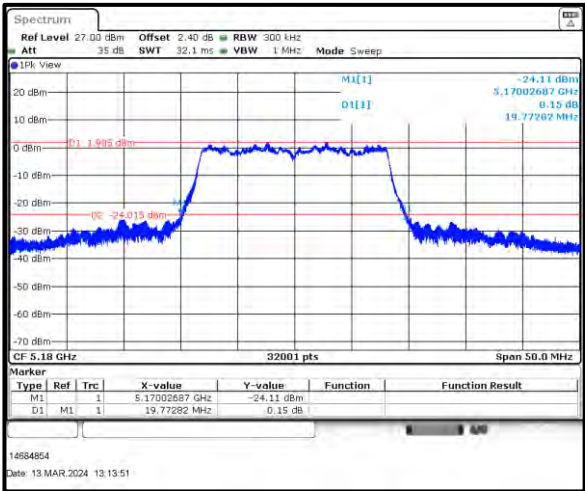
1. All configurations supported by the EUT were investigated on the one channel in accordance with KDB 789033 Section II.C.1. Emission Bandwidth (EBW) test procedure.
2. The spectrum analyser resolution bandwidth was set to 300 kHz / 500 kHz (approximately 1% of the emission bandwidth) and video bandwidth 1 MHz / 2 MHz (> RBW). A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The Emission Bandwidth was measured at 26 dB down from the peak of the signal.
3. Final measurements were performed using the below configurations on the bottom, middle and top channels.
4. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values takes into consideration the external attenuation correction factors.
 - The SMA (Female) RF Cable soldered on PCB with maximum attenuation of 1 dB at the tested frequencies.
 - The RF cable attenuation maximum 1.4 dB@5GHz from the EUT to Analyzer

Therefore, total a reference level offset 2.4 dB was added to each of the at the tested frequencies conducted plots.

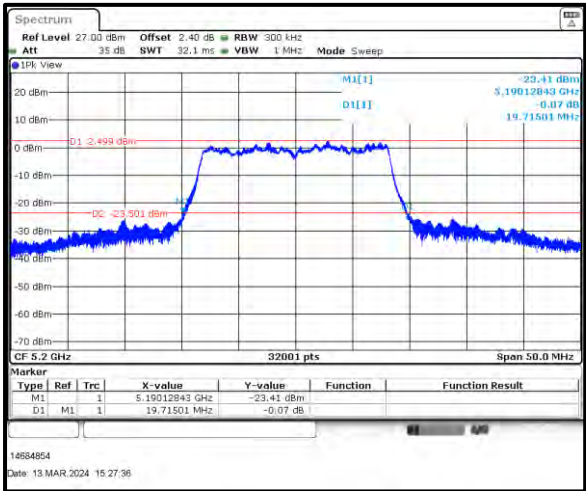
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-1 / 802.11a

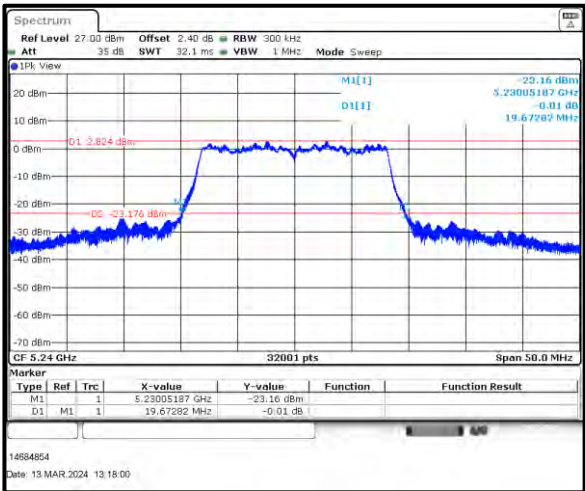
Channel	26 dB Emission Bandwidth (MHz)
Bottom	19.773
Middle	19.715
Top	19.673



Bottom



Middle



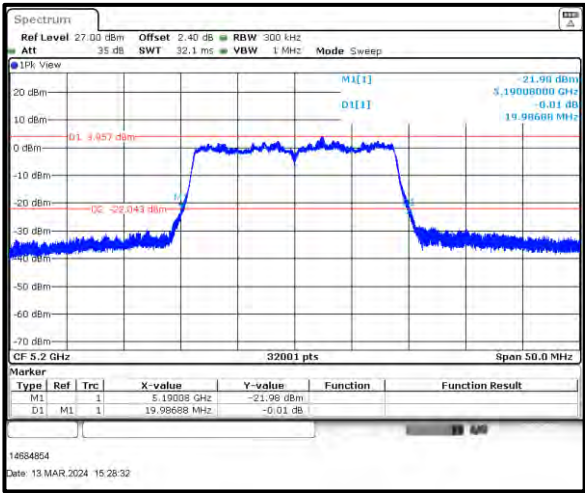
Top

Result: Pass

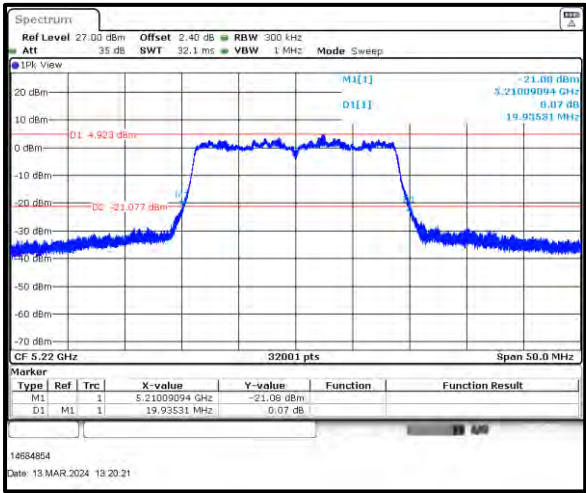
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-1 / 802.11n20

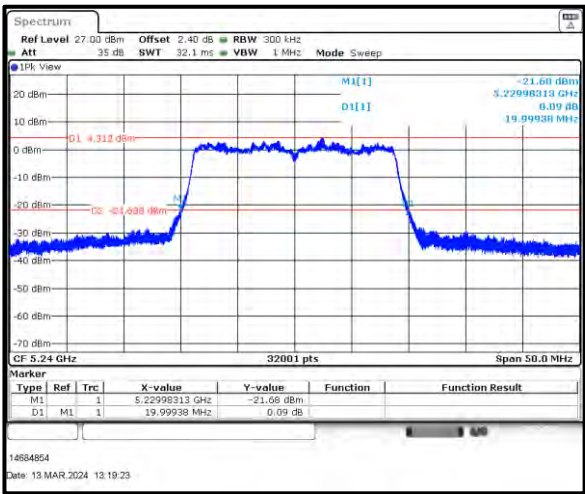
Channel	26 dB Emission Bandwidth (MHz)
Bottom	19.987
Middle	19.935
Top	19.999



Bottom



Middle



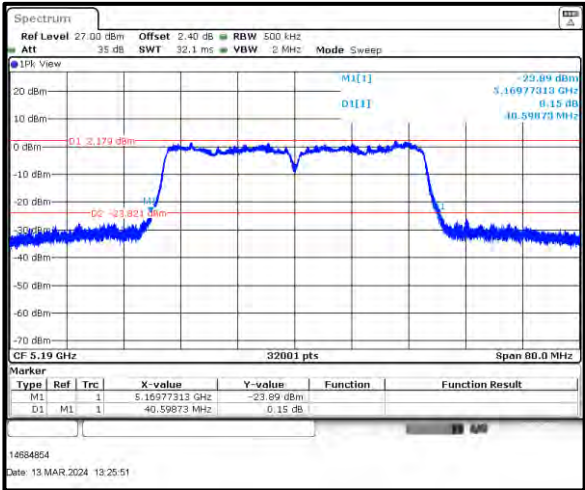
Top

Result: Pass

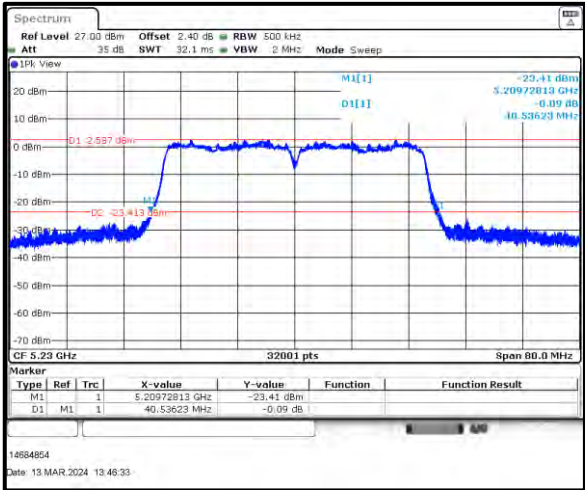
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-1 / 802.11n40

Channel	26 dB Emission Bandwidth (MHz)
Bottom	40.599
Top	40.536



Bottom



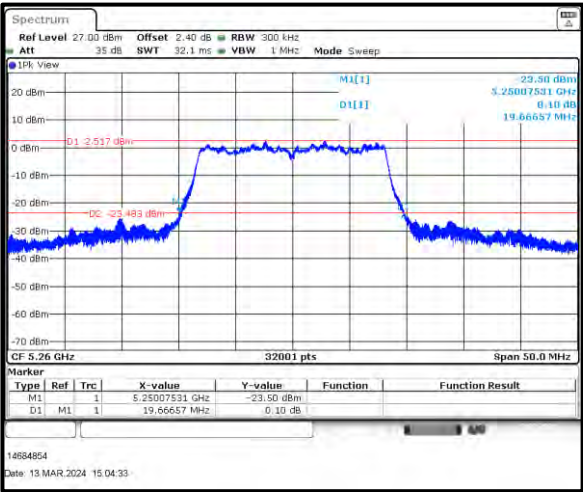
Top

Result: Pass

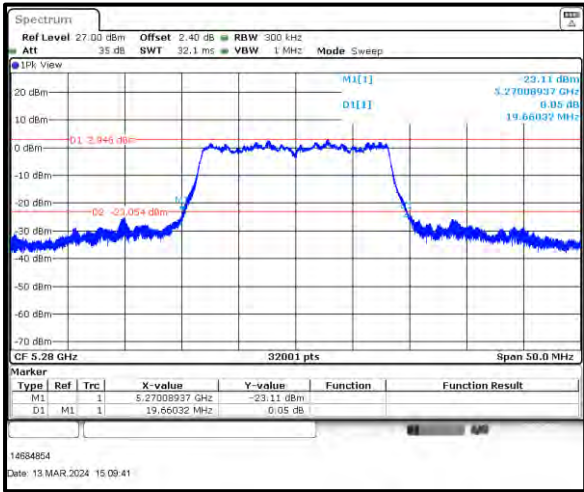
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2A / 802.11a

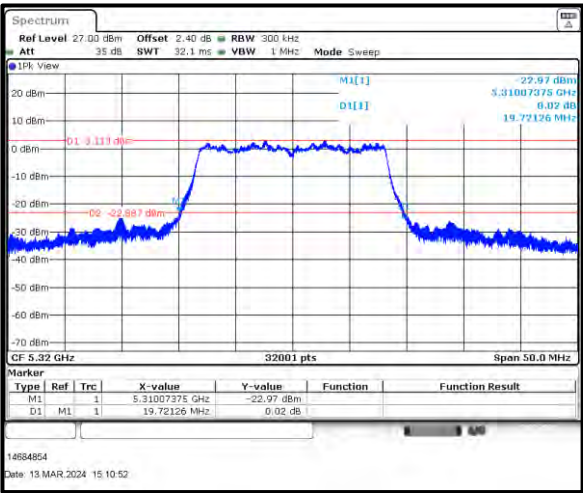
Channel	26 dB Emission Bandwidth (MHz)
Bottom	19.667
Middle	19.660
Top	19.721



Bottom



Middle



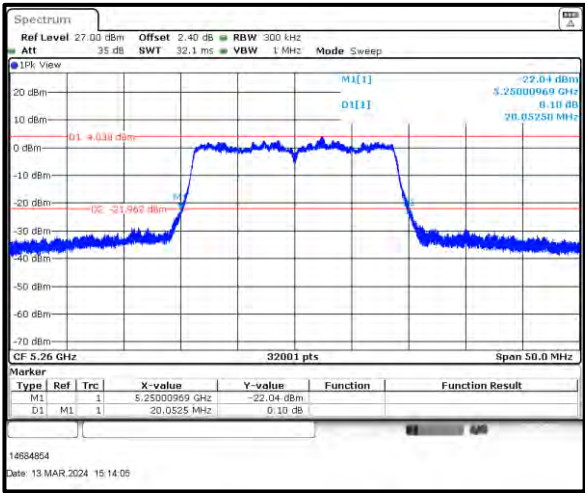
Top

Result: Pass

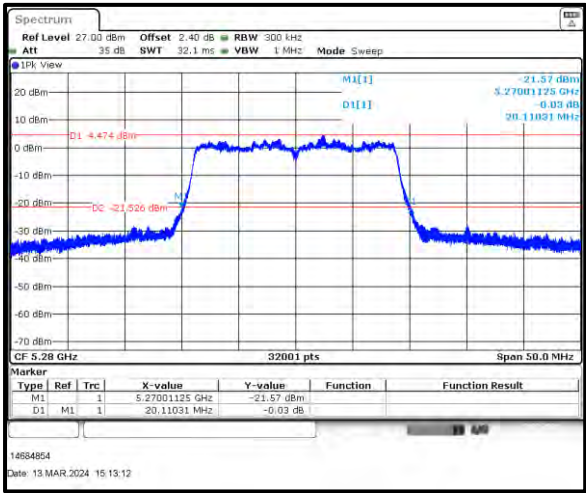
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2A / 802.11n20

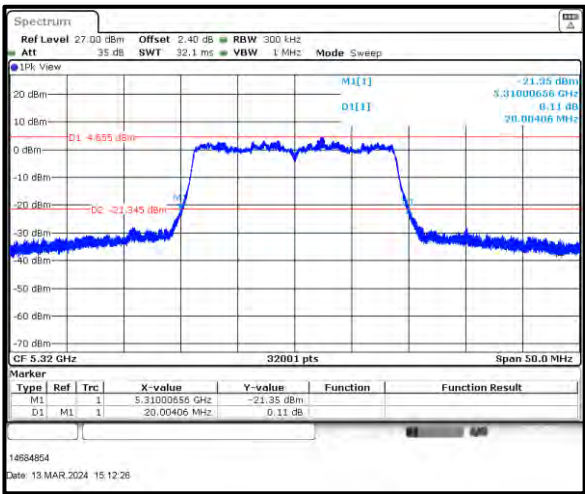
Channel	26 dB Emission Bandwidth (MHz)
Bottom	20.053
Middle	20.110
Top	20.004



Bottom



Middle



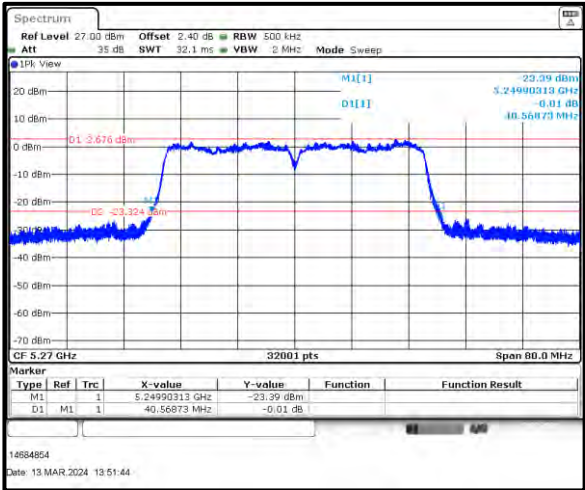
Top

Result: Pass

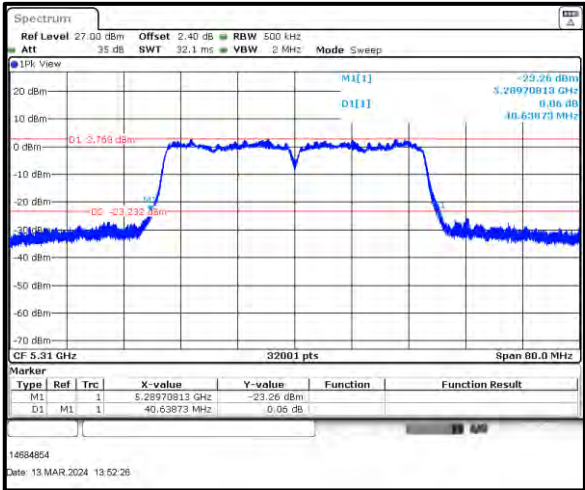
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2A / 802.11n40

Channel	26 dB Emission Bandwidth (MHz)
Bottom	40.569
Top	40.639



Bottom



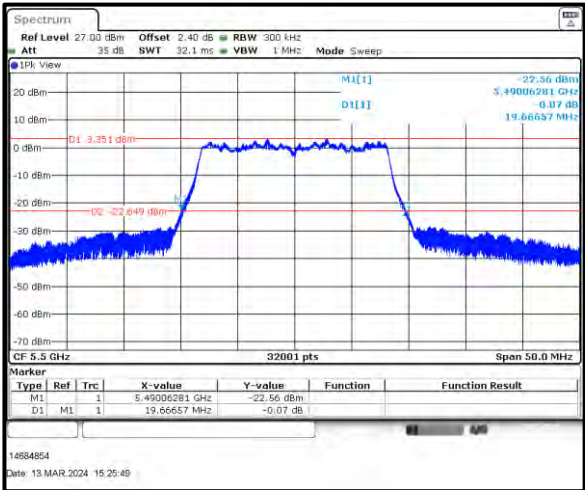
Top

Result: Pass

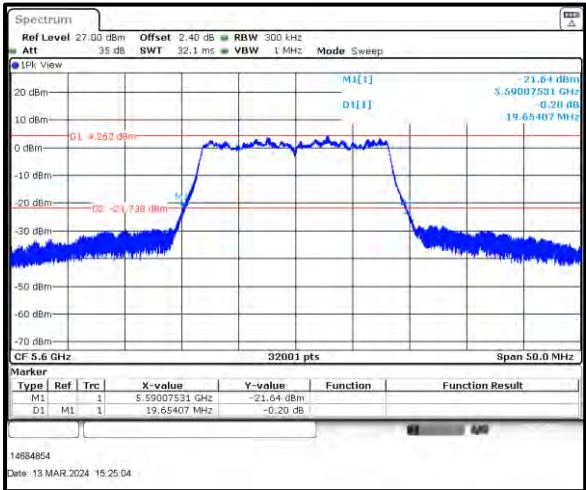
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2C / 802.11a

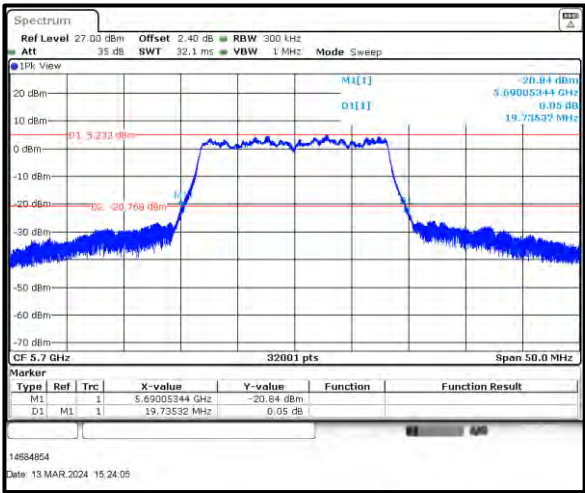
Channel	26 dB Emission Bandwidth (MHz)
Bottom	19.667
Middle	19.654
Top	19.735



Bottom



Middle



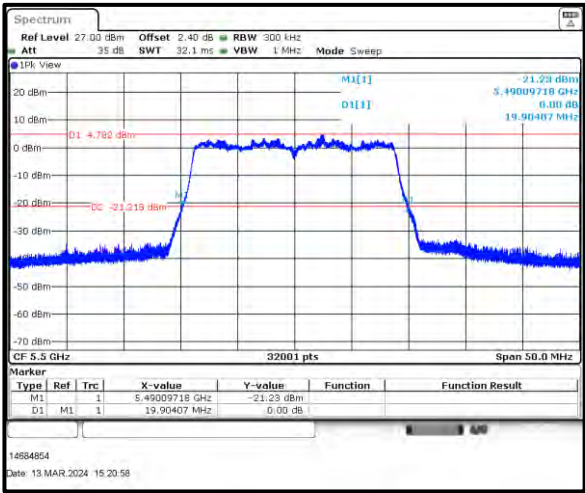
Top

Result: Pass

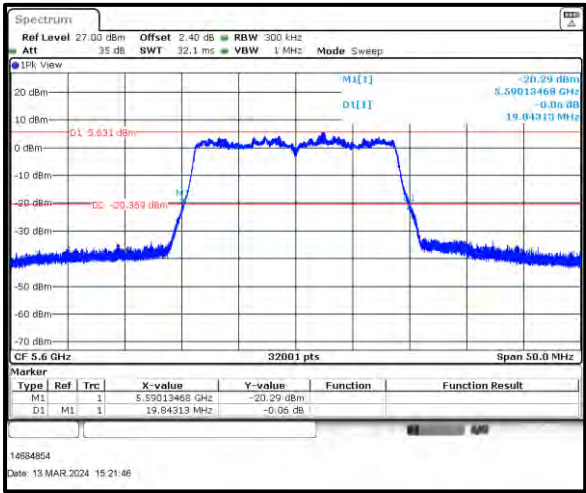
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2C / 802.11n20

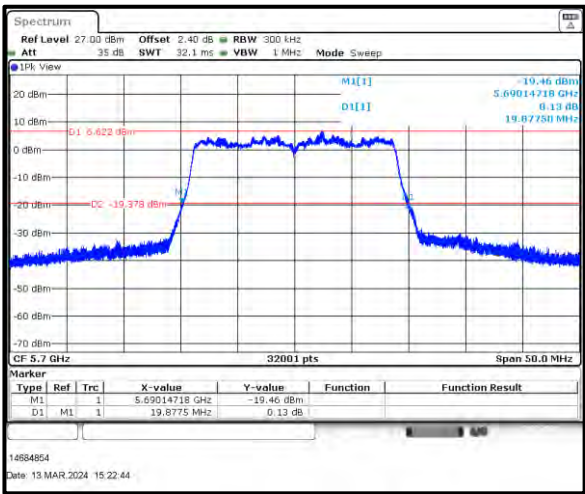
Channel	26 dB Emission Bandwidth (MHz)
Bottom	19.904
Middle	19.843
Top	19.878



Bottom



Middle



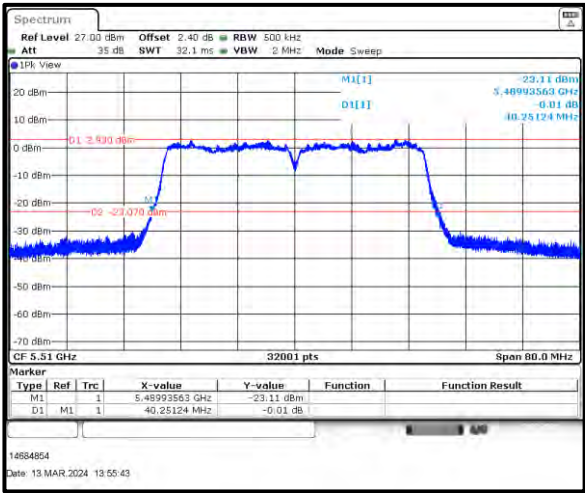
Top

Result: Pass

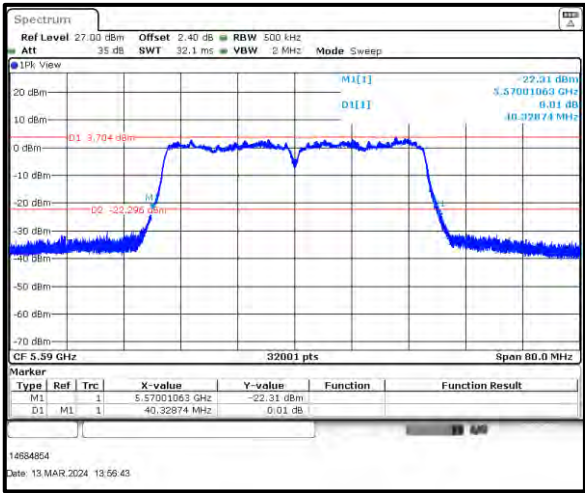
Transmitter 26 dB Emission Bandwidth (continued)

Results: UNII-2C / 802.11n40

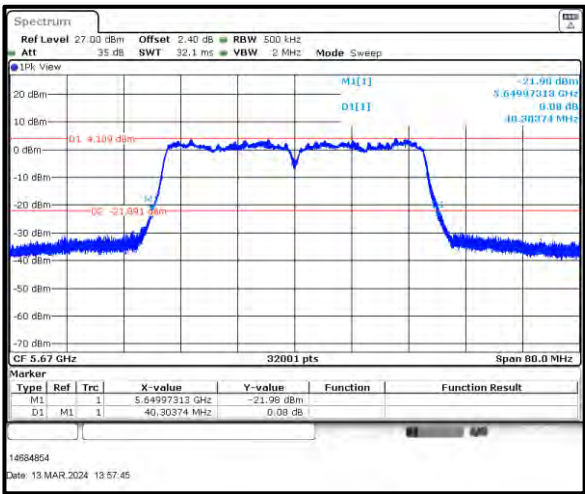
Channel	26 dB Emission Bandwidth (MHz)
Bottom	40.251
Middle	40.329
Top	40.304



Bottom



Middle



Top

Result: Pass

4.2.3. Transmitter 99% Emission Bandwidth

Test Summary:

Test Engineer:	Abbas Al-Hussainy	Test Date:	13 March 2024
Test Sample Serial Number:	6869033 (Conducted Test Sample)		
Test Site Identification	SR 9		

FCC Reference:	-
ISED Reference:	RSS-Gen 6.7
Test Method Used:	RSS-Gen 6.7 ANSI 12.5.3 referencing 6.9.3

Environmental Conditions:

Temperature (°C):	22.7
Relative Humidity (%):	40.8

Notes:

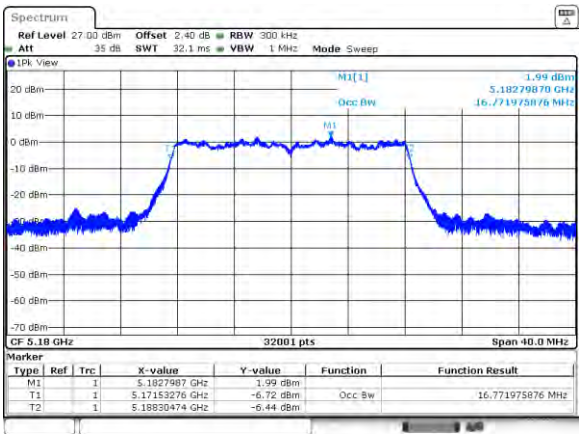
1. The 99% emission bandwidth was measured using the spectrum analyzer occupied bandwidth function. The resolution bandwidth was set in the range of 1% to 5% of the occupied bandwidth and the video bandwidth set to 3 times the resolution bandwidth. The span was set to capture all products of the modulation process including emission skirts.
2. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values take into consideration the external attenuation correction factors.
 - The SMA (Female) RF Cable soldered on PCB with maximum attenuation of 1 dB at the tested frequencies.
 - The RF cable attenuation maximum 1.4 dB@5GHz from the EUT to Analyzer

Therefore, total a reference level offset 2.4 dB was added to each of the at the tested frequencies conducted plots.

Transmitter 99%Bandwidth (continued)

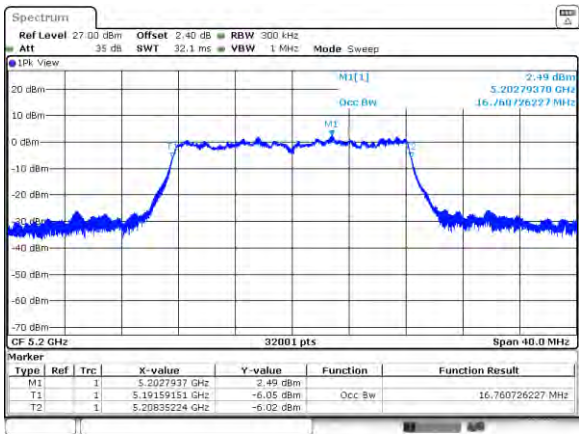
Results: UNII-1 / 802.11a

Channel	99% Emission Bandwidth (MHz)
Bottom	16.771
Middle	16.760
Top	16.755



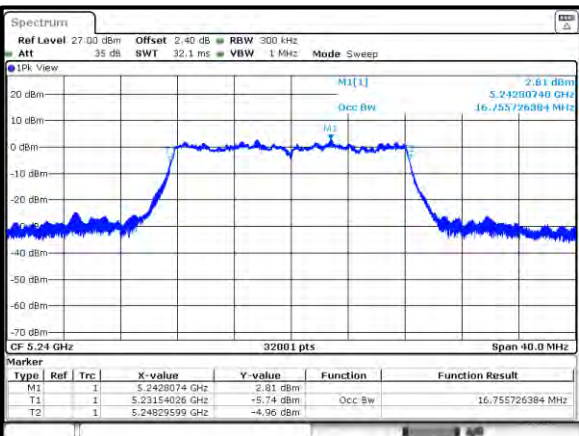
14884854
Date: 13.MAR.2024 13:14:05

Bottom



14884854
Date: 13.MAR.2024 15:27:50

Middle

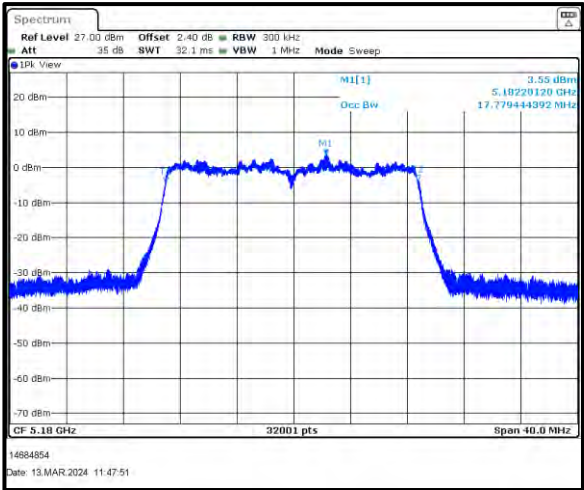


14884854
Date: 13.MAR.2024 13:18:15

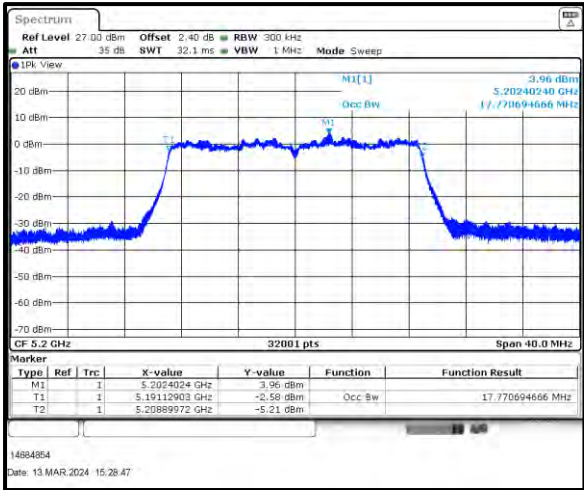
Top

Results: UNII-1 / 802.11n20

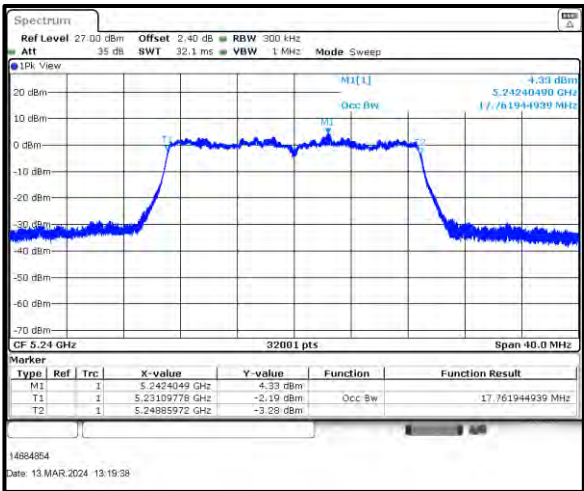
Channel	99% Emission Bandwidth (MHz)
Bottom	17.779
Middle	17.770
Top	17.761



Bottom



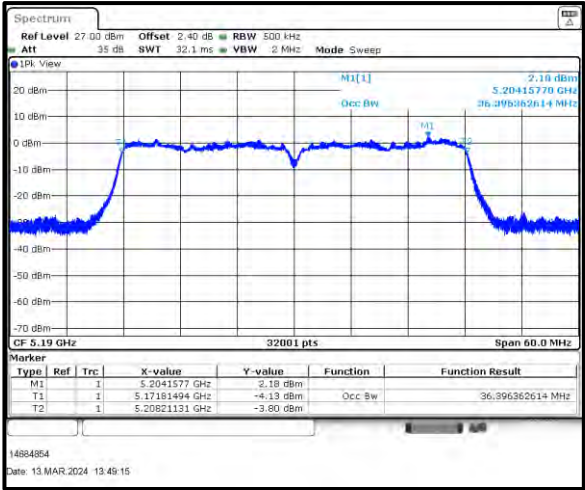
Middle



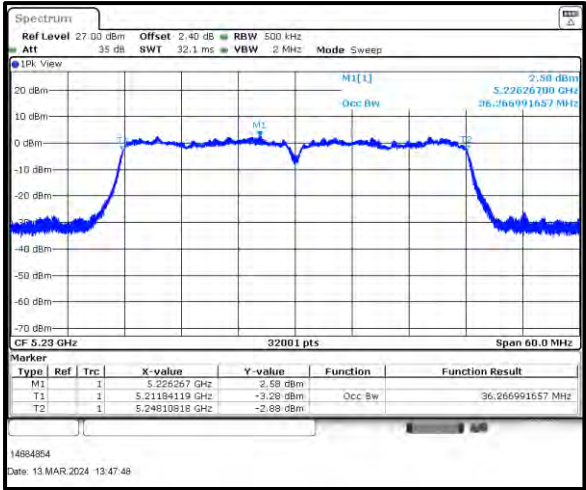
Top

Results: UNII-1 / 802.11n40

Channel	99% Emission Bandwidth (MHz)
Bottom	36.396
Top	36.266



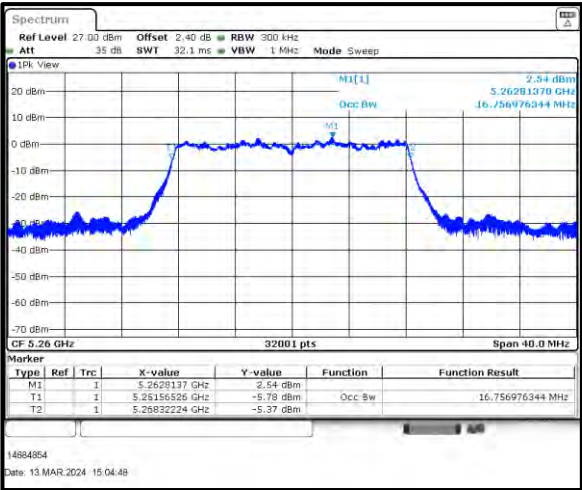
Bottom



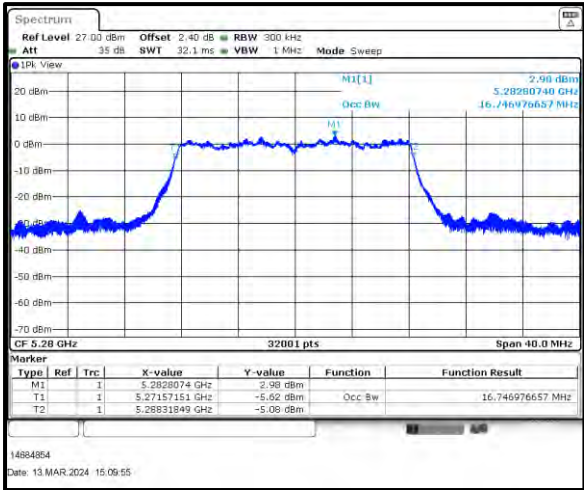
Top

Results: UNII-2A / 802.11a

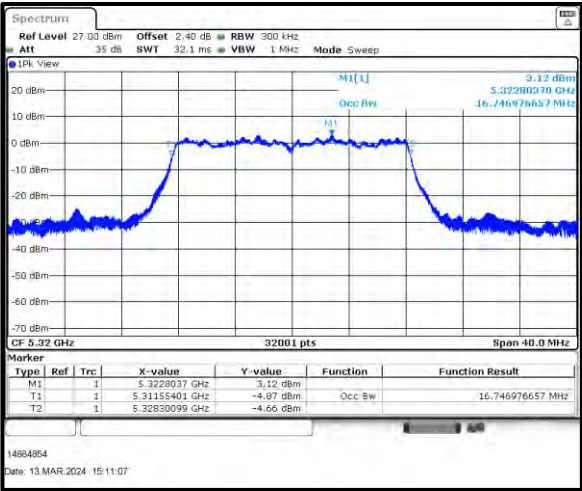
Channel	99% Emission Bandwidth (MHz)
Bottom	16.756
Middle	16.746
Top	16.746



Bottom



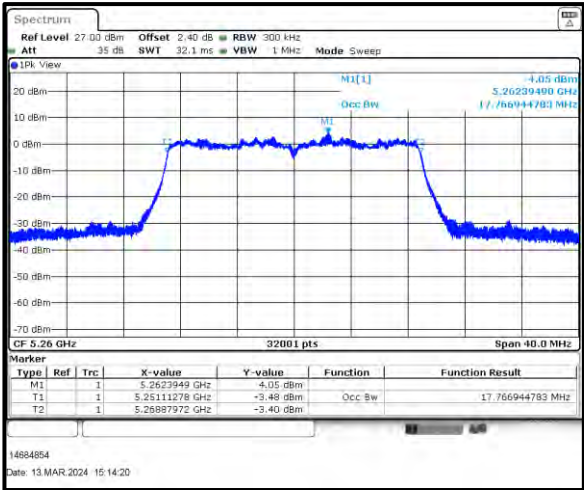
Middle



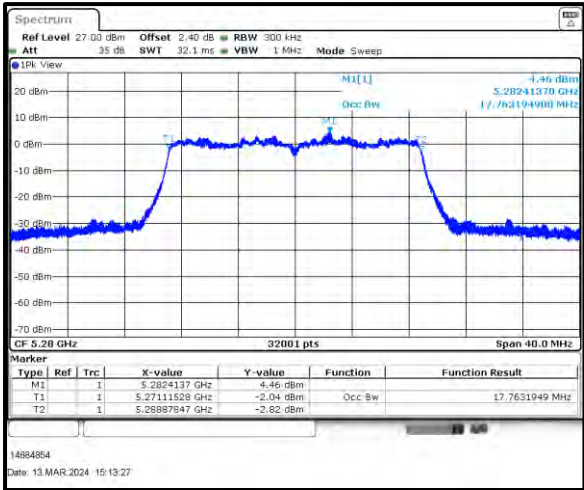
Top

Results: UNII-2A / 802.11n20

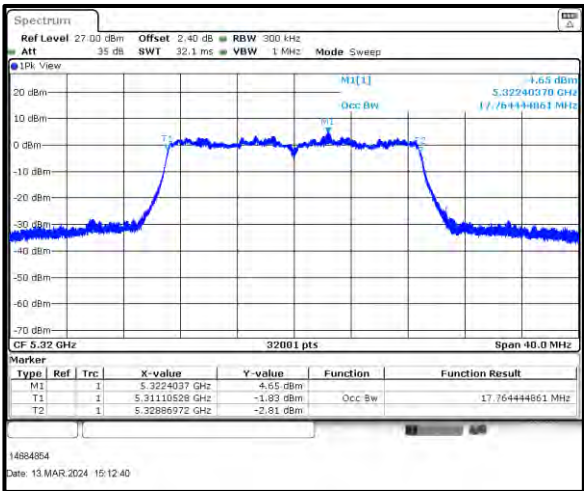
Channel	99% Emission Bandwidth (MHz)
Bottom	17.766
Middle	17.763
Top	17.764



Bottom



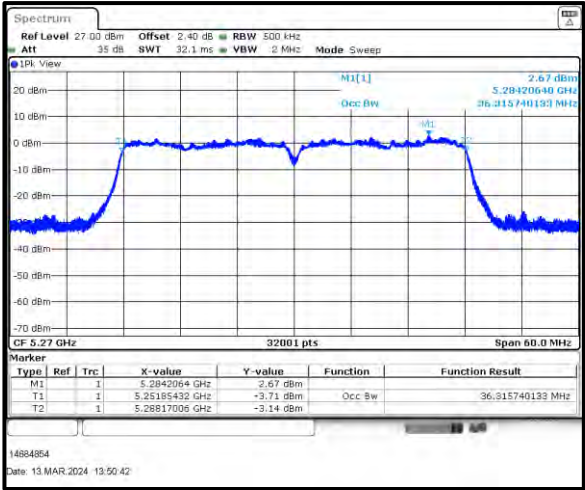
Middle



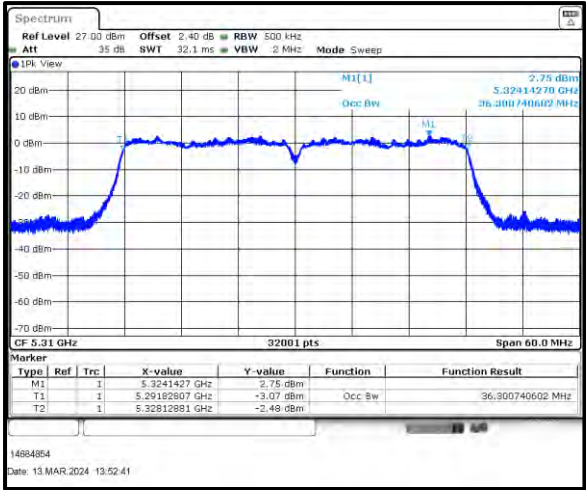
Top

Results: UNII-2A / 802.11n40

Channel	99% Emission Bandwidth (MHz)
Bottom	36.315
Top	36.300



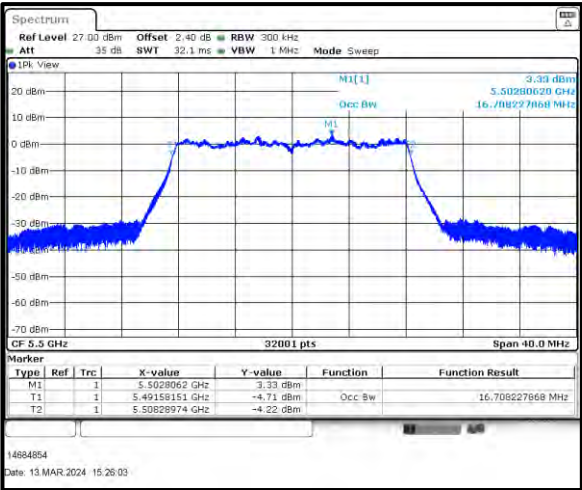
Bottom



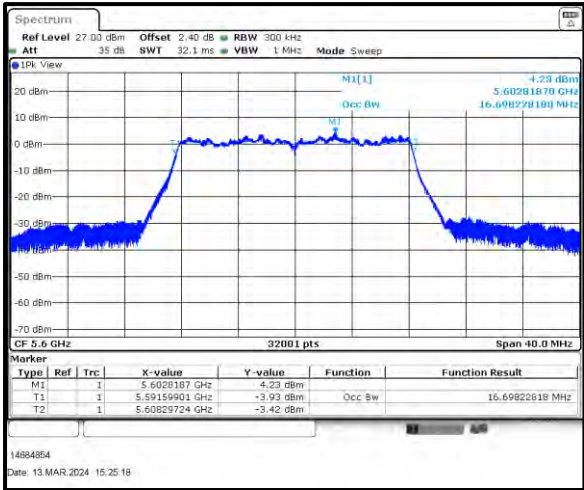
Top

Results: UNII-2C / 802.11a

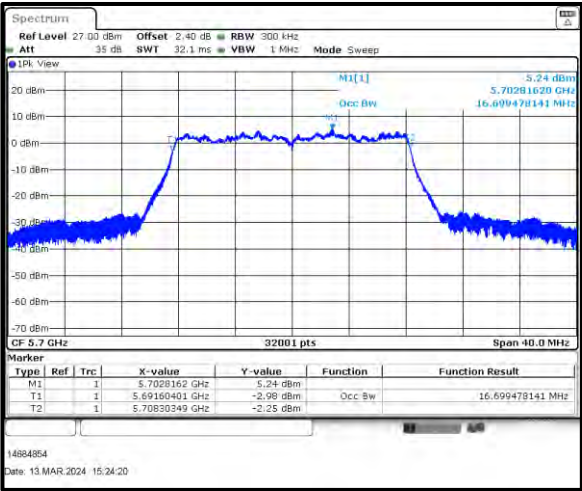
Channel	99% Emission Bandwidth (MHz)
Bottom	16.708
Middle	16.698
Top	16.699



Bottom



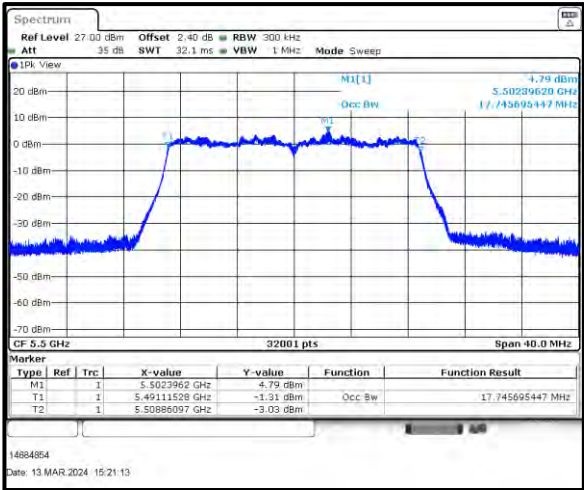
Middle



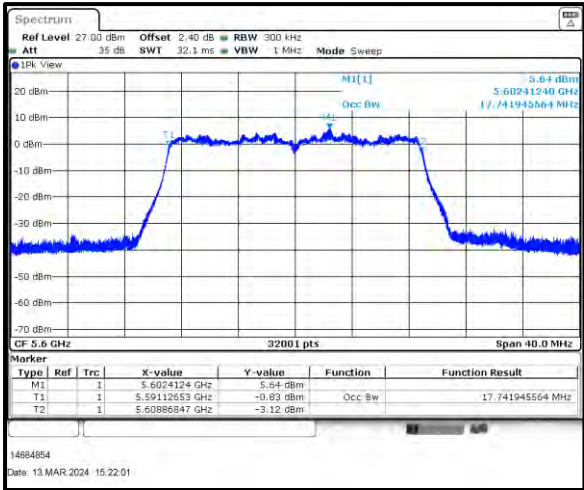
Top

Results: UNII-2C / 802.11n20

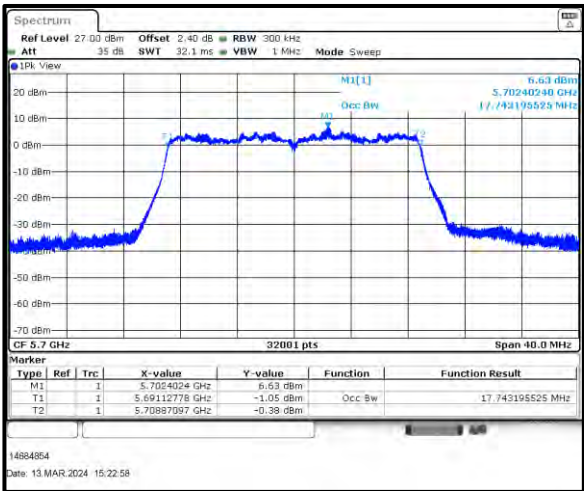
Channel	99% Emission Bandwidth (MHz)
Bottom	17.745
Middle	17.741
Top	17.743



Bottom



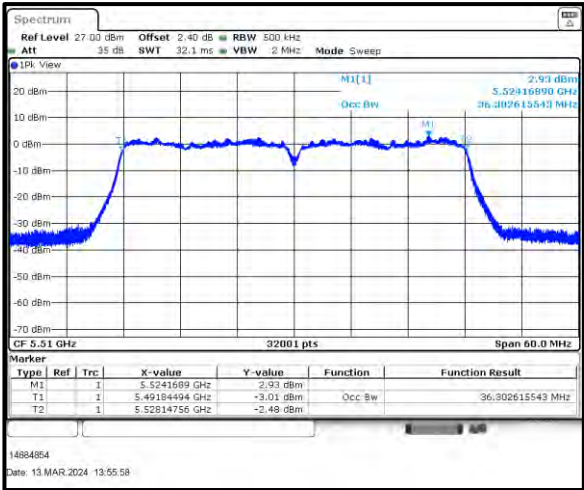
Middle



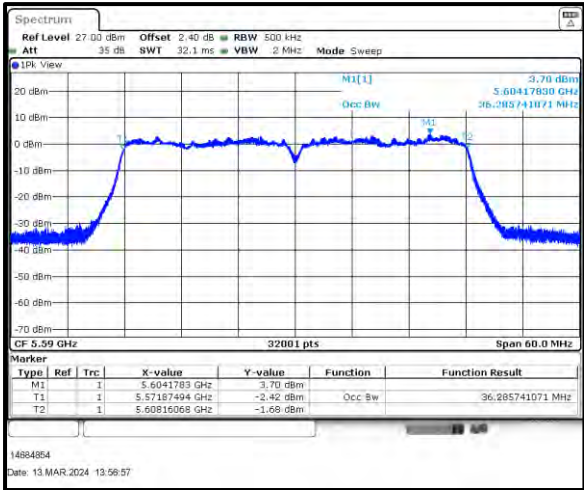
Top

Results: UNII-2C / 802.11n40

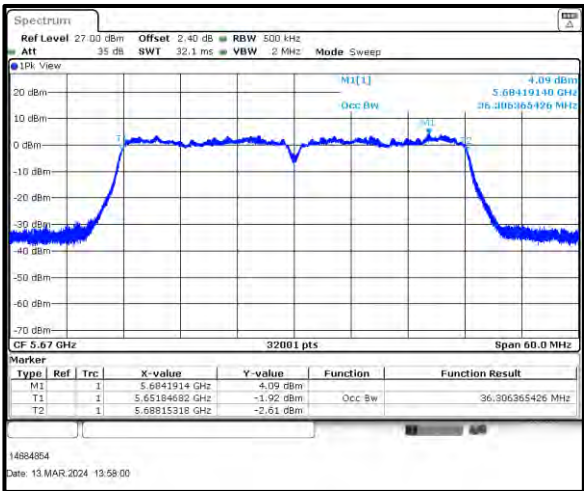
Channel	99% Emission Bandwidth (MHz)
Bottom	36.302
Middle	36.285
Top	36.306



Bottom



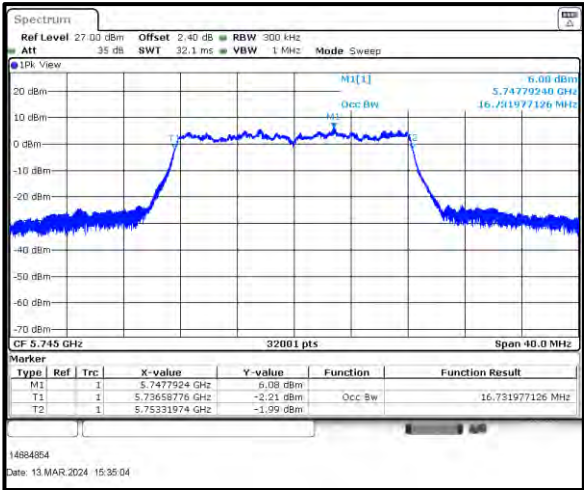
Middle



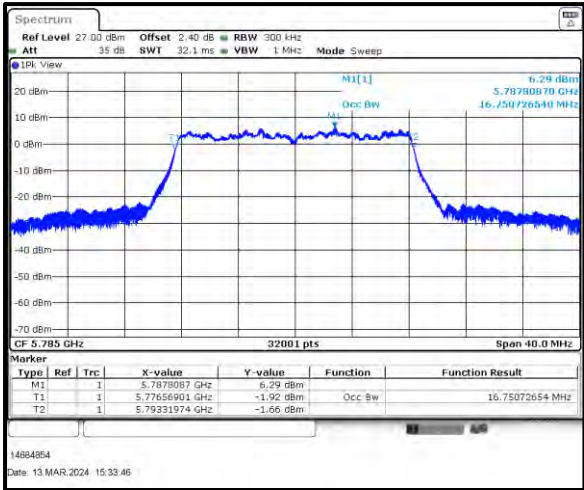
Top

Results: UNII-3 / 802.11a

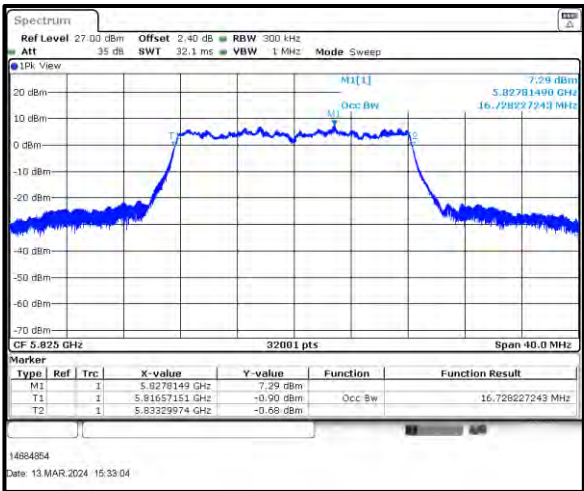
Channel	99% Emission Bandwidth (MHz)
Bottom	16.731
Middle	16.750
Top	16.728



Bottom



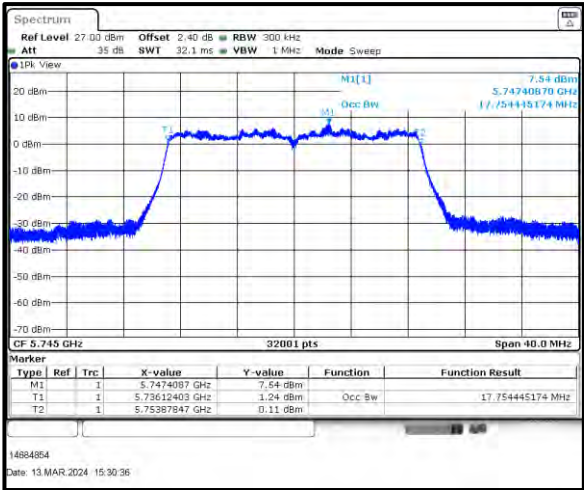
Middle



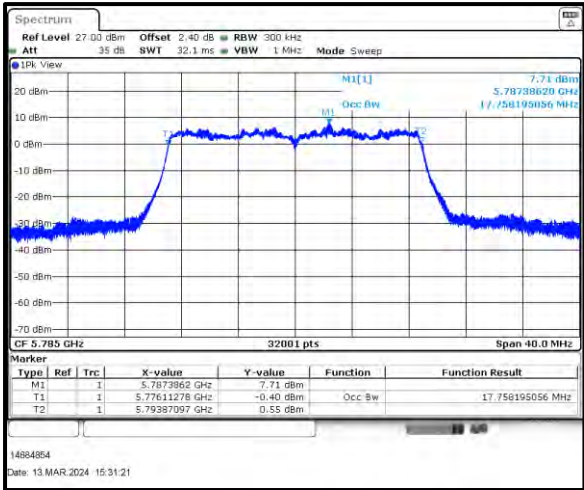
Top

Results: UNII-3 / 802.11n20

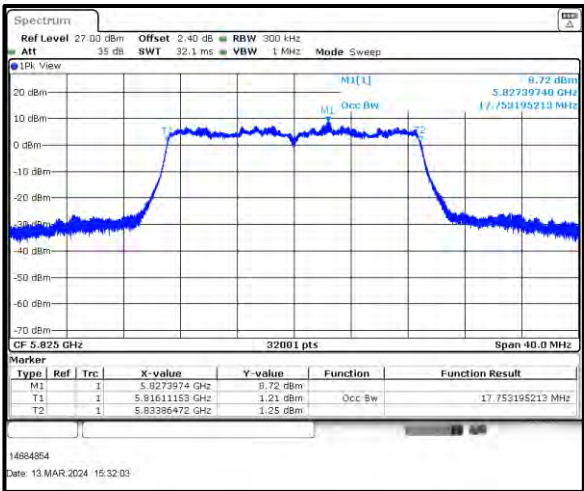
Channel	99% Emission Bandwidth (MHz)
Bottom	17.754
Middle	17.758
Top	17.753



Bottom



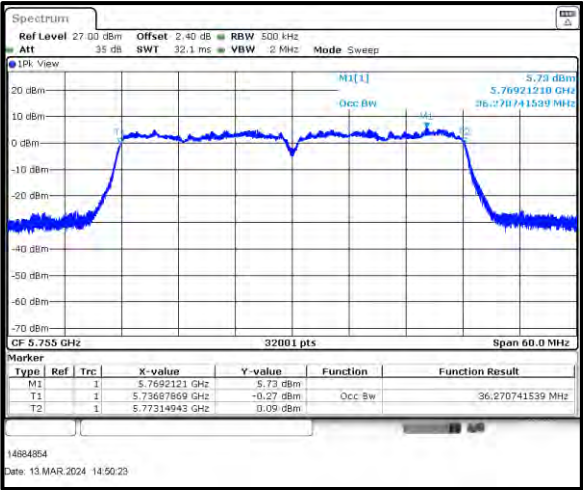
Middle



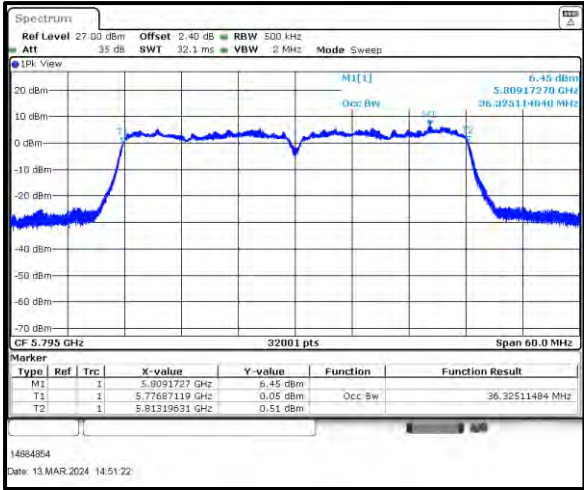
Top

Results: UNII-3 / 802.11n40

Channel	99% Emission Bandwidth (MHz)
Bottom	36.270
Top	36.325



Bottom



Top

4.2.4. Transmitter Minimum 6 dB Bandwidth**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	13 March 2024 & 16 April 2024
Test Sample Serial Number:	6869033 (Conducted Test Sample)		
Test Site Identification	SR 9		

FCC Reference:	Part 15.407(e)
ISED Reference:	RSS-247, 7.3.4.2
Test Method Used:	FCC KDB 789033 D02 Section II.C.2 & ANSI 12.5.1

Environmental Conditions:

Temperature (°C):	23.0 to 24.8
Relative Humidity (%):	48.0 to 55.1

Notes:

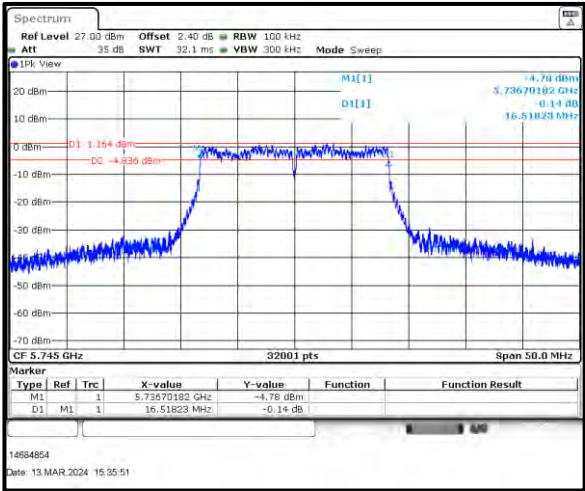
1. The spectrum analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The DTS bandwidth was measured at 6 dB down from the peak of the signal.
3. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values takes into consideration the external attenuation correction factors.
 - The SMA (Female) RF Cable soldered on PCB with maximum attenuation of 1 dB at the tested frequencies.
 - The RF cable attenuation maximum 1.4 dB@5GHz from the EUT to Analyzer

Therefore, total a reference level offset 2.4 dB was added to each of the at the tested frequencies conducted plots.

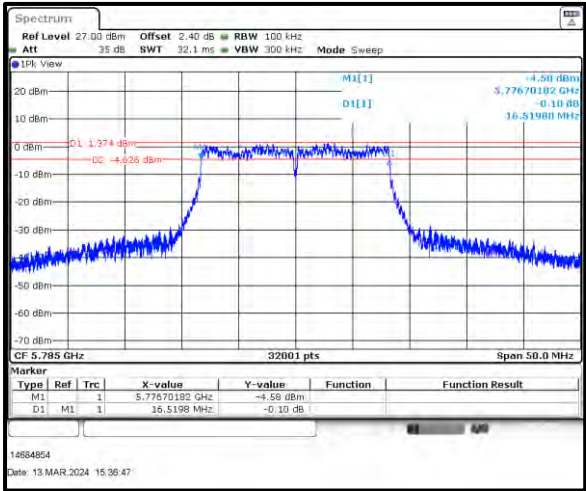
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11a20

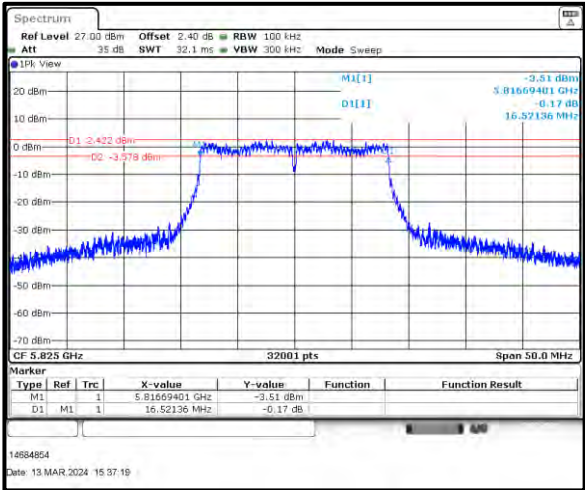
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	16518.23	≥ 500	16018.23	Complied
Middle	16519.80	≥ 500	16019.80	Complied
Top	16521.36	≥ 500	16021.36	Complied



Bottom



Middle



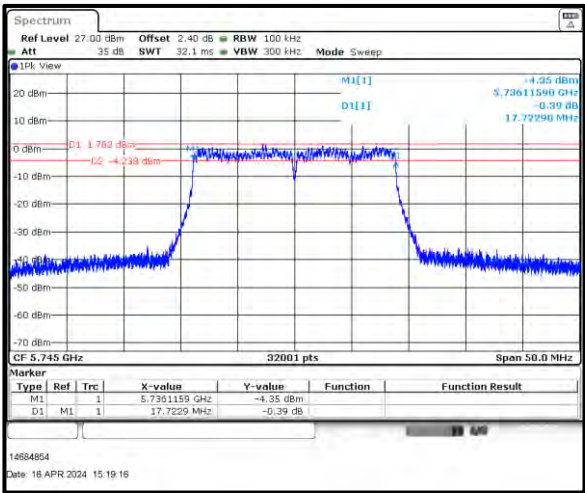
Top

Result: Pass

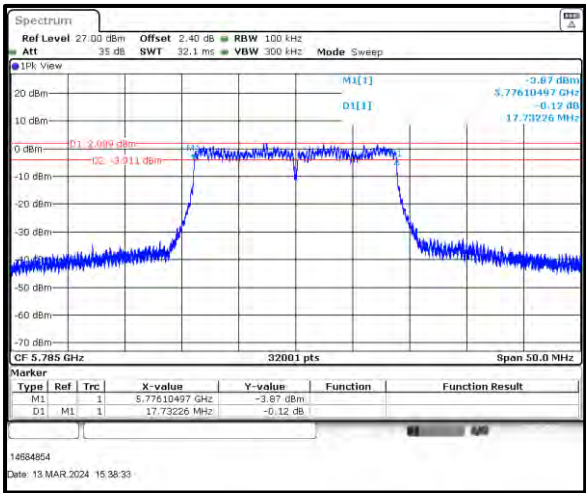
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11n20

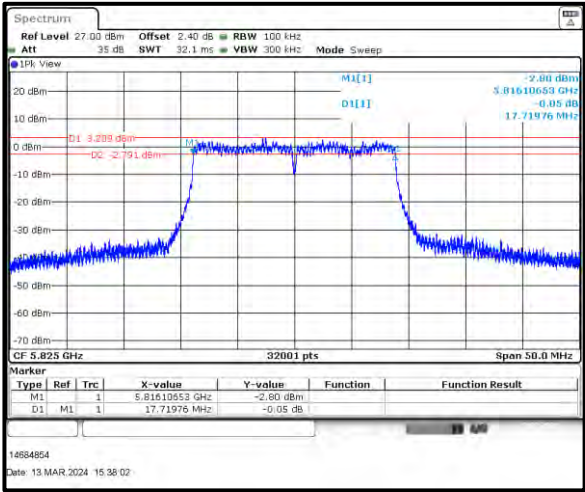
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	17722.90	≥ 500	17222.90	Complied
Middle	17732.26	≥ 500	17232.26	Complied
Top	17719.76	≥ 500	17219.76	Complied



Bottom



Middle



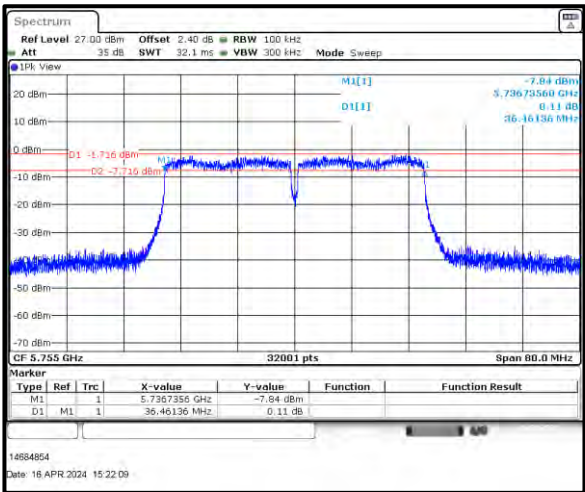
Top

Result: Pass

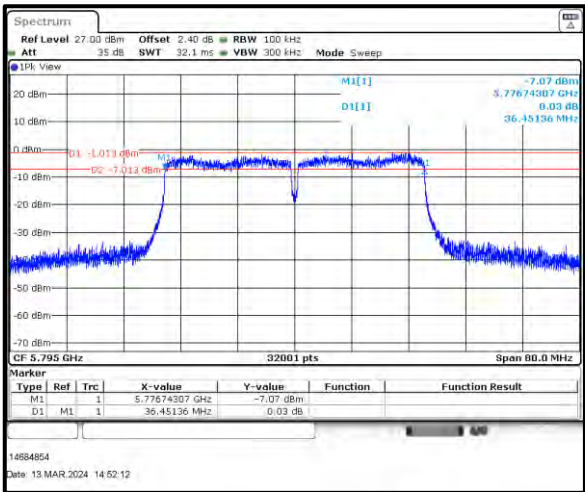
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11n40

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	36461.36	≥ 500	35961.36	Complied
Top	36451.36	≥ 500	35951.36	Complied



Bottom



Top

Result: Pass

4.2.5. Transmitter Power Spectral Density**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	15 March 2024
Test Sample Serial Number:	6869033 (Conducted Test Sample)		
Test Site Identification	SR 9		

FCC Reference:	Part 15.407(a)(1)(iv)
ISED Reference:	RSS-Gen 6.12 / RSS-247 7.3.1.2, 7.3.2.2, 7.3.3.2 & 7.3.4.3
Test Method Used:	FCC KDB 789033 D02 Section II.F. referencing Section II.E.2.b) & ANSI C63.10 Section 12.5 referencing Section 12.3.2.4

Environmental Conditions:

Temperature (°C):	22.7
Relative Humidity (%):	40.8

Notes:

- Transmitter Maximum Power Spectral Density tests were performed using a spectrum analyser in accordance with KDB 789033 II. F referencing Section II. E.2.b).
Method SA-1: The resolution bandwidth was set to 1 MHz / 500 kHz and video bandwidth 3 MHz / 2 Mhz. An RMS detector was used and sweep time set to auto and 300 traces performed. The span was set to 30 MHz / 50MHz so as to encompass the entire 99% occupied bandwidth. A marker was placed at the peak of the measured level. The peak level is recorded in the tables below.
- The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values take into consideration the external attenuation correction factors.
 - The SMA RF Cable soldered on PCB with maximum attenuation of 1dB at the tested frequencies.
 - The RF cable attenuation maximum 1.4 dB@5GHz from the EUT to Analyzer

Therefore, total a reference level offset 2.4 dB was added to each of the at the tested frequencies conducted plots.
- For the calculation of the power spectral density limits according to **FCC** standards:
 - For UNII-1, UNII-2A, UNII-2C; the maximum power spectral density shall not exceed 11 dBm/MHz.
 - For UNII-3 the maximum power spectral density shall not exceed 30 dBm/500-kHz

Taking in consideration the transmitting antennas of directional gain greater than 6 dBi, the maximum conducted output power and shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For example, for UNII -2A limits calculation shall be as following:

 - For external antenna: 2.81 dBm for antenna gain ≤ 6 dBm $\Rightarrow$ limit = 11 dBm/MHz
 - For PCB antenna: (sub-band limit) – (Antenna gain - 6dBm) $\Rightarrow 11 - (8.71-6) \Rightarrow$ limit 8.29 dBm/MHz
- For the calculation of the power spectral density limits according to **ISED** standards the following values were used:
 - For UNII-1 **e.i.r.p limit 10 dBm/MHz**
 - For UNII -2A & UNII -2C, limit is 11 dBm/MHz
 - For UNII -3 limit 30 dBm/500 kHz. When using transmitting antennas with a directional gain exceeding 6 dBi, limits shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-1 / 802.11a****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	2.81	11.00	11.40	Complied
Middle	-0.02	2.81	11.00	11.02	Complied
Top	0.35	2.81	11.00	10.65	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	8.71	11.00	8.29	8.69	Complied
Middle	-0.02	8.71	11.00	8.29	8.31	Complied
Top	0.35	8.71	11.00	8.29	7.94	Complied

De Facto EIRP Limit Comparison Internal Antenna - ISED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	8.71	8.31	10	1.69	Complied
Middle	-0.02	8.71	8.69	10	1.31	Complied
Top	0.35	8.71	9.06	10	0.94	Complied

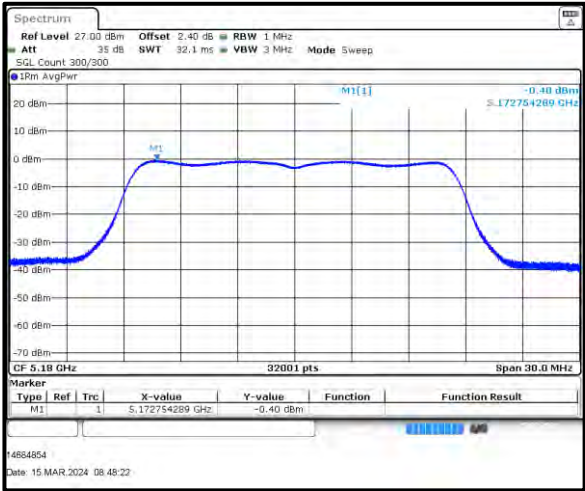
ISED De Facto EIRP Limit Comparison External Antenna - ISED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	2.81	2.41	10.00	7.59	Complied
Middle	-0.02	2.81	2.79	10.00	7.21	Complied
Top	0.35	2.81	3.16	10.00	6.84	Complied

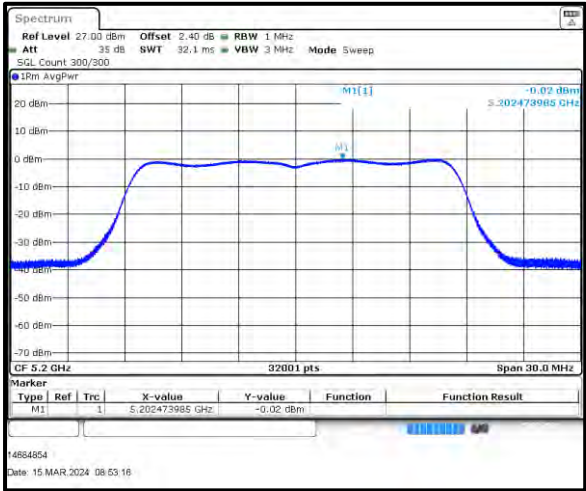
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

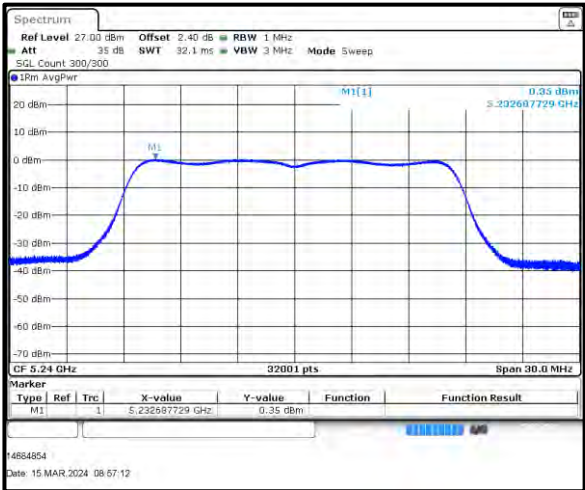
Results: UNII-1 / 802.11a



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-1 / 802.11n20****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	2.81	11.00	11.40	Complied
Middle	0.14	2.81	11.00	10.86	Complied
Top	0.38	2.81	11.00	10.62	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	8.71	11.00	8.29	8.69	Complied
Middle	0.14	8.71	11.00	8.29	8.15	Complied
Top	0.38	8.71	11.00	8.29	7.91	Complied

De Facto EIRP Limit Comparison Internal Antenna - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	8.71	8.31	10	1.69	Complied
Middle	0.14	8.71	8.85	10	1.15	Complied
Top	0.38	8.71	9.09	10	0.91	Complied

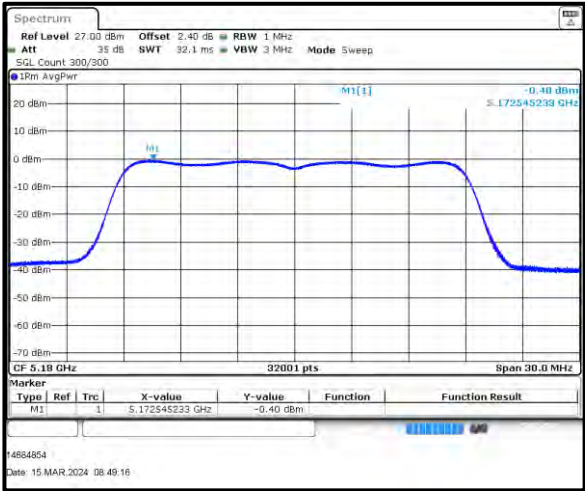
ISSED De Facto EIRP Limit Comparison External Antenna - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.40	2.81	2.41	10.00	7.59	Complied
Middle	0.14	2.81	2.95	10.00	7.05	Complied
Top	0.38	2.81	3.19	10.00	6.81	Complied

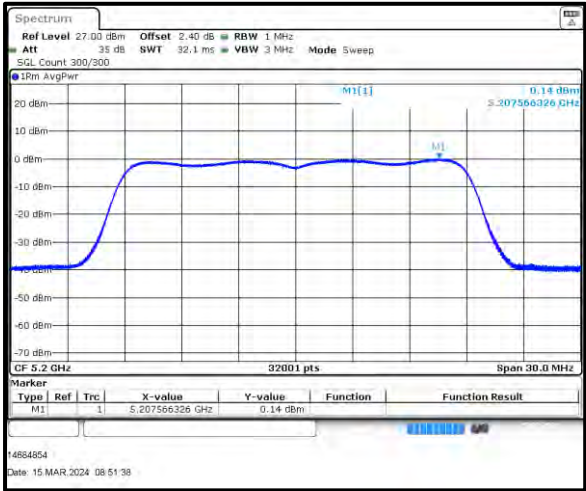
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

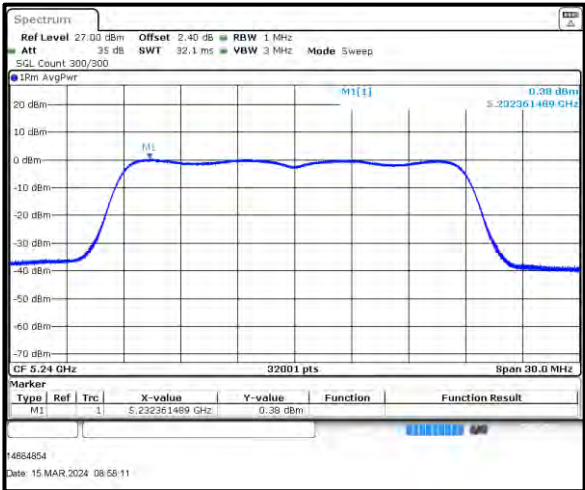
Results: UNII-1 / 802.11n20



Bottom



Middle



Top

Result: Pass

Results: UNII-1 / 802.11n40**Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.95	2.81	11.00	13.95	Complied
Top	-2.56	2.81	11.00	13.56	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.95	8.71	11.00	8.29	11.24	Complied
Top	-2.56	8.71	11.00	8.29	10.85	Complied

De Facto EIRP Limit Comparison Internal Antenna - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.95	8.71	5.76	10	4.24	Complied
Top	-2.56	8.71	6.15	10	3.85	Complied

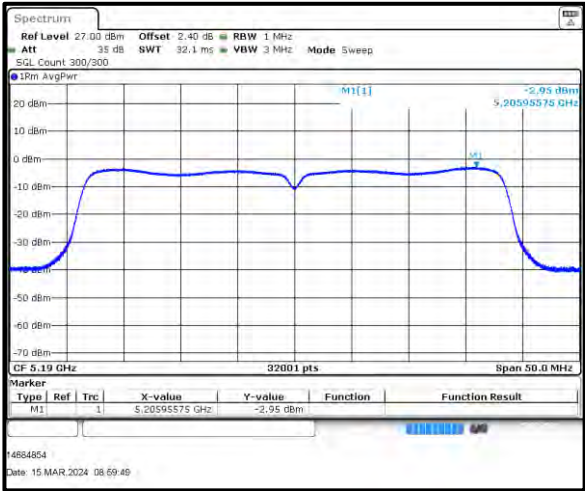
ISED De Facto EIRP Limit Comparison External Antenna - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	EIRP PSD (dBm)	EIRP PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.95	2.81	-0.14	10.00	10.14	Complied
Top	-2.56	2.81	0.25	10.00	9.75	Complied

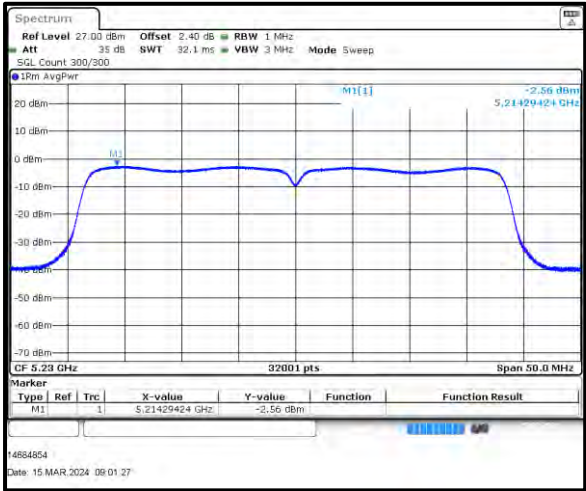
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

Results: UNII-1 / 802.11n40



Bottom



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2A / 802.11a****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.04	2.81	11.00	11.04	Complied
Middle	0.45	2.81	11.00	10.55	Complied
Top	0.55	2.81	11.00	10.45	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.04	8.71	11.00	8.29	8.33	Complied
Middle	0.45	8.71	11.00	8.29	7.84	Complied
Top	0.55	8.71	11.00	8.29	7.74	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi (External) - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.04	2.81	11.00	11.04	Complied
Middle	0.45	2.81	11.00	10.55	Complied
Top	0.55	2.81	11.00	10.45	Complied

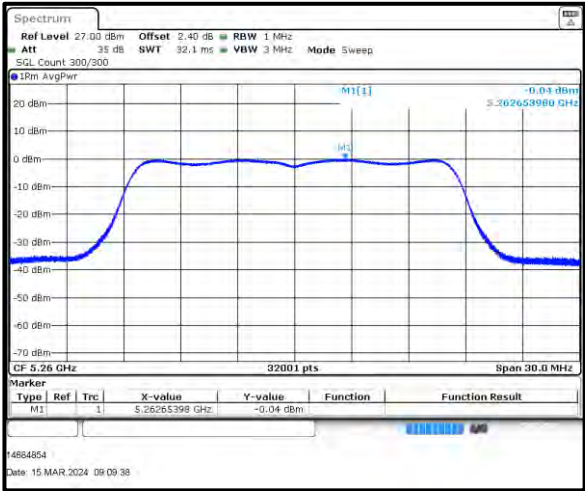
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi (Internal) - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-0.04	8.71	11.00	11.04	Complied
Middle	0.45	8.71	11.00	10.55	Complied
Top	0.55	8.71	11.00	10.45	Complied

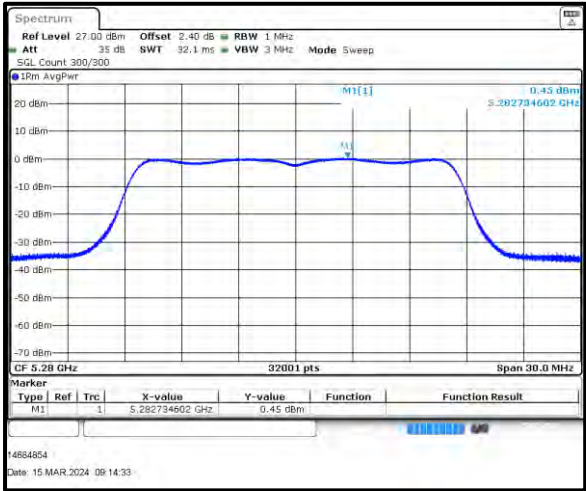
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

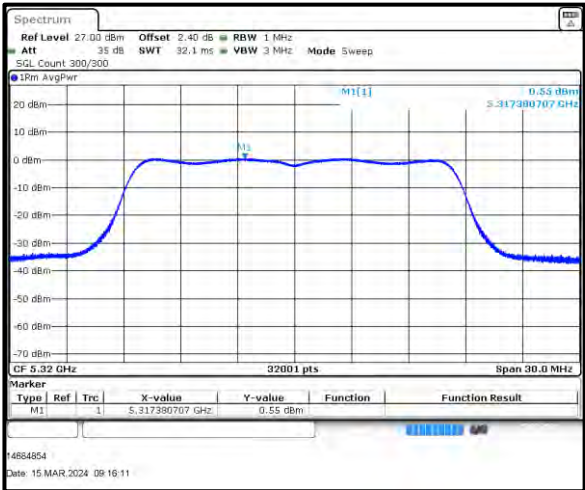
Results: UNII-2A / 802.11a



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2A / 802.11n20****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.00	2.81	11.00	11.00	Complied
Middle	0.29	2.81	11.00	10.71	Complied
Top	0.56	2.81	11.00	10.44	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	0.00	8.71	11.00	8.29	8.29	Complied
Middle	0.29	8.71	11.00	8.29	8.00	Complied
Top	0.56	8.71	11.00	8.29	7.73	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.00	2.81	11.00	11.00	Complied
Middle	0.29	2.81	11.00	10.71	Complied
Top	0.56	2.81	11.00	10.44	Complied

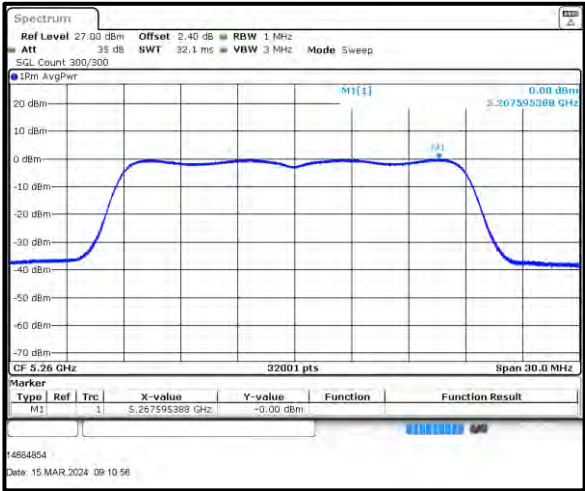
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.00	8.71	11.00	11.00	Complied
Middle	0.29	8.71	11.00	10.71	Complied
Top	0.56	8.71	11.00	10.44	Complied

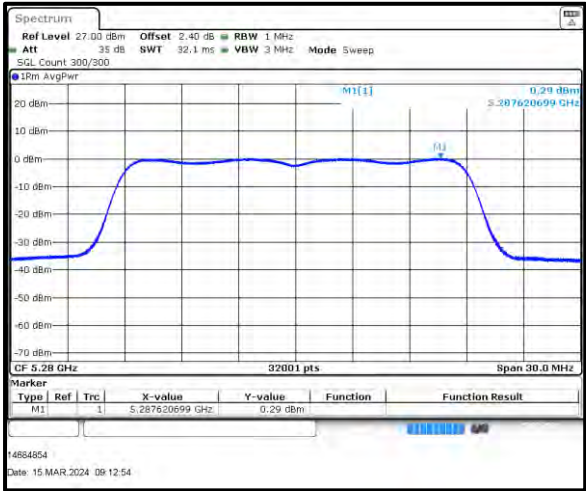
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

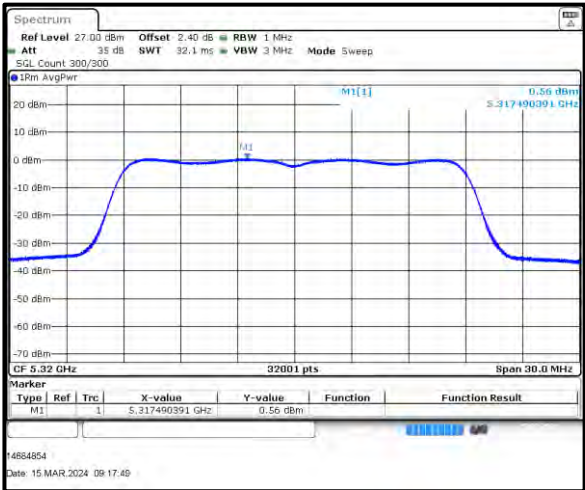
Results: UNII-2A / 802.11n20



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2A / 802.11n40****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.51	2.81	11.00	13.51	Complied
Top	-2.19	2.81	11.00	13.19	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.51	8.71	11.00	8.29	10.80	Complied
Top	-2.19	8.71	11.00	8.29	10.48	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.51	2.81	11.00	13.51	Complied
Top	-2.19	2.81	11.00	13.19	Complied

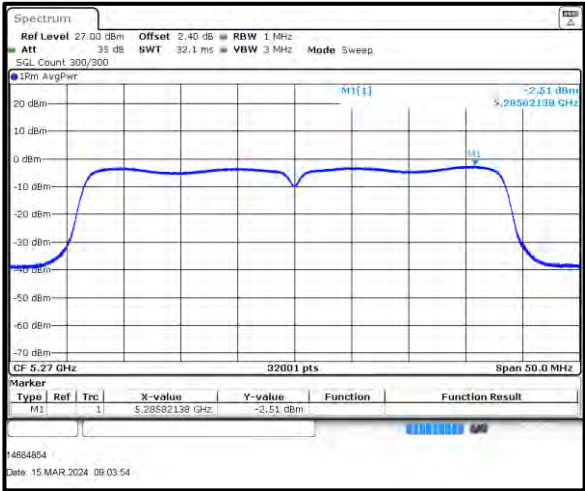
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.51	8.71	11.00	13.51	Complied
Top	-2.19	8.71	11.00	13.19	Complied

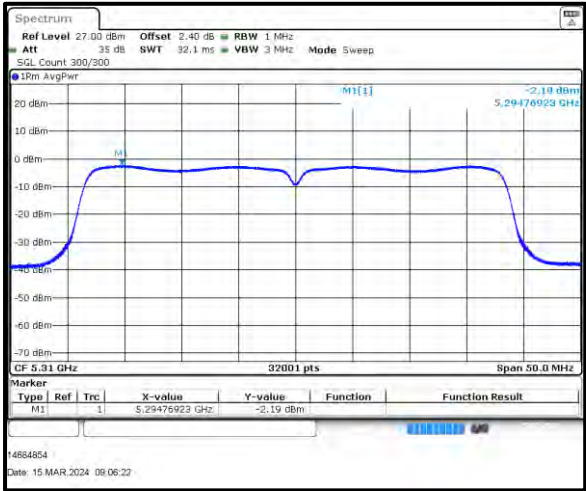
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

Results: UNII-2A / 802.11n40



Bottom



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2C / 802.11a****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.53	2.81	11.00	10.47	Complied
Middle	1.44	2.81	11.00	9.56	Complied
Top	2.50	2.81	11.00	8.50	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	0.53	8.71	11.00	8.29	7.76	Complied
Middle	1.44	8.71	11.00	8.29	6.85	Complied
Top	2.50	8.71	11.00	8.29	5.79	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISSED:

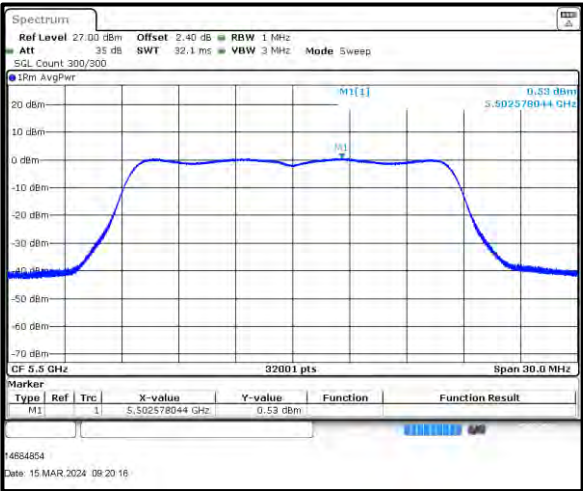
Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.53	2.81	11.00	10.47	Complied
Middle	1.44	2.81	11.00	9.56	Complied
Top	2.50	2.81	11.00	8.50	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISSED:

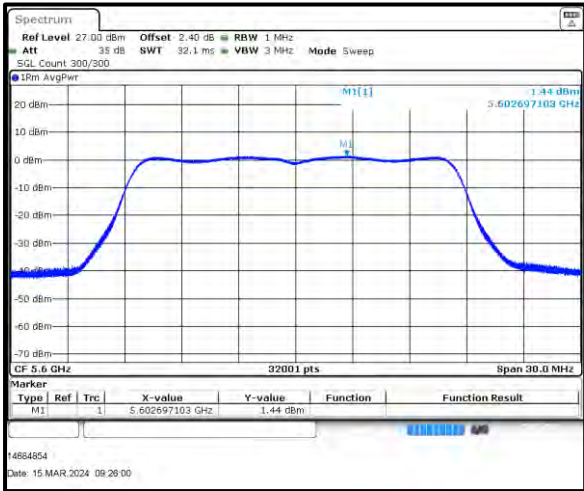
Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.53	8.71	11.00	10.47	Complied
Middle	1.44	8.71	11.00	9.56	Complied
Top	2.50	8.71	11.00	8.50	Complied

Result: Pass

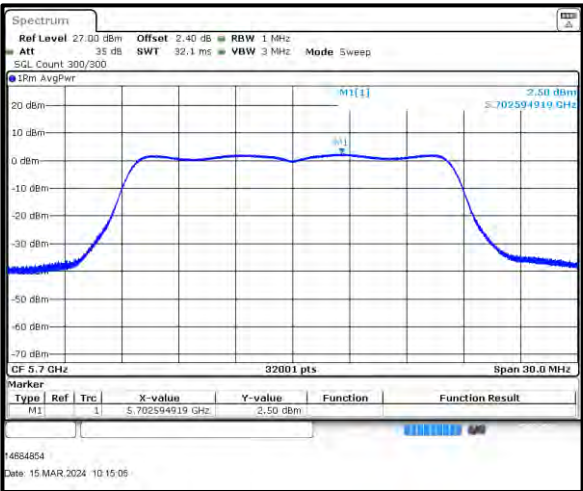
Transmitter Maximum Power Spectral Density (continued)
Results: UNII-2C / 802.11a



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2C / 802.11n20****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.49	2.81	11.00	10.51	Complied
Middle	1.41	2.81	11.00	9.59	Complied
Top	2.43	2.81	11.00	8.57	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	0.49	8.71	11.00	8.29	7.80	Complied
Middle	1.41	8.71	11.00	8.29	6.88	Complied
Top	2.43	8.71	11.00	8.29	5.86	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.49	2.81	11.00	10.51	Complied
Middle	1.41	2.81	11.00	9.59	Complied
Top	2.43	2.81	11.00	8.57	Complied

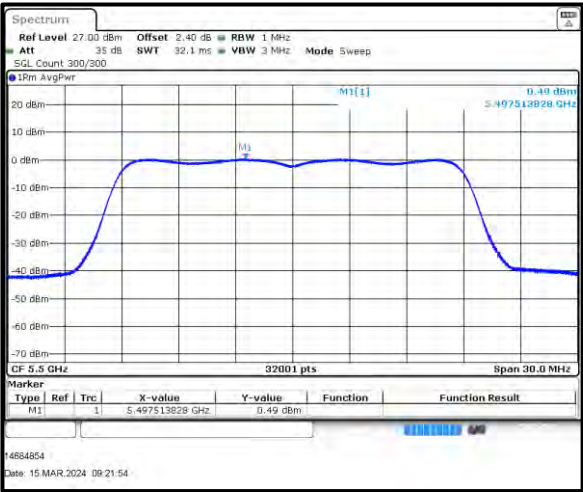
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	0.49	8.71	11.00	10.51	Complied
Middle	1.41	8.71	11.00	9.59	Complied
Top	2.43	8.71	11.00	8.57	Complied

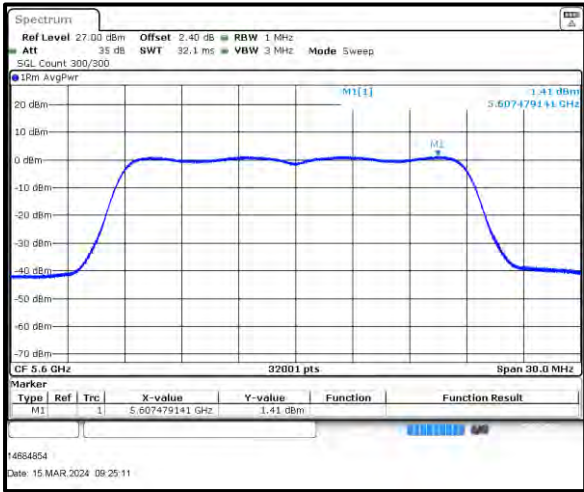
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

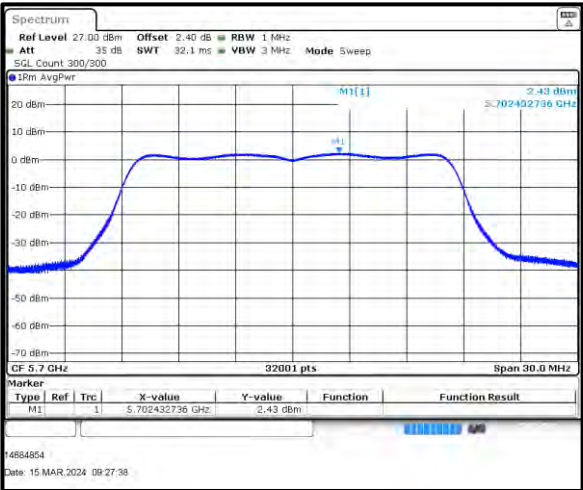
Results: UNII-2C / 802.11n20



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-2C / 802.11n40****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.23	2.81	11.00	13.23	Complied
Middle	-1.43	2.81	11.00	12.43	Complied
Top	-1.01	2.81	11.00	12.01	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.23	8.71	11.00	8.29	10.52	Complied
Middle	-1.43	8.71	11.00	8.29	9.72	Complied
Top	-1.01	8.71	11.00	8.29	9.30	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.23	2.81	11.00	13.23	Complied
Middle	-1.43	2.81	11.00	12.43	Complied
Top	-1.01	2.81	11.00	12.01	Complied

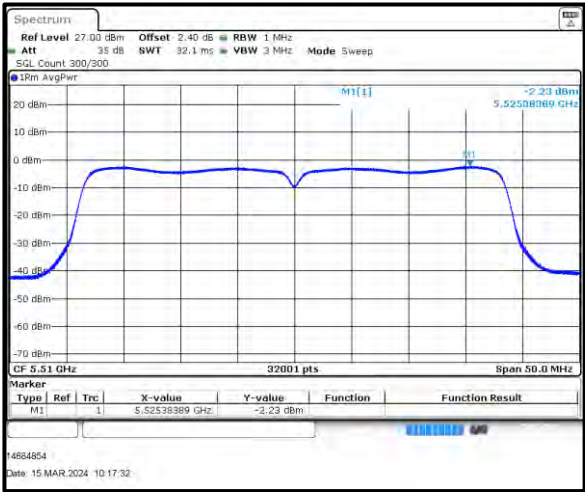
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /MHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ MHz)	Margin (dB)	Result
Bottom	-2.23	8.71	11.00	13.23	Complied
Middle	-1.43	8.71	11.00	12.43	Complied
Top	-1.01	8.71	11.00	12.01	Complied

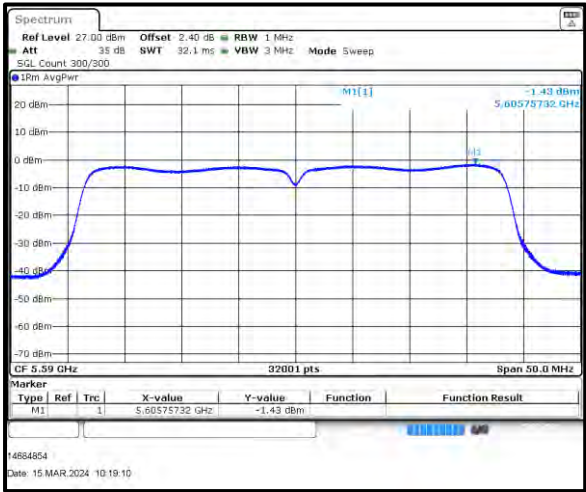
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

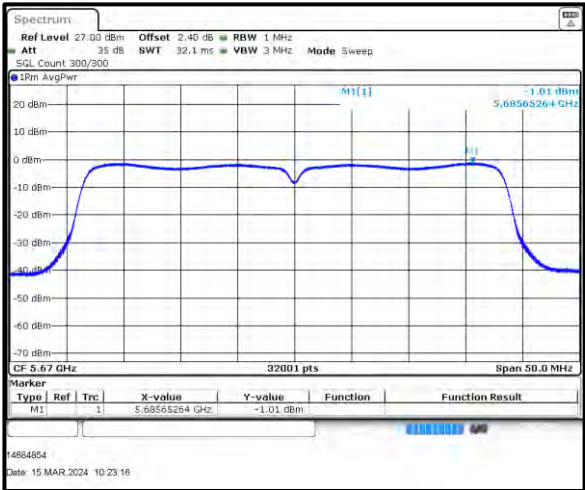
Results: UNII-2C / 802.11n40



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-3 / 802.11a****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	2.81	30.00	29.53	Complied
Middle	0.70	2.81	30.00	29.30	Complied
Top	1.76	2.81	30.00	28.24	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm/500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	8.71	30.00	27.29	26.82	Complied
Middle	0.7	8.71	30.00	27.29	26.59	Complied
Top	1.76	8.71	30.00	27.29	25.53	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	2.81	30.00	29.53	Complied
Middle	0.70	2.81	30.00	29.30	Complied
Top	1.76	2.81	30.00	28.24	Complied

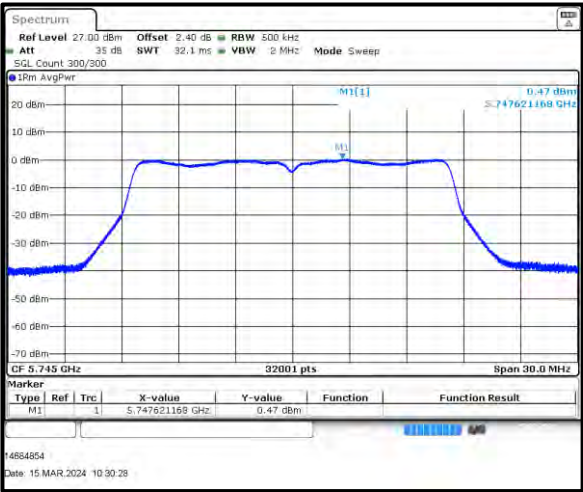
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm/500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	8.71	30.00	27.29	26.82	Complied
Middle	0.7	8.71	30.00	27.29	26.59	Complied
Top	1.76	8.71	30.00	27.29	25.53	Complied

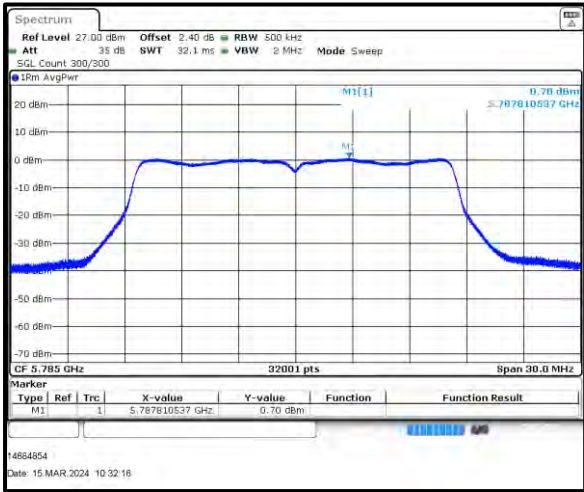
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

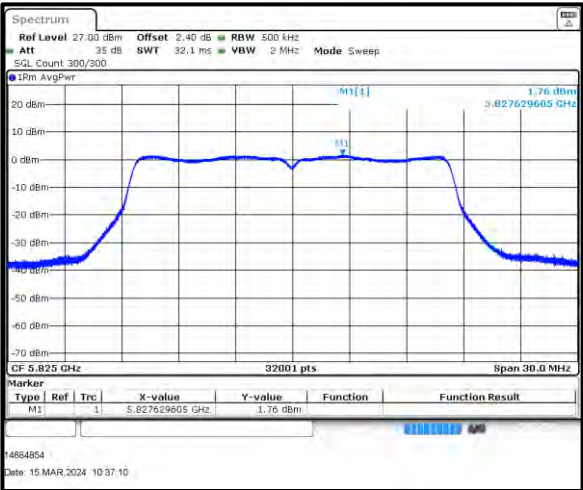
Results: UNII-3 / 802.11a



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-3 / 802.11n20****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	2.81	30.00	29.53	Complied
Middle	0.70	2.81	30.00	29.30	Complied
Top	1.76	2.81	30.00	28.24	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm/500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	8.71	30.00	27.29	26.82	Complied
Middle	0.7	8.71	30.00	27.29	26.59	Complied
Top	1.76	8.71	30.00	27.29	25.53	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	2.81	30.00	29.53	Complied
Middle	0.70	2.81	30.00	29.30	Complied
Top	1.76	2.81	30.00	28.24	Complied

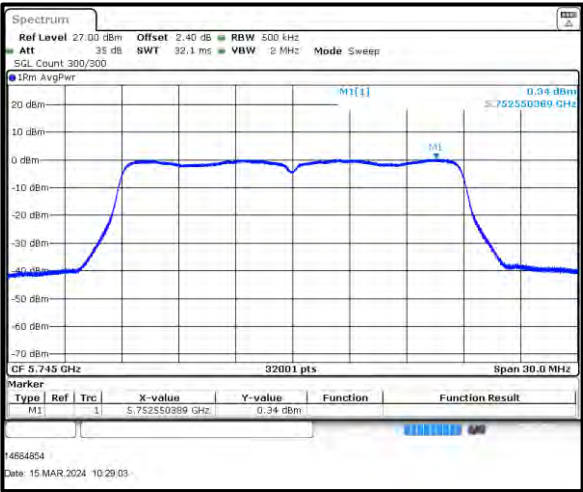
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISSED:

Channel	Conducted Average PSD (dBm/500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	0.47	8.71	30.00	27.29	26.82	Complied
Middle	0.7	8.71	30.00	27.29	26.59	Complied
Top	1.76	8.71	30.00	27.29	25.53	Complied

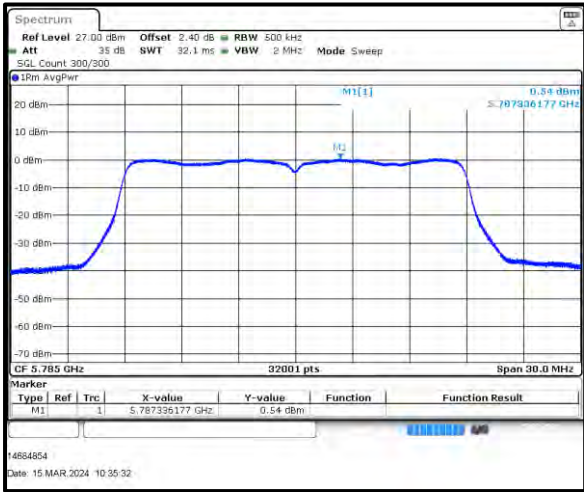
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

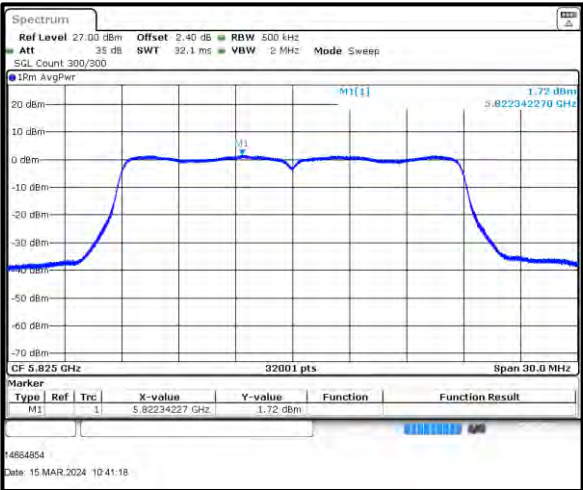
Results: UNII-3 / 802.11n20



Bottom



Middle



Top

Result: Pass

Transmitter Maximum Power Spectral Density (continued)**Results: UNII-3 / 802.11n40****Conducted Power Limit Comparison for antenna gain less than 6 dBi - FCC:**

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	-2.33	2.81	30.00	32.33	Complied
Top	-1.62	2.81	30.00	31.62	Complied

Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - FCC:

Channel	Conducted Average PSD (dBm/ 500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	-2.33	8.71	30.00	27.29	29.62	Complied
Top	-1.62	8.71	30.00	27.29	28.91	Complied

Conducted Power Limit Comparison for antenna gain less than 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm /500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Margin (dB)	Result
Bottom	-2.33	2.81	30.00	32.33	Complied
Top	-1.62	2.81	30.00	31.62	Complied

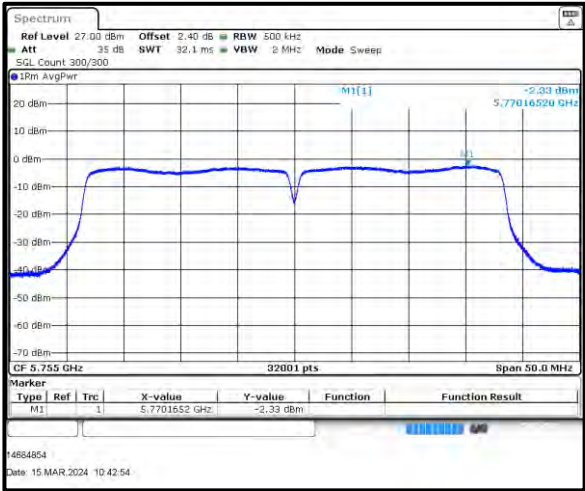
Conducted Power Limit Comparison for antenna gain that exceeds 6 dBi - ISCED:

Channel	Conducted Average PSD (dBm/ 500KHz)	Directional Antenna Gain (dBi)	Conducted PSD Limit (dBm/ 500KHz)	Corrected Conducted PSD Limit for AG > 6dBm (dBm/ 500KHz)	Margin (dB)	Result
Bottom	-2.33	8.71	30.00	27.29	29.62	Complied
Top	-1.62	8.71	30.00	27.29	28.91	Complied

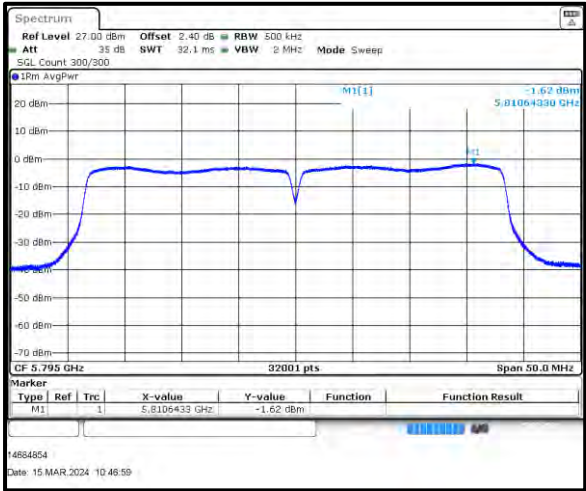
Result: Pass

Transmitter Maximum Power Spectral Density (continued)

Results: UNII-3 / 802.11n40



Bottom



Top

Result: Pass

4.2.6. Transmitter Maximum (Peak) Output Power**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	14 February 2024 to 18 March 2024
Test Sample Serial Number:	6869033 (Conducted Test Sample)		
Test Site Identification	SR 9		

FCC Reference:	Part 15.407(a)(1)(iv)
ISED Reference:	RSS-Gen 6.12 / RSS-247 7.3.1.2, 7.3.2.2, 7.3.3.2 & 7.3.4.3
Test Method Used:	FCC KDB 789033 D02 Section II.E.3.a)

Environmental Conditions:

Temperature (°C):	23.3 to 24.1
Relative Humidity (%):	38.6 to 41.1

Notes:

1. The RF port on the EUT was connected to the power meter using suitable attenuation and RF cable. The measured values take into consideration the external attenuation correction factors.

- The SMA (Female) RF Cable soldered on PCB with maximum attenuation of 1 dB at the tested frequencies.
- The RF cable attenuation maximum 1.4 dB@5GHz from the EUT to power meter

Therefore, total correction factor of 2.4 dB was added EUT configuration setup on the power meter.

2. For the calculation of the conducted output power limits according to FCC standards are:

- For UNII-1: 250mWatt=24dBm
- For UNII-2A/C: 250mW=24dBm **OR** (11 dBm + 10 log (26dB Bandwidth)) whichever is lesser
- For UNII-3: 1Watt=30dBm

With maximum antenna gain does not exceed 6 dBm. For transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBm.

For example, for UNII -1A limits:

- For external antenna: 250mW=24dBm for antenna gain $\leq$ 6 dBm.
- For PCB antenna: 250mW(24dBm) – (Antenna gain - 6dBm) $\Rightarrow$ 24 – (8.71-6) = 21.29 dBm

3. For the calculation of the conducted output power limits according to ISED standards the following formulas were used:

- For UNII-1 **e.i.r.p**: 200mW=23dBm **OR** (10 dBm + 10 log (99% Bandwidth [MHz])) whichever is lesser
- For UNII -2A: 250mW=24dBm **OR** (11 dBm + 10 log (99% Bandwidth [MHz])) whichever is lesser
- For UNII -2C: 250mW=24dBm **OR** (11 dBm + 10 log (99% Bandwidth [MHz])) whichever is lesser

For UNII-3: 1Watt= 30dBm. When using transmitting antennas with a directional gain exceeding 6 dBi, the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-1 / 802.11a**

Channel no.:	36	40	48
a-mode	UNII 1		
6Mbit	10.1	10.3	10.5
9Mbit	10.2	10.4	10.6
12Mbit	10.2	10.4	10.6
18Mbit	10.2	10.4	10.6
24Mbit	10.2	10.4	10.6
36Mbit	10.1	10.3	10.5
48Mbit	10.2	10.4	10.6
54Mbit	10.2	10.4	10.6
Operational mode:	a-mode		
FCC-Limits [dBm]	gain <6 dBi	gain >6 dBi	
	24.0	21.29	
ISED-Limits [dBm] EIRP	22.25		
Limit Check:	Limit Check:		
Highest conducted power value over channels and modulations: [dBm]	10.6		
Declared antenna Gain max: [dBi]	2.81		8.71
EIRP [dBm]	13.41		19.31
Margin to EIRP ISED Limit [dB]	8.84		2.94
FCC Margin to Limit: [dB]	13.4		10.69
Verdict:	Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-1 / 802.11n**

Channel no.:	36	40	48	38	46
n-mode	UNII 1				
MCS0	10.3	10.5	10.7	10.3	10.3
MCS1	10.1	10.3	10.6	10.6	10.6
MCS2	10.4	10.6	10.7	10.4	10.6
MCS3	10.4	10.6	10.8	10.4	10.7
MCS4	10.4	10.6	10.8	10.4	10.6
MCS5	10.4	10.6	10.8	10.4	10.6
MCS6	10.4	10.6	10.8	10.4	10.6
MCS7	10.4	10.6	10.8	10.4	10.6
Operational bands:	n20			n40	
FCC-Limits [dBm]	gain <6 dBi	gain >6 dBi	gain <6 dBi	gain >6 dBi	
	24.0	21.29	24.0	21.29	
ISED-Limits [dBm] EIRP	22.5			23	
Limit Check:	Limit Check:				
Highest conducted power value over channels and modulations: [dBm]	10.8			10.7	
Declared antenna Gain max: [dBi]	2.81	8.71	2.81	8.71	
EIRP [dBm]	13.61	19.51	13.51	19.41	
Margin to EIRP ISED Limit [dB]	8.89	2.99	9.49	3.59	
FCC Margin to Limit: [dB]	13.2	10.49	13.3	10.59	
Verdict:	Pass			Pass	

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-2A / 802.11a**

Channel no.:	52	56	64
a-mode	UNII 2a		
6Mbit	10.6	10.6	10.9
9Mbit	10.7	10.7	11.0
12Mbit	10.7	10.7	11.0
18Mbit	10.7	10.7	11.0
24Mbit	10.7	10.7	11.0
36Mbit	10.6	10.6	10.9
48Mbit	10.6	10.7	11.0
54Mbit	10.7	10.7	11.0
Operational bands:	a-mode		
FCC-Limits [dBm]	gain <6 dBi	gain >6 dBi	
	23.95	21.24	
ISED-Limits [dBm]	23.24		
ISED-Limits [dBm] EIRP	29.24		
Limit Check:	Limit Check:		
Highest conducted power value over channels and modulations: [dBm]	11.00		
Declared antenna Gain max: [dBi]	2.81		8.71
EIRP [dBm]	13.81		19.71
ISED Margin to Limit EIRP [dB]	15.43		9.53
FCC Margin to Limit: [dB]	12.95		10.24
Verdict:	Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-2A / 802.11n**

Channel no.:	52	56	64	54	62
n-mode	UNII 2a				
MCS0	10.8	10.8	11.1	10.7	11.0
MCS1	10.8	10.7	11.0	10.7	11.0
MCS2	10.8	10.9	11.1	10.7	11.0
MCS3	10.9	10.9	11.2	10.8	11.1
MCS4	10.9	10.9	11.2	10.8	11.0
MCS5	10.9	10.9	11.2	10.8	11.0
MCS6	10.9	10.9	11.2	10.9	11.0
MCS7	11.0	10.8	11.1	10.9	11.0
Operational bands:	n20		n40		
FCC-Limits [dBm]	gain < 6 dBi	gain > 6 dBi	gain < 6 dBi	gain > 6 dBi	
	24.00	21.29	24.00	21.29	
ISED-Limits [dBm]	23.50		24		
ISED-Limits [dBm] EIRP	29.5		30		
Limit Check:	Limit Check:				
Highest conducted power value over channels and modulations: [dBm]	11.25		11.15		
Declared antenna Gain max: [dBi]	2.81	8.71	2.81	8.71	
EIRP [dBm]	14.01	19.91	13.91	19.81	
ISED Margin to Limit EIRP: [dB]	15.49	9.59	16.09	10.19	
FCC Margin to Limit: [dB]	12.75	10.04	12.85	10.14	
Verdict:	Pass		Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-2C / 802.11a**

Channel no.:	100	120	140
a-mode	UNII 2c		
6Mbit	12.2	11.6	12.3
9Mbit	12.2	11.6	12.3
12Mbit	12.2	11.6	12.3
18Mbit	12.2	11.6	12.3
24Mbit	12.2	11.6	12.3
36Mbit	12.1	11.5	12.2
48Mbit	12.1	11.5	12.2
54Mbit	12.2	11.6	12.3
Operational bands:	a-mode		
FCC-Limits [dBm]	gain < 6 dBi	gain > 6 dBi	
	23.93	21.22	
ISED-Limits [dBm]	23.23		
ISED-Limits [dBm] EIRP	29.23		
Limit Check:	Limit Check:		
Highest conducted power value over channels and modulations: [dBm]	12.3		
Declared antenna Gain max: [dBi]	2.81		8.71
EIRP [dBm]	15.11		21.01
ISED EIRP Margin to Limit: [dB]	14.12		8.22
FCC Margin to Limit: [dB]	11.63		8.92
Verdict:	Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-2C / 802.11n**

Channel no.:	100	120	140	102	118	134
n-mode	UNII 2c					
MCS0	12.2	11.7	12.4	11.5	11.2	12.3
MCS1	12.2	11.6	12.3	11.5	11.2	12.3
MCS2	12.3	11.7	12.4	11.5	11.2	12.4
MCS3	12.3	11.7	12.4	11.6	11.3	12.4
MCS4	12.3	11.7	12.4	12.4	11.2	12.3
MCS5	12.3	11.8	12.5	11.6	11.2	12.3
MCS6	12.3	11.8	12.4	11.5	11.2	12.3
MCS7	12.3	11.7	12.4	11.5	11.2	12.3
Operational bands:	n20			n40		
FCC-Limits [dBm]	gain < 6 dBi	gain > 6 dBi		gain < 6 dBi		gain > 6 dBi
	23.98	21.27		24.00		21.29
ISED-Limits [dBm]	23.49	23.49		24.00		24.00
EIRP ISED-Limits [dBm]	29.49			30.00		
Limit Check:	Limit Check:					
Highest conducted power value over channels and modulations: [dBm]	12.5			12.4		
Declared antenna Gain max: [dBi]	2.81	8.71		2.81		8.71
ISED EIRP Margin to Limit: [dB]	14.18	8.28		14.79		8.89
FCC Margin to Limit: [dB]	11.48	8.77		11.60		8.89
Verdict:	Pass			Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-3 / 802.11a**

Channel no.:	149	157	165
a-mode	UNII 2c		
6Mbit	11.71	12.29	12.66
9Mbit	11.73	12.35	12.66
12Mbit	11.73	12.31	12.70
18Mbit	11.75	12.35	12.73
24Mbit	11.78	12.37	12.75
36Mbit	11.68	12.29	12.67
48Mbit	11.72	12.31	12.70
54Mbit	11.75	12.36	12.74
Operational bands:	a-mode		
FCC/ISED-Limits [dBm]	gain < 6 dBi		gain > 6 dBi
	30.0		27.29
Limit Check:	Limit Check:		
Highest conducted power value over channels and modulations: [dBm]	12.75		
Declared antenna Gain max: [dBi]	2.81		8.71
FCC Margin to Limit: [dB]	17.25		14.54
Margin to ISED Limit: [dB]	17.25		14.54
Verdict:	Pass		

Result: Pass

Transmitter Maximum Conducted Output Power (continued)**Results: UNII-3 / 802.11n**

Channel no.:	149	157	165	151	159
n-mode	UNII 2a				
MCS0	11.84	12.41	12.80	11.89	12.52
MCS1	11.76	12.37	12.75	11.90	12.52
MCS2	11.89	12.47	12.85	11.88	12.52
MCS3	11.91	12.50	12.88	11.95	12.57
MCS4	11.91	12.50	12.89	11.92	12.54
MCS5	11.93	12.53	12.91	11.91	12.53
MCS6	11.92	12.52	12.90	11.93	12.54
MCS7	11.90	12.49	12.89	11.89	12.52
Operational bands:	n20		n40		
EIRP FCC/ISED-Limits [dBm]	gain < 6 dBi	gain > 6 dBi	gain < 6 dBi	gain > 6 dBi	
	30.00	27.29	30.00	27.29	
Limit Check:	Limit Check:				
Highest conducted power value over channels and modulations: [dBm]	12.91		12.57		
Declared antenna Gain max: [dBi]	2.81	8.71	2.81	8.71	
FCC Margin to Limit: [dB]	17.09	14.38	17.43	14.72	
Margin to ISED Limit: [dB]	17.09	14.38	17.43	14.72	
Verdict:	Pass		Pass		

Result: Pass

4.2.7. Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation)**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	14 March 2024
Test Sample Serial Number:	6869032 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	15.407(b)(1)/15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.1.3
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4. & ANSI C63.10 Sections 6.3 and 6.4
Frequency Range:	9 kHz to 30 MHz

Environmental Conditions:

Temperature (°C):	23.0 to 24.8
Relative Humidity (%):	48.0 to 55.1

Note(s):

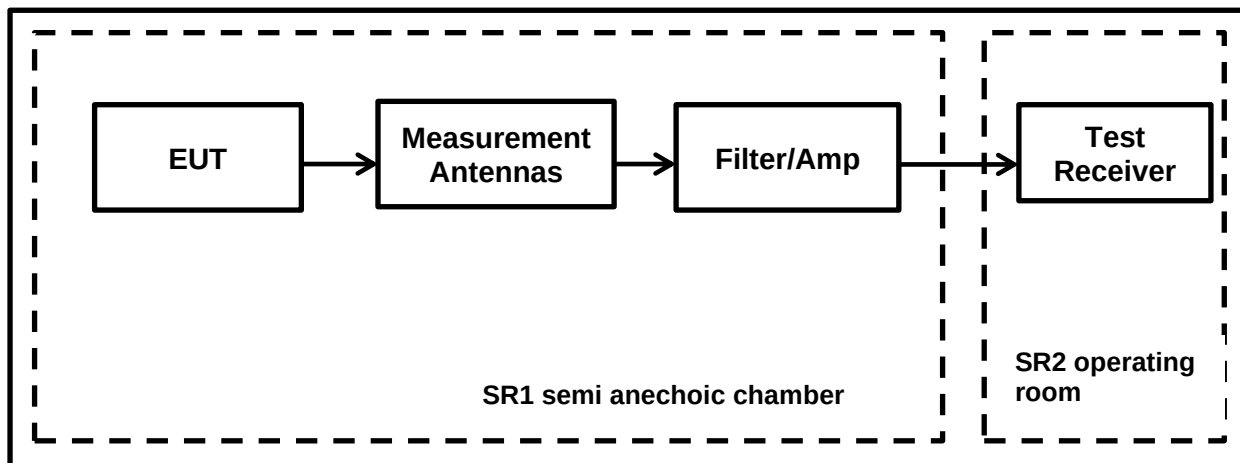
- As allowed by ANSI C63.10 clause 5.2 an alternative test site that can demonstrate equivalence to a open area test site may be used. Therefore, the measurement was performed in a Semi Anechoic Chamber. (The OATS / SAC comparison data is available upon request).
- FCC rule part 15.209(a) specifies limits at 300 m / 30 m in $\mu\text{V/m}$ but RSS GEN specifies limits at 300 m / 30 m in $\mu\text{A/m}$. The relevant limits are the same after accounting for E-field to H-field correction. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω .
For example, the measurement frequency X KHz resulted in a level of Y $\text{dB}\mu\text{V/m}$, which is equivalent to $Y - 51.5 = Z \text{ dB}\mu\text{A/m}$, which has the same margin, W dB, to the corresponding RSS-GEN Section 8.9, Table 6 limit as it has to the 15.209(a) limit.
- The limits are specified at a test distances of 30 m & 300 metres. However, as specified in ANSI C63.10 clause 6.4.3, measurements may be performed at a closer distance and the measured values extrapolated to the specified measurement distance using the method described in clauses 6.4.4, specifically sub-clause 6.4.4.1 which specifies that the measured values shall be extrapolated to the specified distance by conservatively presuming that the field strength decays at 40 dB/decade. Therefore, measurements were performed at a measurement distance of 3 m.
- The measured values at 3 m were extrapolated to the required measurement distances of 300 m and 30 m and compared the specified limits at those distances as follows:
 - 9 kHz- 490 kHz: measured value extrapolated from 3 m to 300 m by subtracting 80 dB at 40 dB /decade.
 - 490 kHz-30 MHz: measured value extrapolated from 3 m to 30 m by subtracting 40 dB at 40 dB /decade.

The results table shows both the measured levels at 3 m and the same measurement values extrapolated to the actual measurement distance for the limits specified at 30 and 300 metres.

Conversely, the limit line shown on the spectrum plot was aligned to reflect the extrapolated measured values to 3 m from 300 m and 30 m using the 40 dB /decade rule.
- The measurement was performed with the following worst-case mode w.r.t output power.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16
- All emissions shown on pre-scan plots were investigated and found to be below system noise floor.

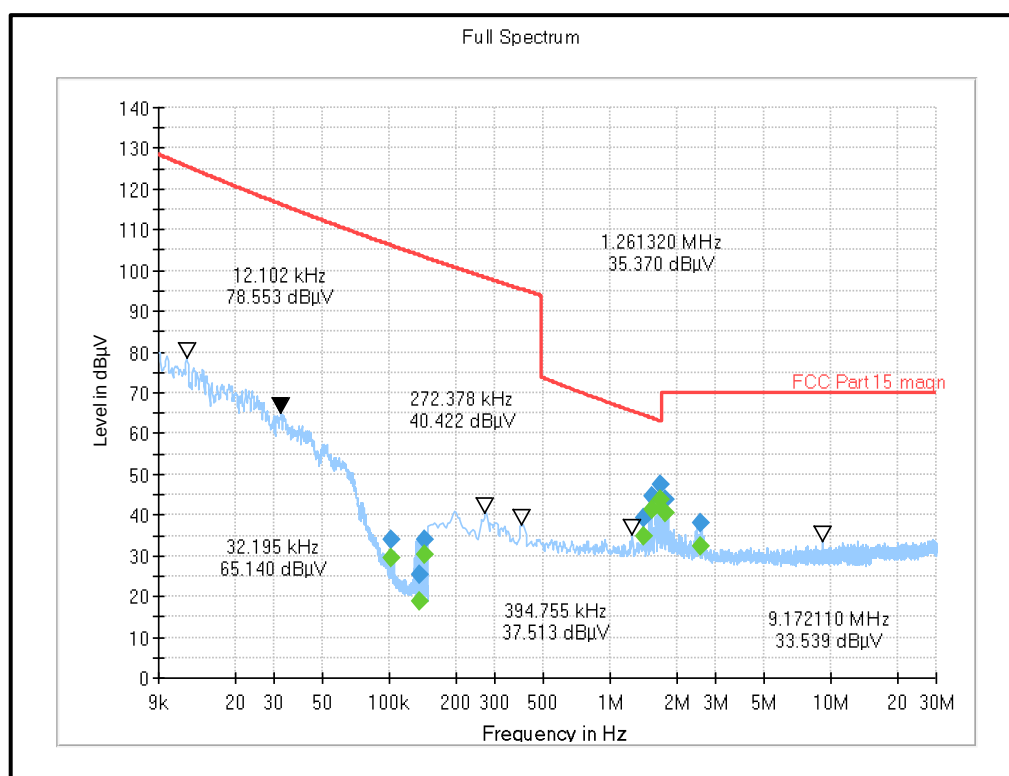
Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Note(s):**

7. Measurements below 30 MHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. The measurement loop antenna height was 100 cm.
8. Pre-scans were performed and markers placed on the highest measured levels. The test receiver was set to:
 - Frequency range: 9 kHz-150kHz: RBW: 300 Hz /VBW: 1 kHz
 - Frequency range: 150 kHz – 30 MHz: RBW: 10 kHz /VBW: 30 kHz
 - Detector: Peak detector
 - Trace Mode: Max Hold

Test Setup:

Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n20 / Internal antenna**

Frequency (MHz)	Antenna Polarity	Level@3m (dBμV/m)	Level extrapolated (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
0.101496	90° to the EUT	34.06	-45.94	-32.19	72.12	Complied
0.137310	0° to the EUT	25.31	-54.69	-54.82	78.37	Complied
0.145136	0° to the EUT	34.02	-45.98	-55.06	69.21	Complied
1.416773	0° to the EUT	39.26	-0.74	24.47	25.21	Complied
1.542458	0° to the EUT	44.48	4.48	23.78	19.30	Complied
1.678065	0° to the EUT	47.45	7.45	23.1	15.65	Complied
1.780598	0° to the EUT	43.97	3.97	30	26.03	Complied
2.574398	0° to the EUT	38.13	-1.87	30	31.87	Complied



Plot: Radiated Transmitter spurious emission from 9 kHz – 30 MHz

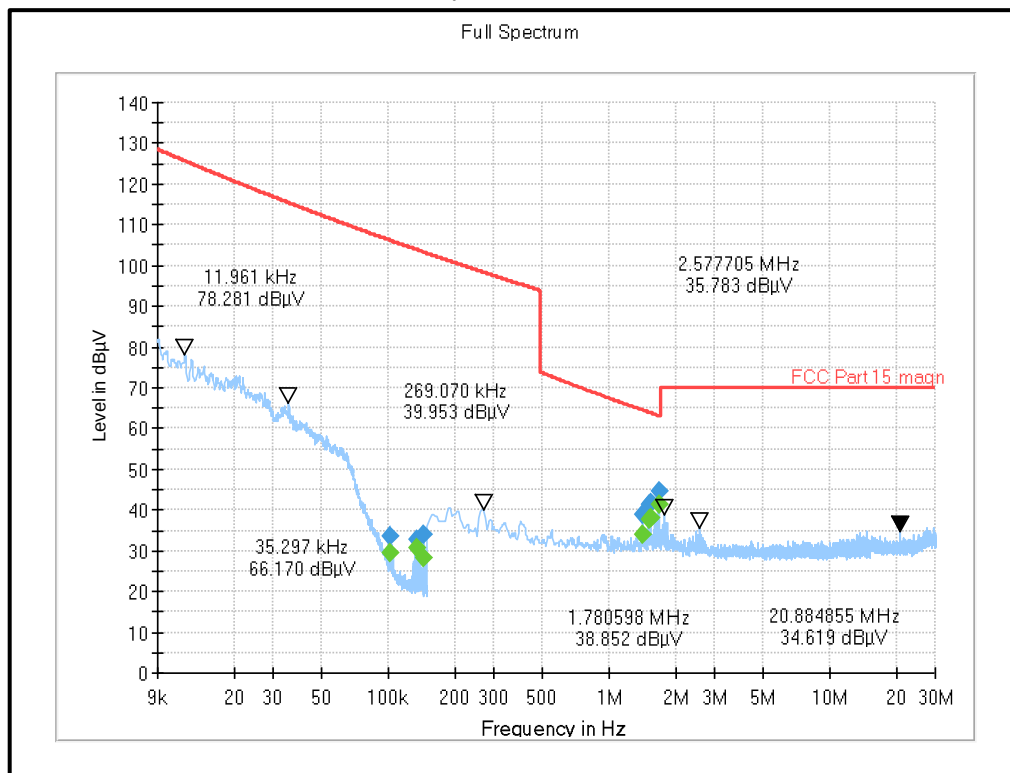
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n20 / External antenna**

Frequency (MHz)	Antenna Polarity	Level@3m (dB μ V/m)	Level extrapolated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
0.101778	90° to the EUT	33.47	-46.53	26.16	72.69	Complied
0.133433	0° to the EUT	32.69	-47.31	23.92	71.23	Complied
0.144854	0° to the EUT	34.18	-45.82	23.25	69.07	Complied
1.420080	0° to the EUT	38.73	-1.27	24.45	25.72	Complied
1.506075	0° to the EUT	41.24	1.24	23.97	22.73	Complied
1.542458	0° to the EUT	41.85	1.85	23.78	21.93	Complied
1.678065	0° to the EUT	44.74	4.74	23.10	18.36	Complied

Plot: Radiated Transmitter spurious emission from 9 kHz – 30 MHz



*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	14 March 2024 to 15 March 2024
Test Sample Serial Number:	6869032 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

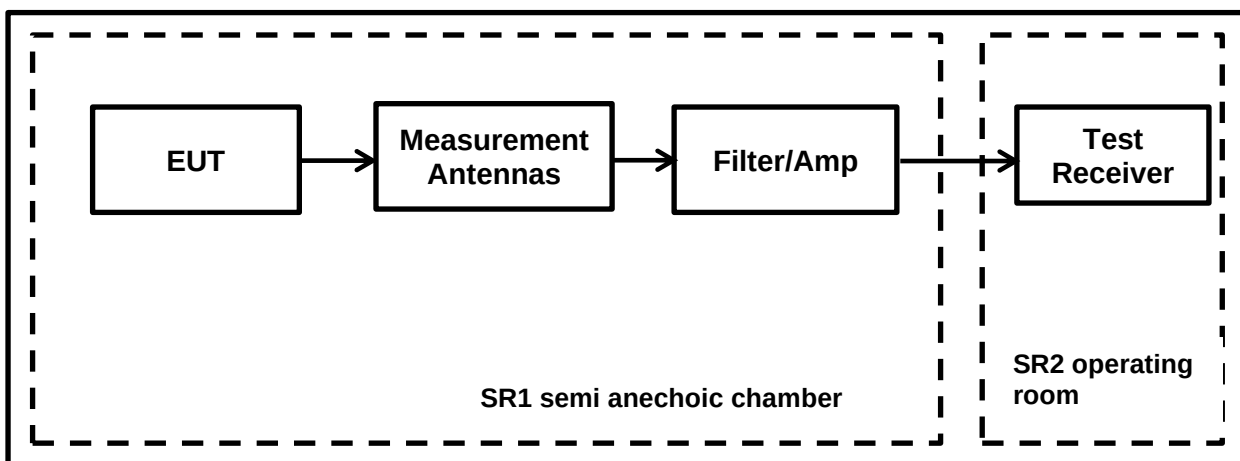
FCC Reference:	15.407(b)(1)/15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.1.3
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4 & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	20.4 to 21.7
Relative Humidity (%):	46.2 to 47.1

Note(s):

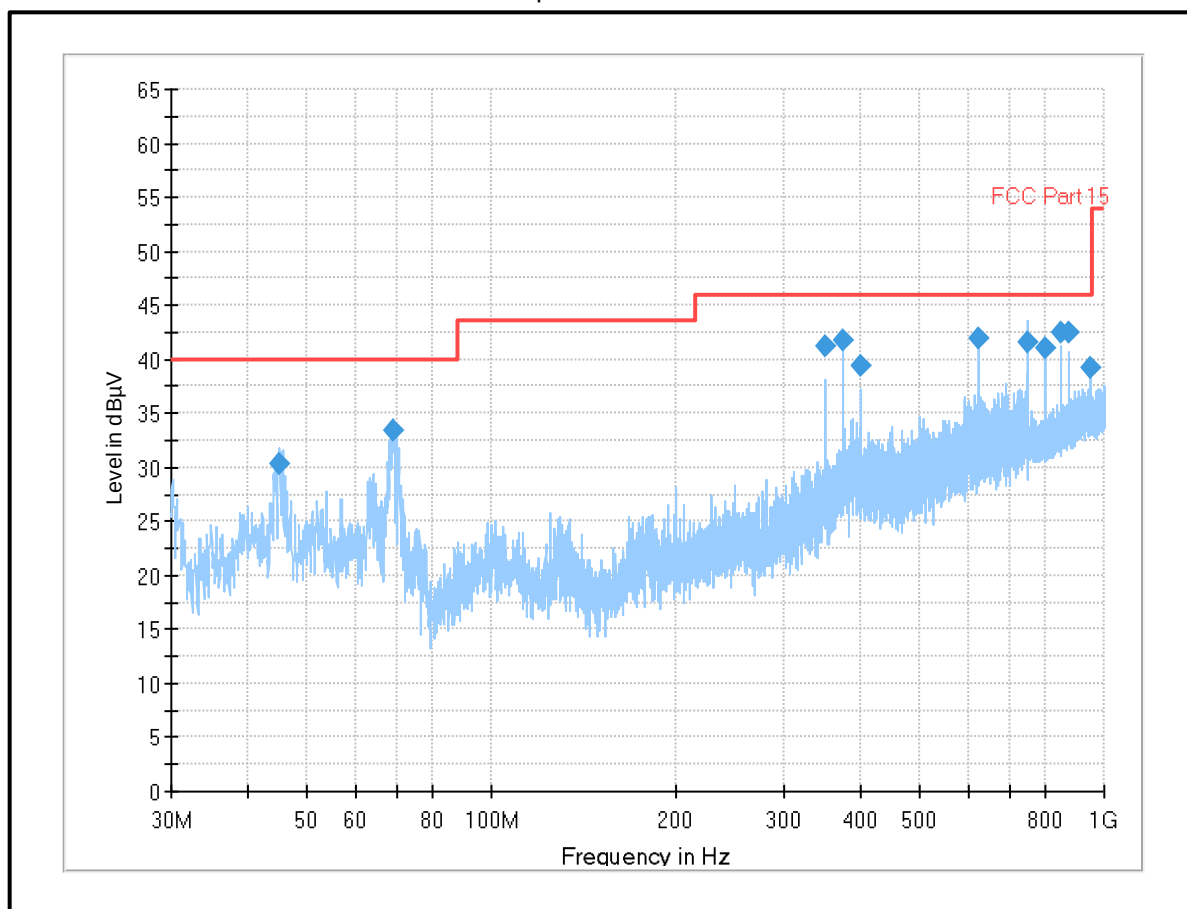
- Measurements below 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 m to 4 m.
- Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
- The measurement was performed with the following worst-case mode.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16
- Final measurements were performed on the marker frequencies. The results entered in the table below incorporates the calibrated antenna factor and cable loss. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector and span big enough to see the whole emission.

Test Setup:

Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
45.120000	Vertical	30.36	40.00	9.64	Complied
69.195000	Vertical	33.32	40.00	6.68	Complied
350.000000	Vertical	41.30	46.00	4.70	Complied
374.966667	Vertical	41.84	46.00	4.16	Complied
400.000000	Vertical	39.37	46.00	6.63	Complied
625.000000	Horizontal	42.03	46.00	3.97	Complied
750.000000	Horizontal	41.59	46.00	4.41	Complied
799.958333	Horizontal	41.06	46.00	4.94	Complied
850.000000	Horizontal	42.57	46.00	3.43	Complied
875.000000	Horizontal	42.43	46.00	3.57	Complied
950.000000	Horizontal	39.23	46.00	6.77	Complied

Plot: Radiated Transmitter spurious emission from 30 MHz – 1 GHz



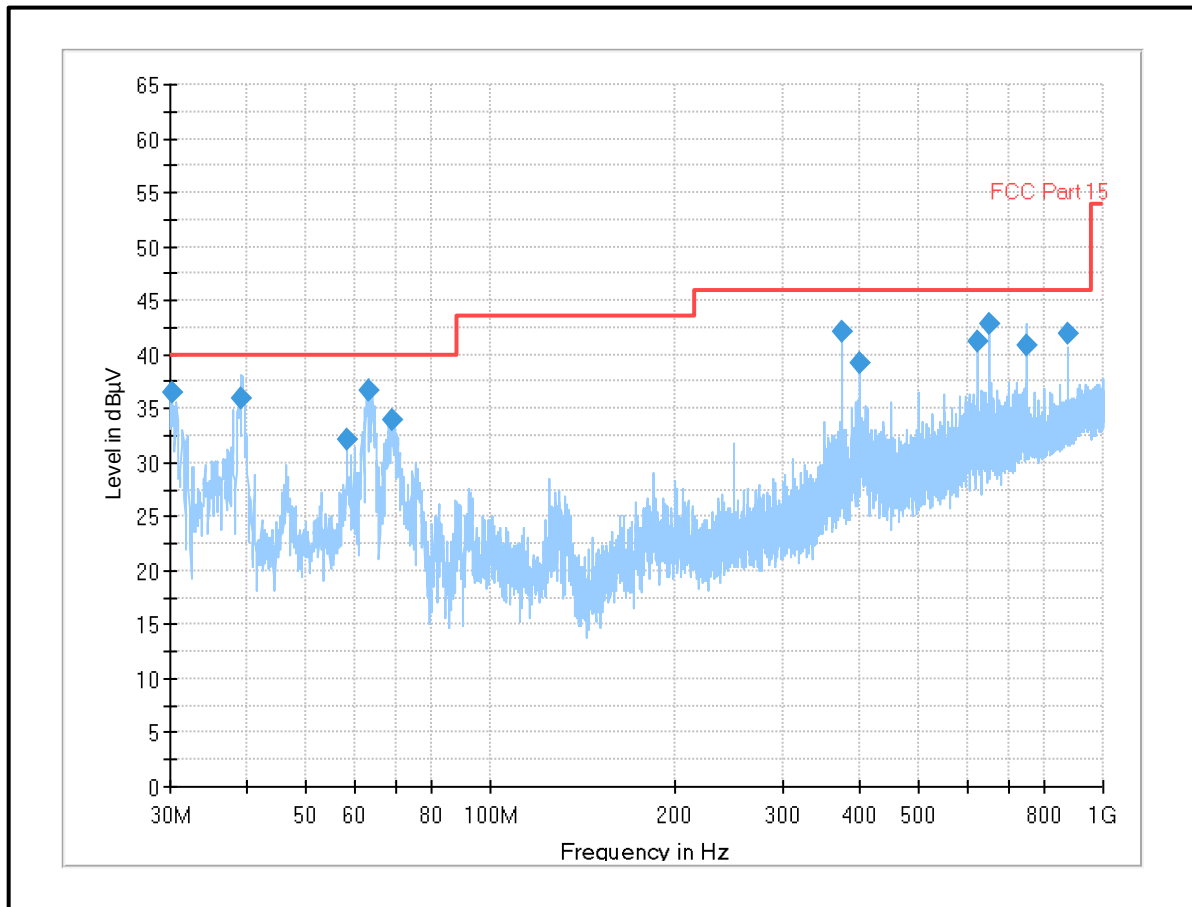
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n / external Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.135000	Vertical	36.46	40.00	3.54	Complied
39.270000	Vertical	35.94	40.00	4.06	Complied
58.215000	Vertical	32.09	40.00	7.91	Complied
63.345000	Vertical	36.59	40.00	3.41	Complied
69.285000	Vertical	33.89	40.00	6.11	Complied
400.000000	Vertical	42.11	46.00	3.89	Complied
375.000000	Horizontal	39.23	46.00	6.77	Complied
625.000000	Horizontal	41.29	46.00	4.71	Complied
650.000000	Horizontal	42.85	46.00	4.15	Complied
750.000000	Horizontal	40.91	46.00	5.09	Complied
874.958333	Horizontal	42.03	46.00	3.97	Complied

Plot: Radiated Transmitter spurious emission from 30 MHz – 1 GHz



Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	6 March 2024 to 11 March 2024
Test Sample Serial Number:	6869032 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	15.407(b)(1)/15.209(a)
ISED Reference:	RSS-Gen Sections 6.13, 8.9 & 8.10 / RSS-247 7.3.1.3
Test Method Used:	KDB 789033 II .G.1, II .G.2, II .G.3, II .G.5 &, II .G.6 ANSI C63.10:2020 Sections 6.3 and 6.6
Frequency Range	1 GHz to 40 GHz

Environmental Conditions:

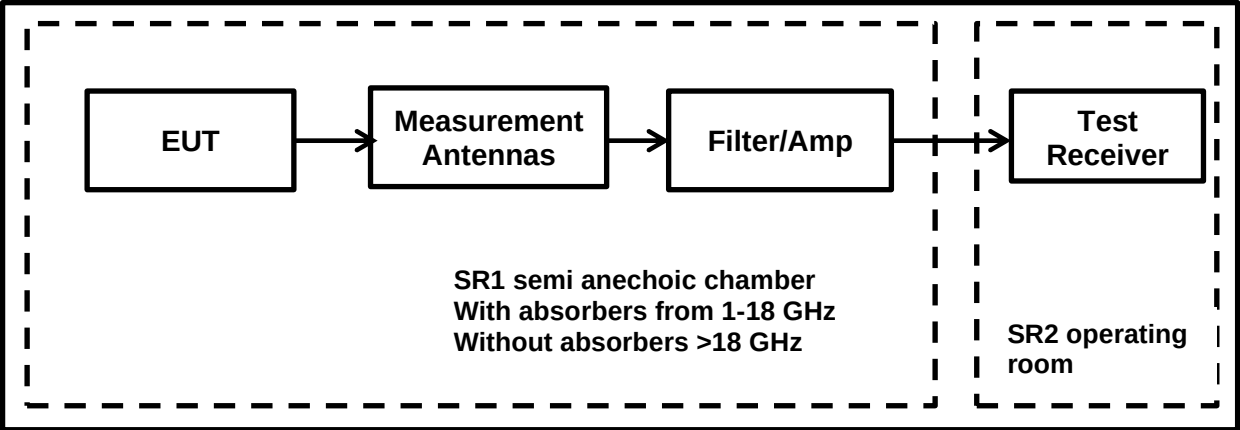
Temperature (°C):	22.1 to 26.8
Relative Humidity (%):	48.0 to 33.5

Note(s):

1. Pre-scans above 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with absorber on the floor at a distance of 3 m. The EUT was placed at a height of 1.5 m above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 m above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with absorber on the floor at a distance of 3 m. The EUT was placed at a height of 1.5 m above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 m to 4 m.
2. Measurements above 18 GHz were performed at closer distance @1m without height scan; because at specified measurement distance (3m) for compliance the instrumentation noise floor was typically close to the radiated emission limit.
3. The emission shown on the 1 GHz to 18 GHz plot is the EUT fundamental.
4. Pre-scans were performed and a marker placed on the highest measured level of the appropriate plot. The test receiver resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. The sweep time was set to auto.
5. Measurements performed on bottom, Middle and top channels and only the worst-case emission plot is reported.
6. The measurement was performed with the following worst-case mode.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)

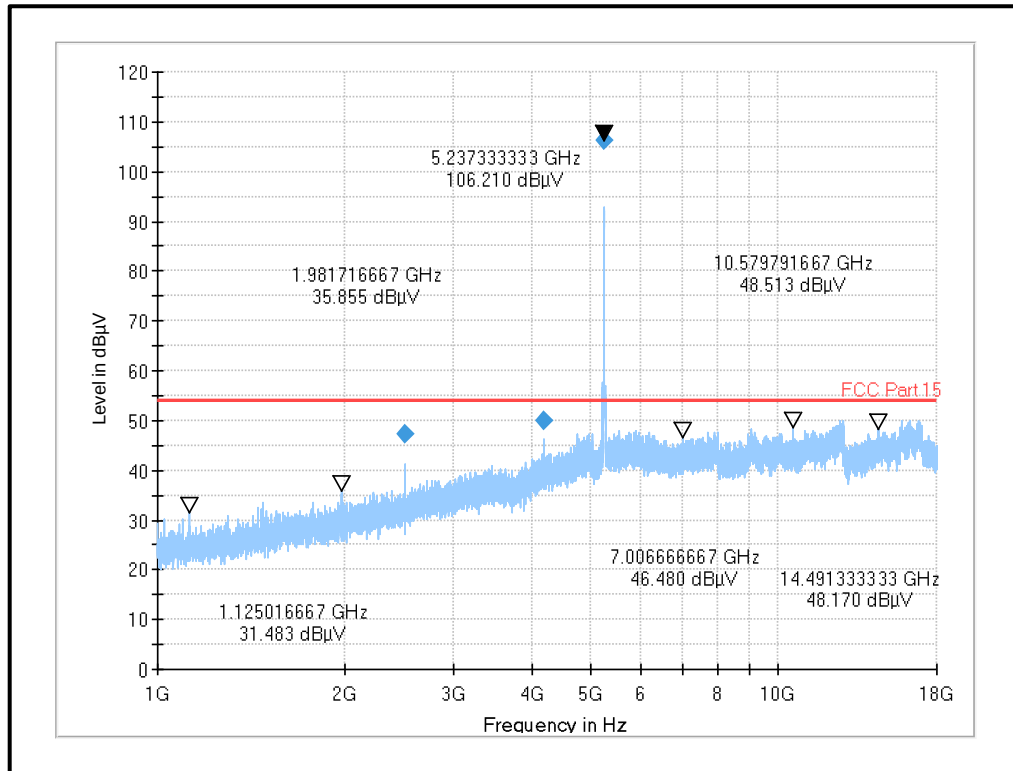
Test Setup:



Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2500.033333	Horizontal	47.22	54.00	6.78	Complied
4179.333333	Horizontal	49.91	54.00	4.09	Complied

Plot: Radiated Transmitter spurious emission from 1 GHz – 18 GHz



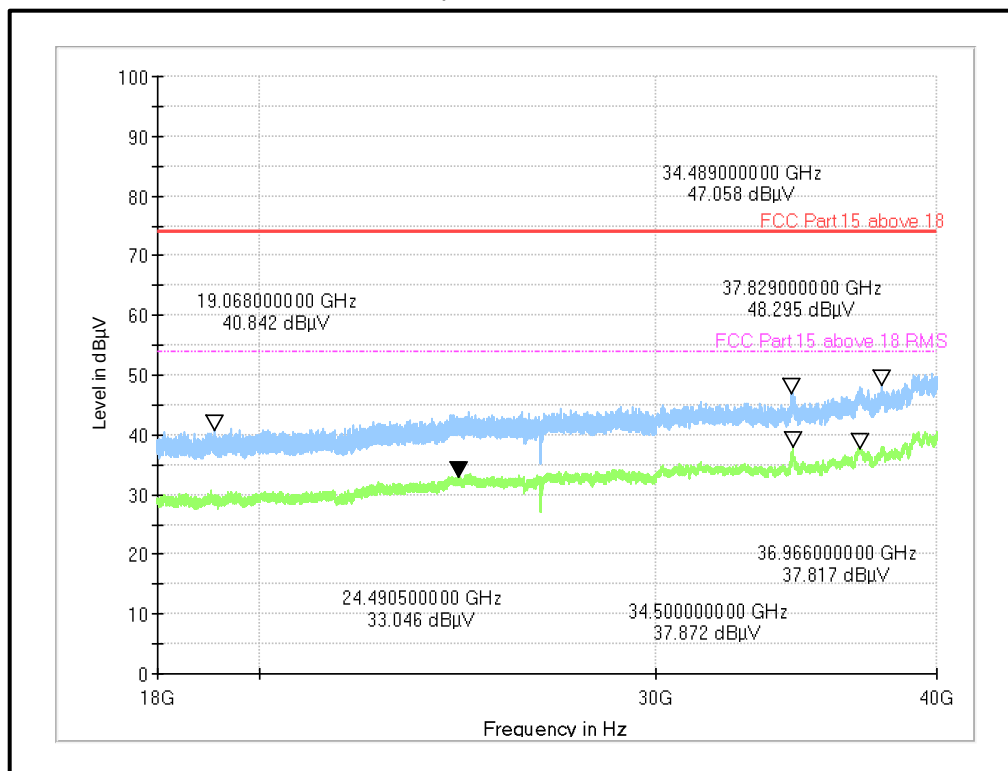
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: UNII-1 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical spurious emissions were found					

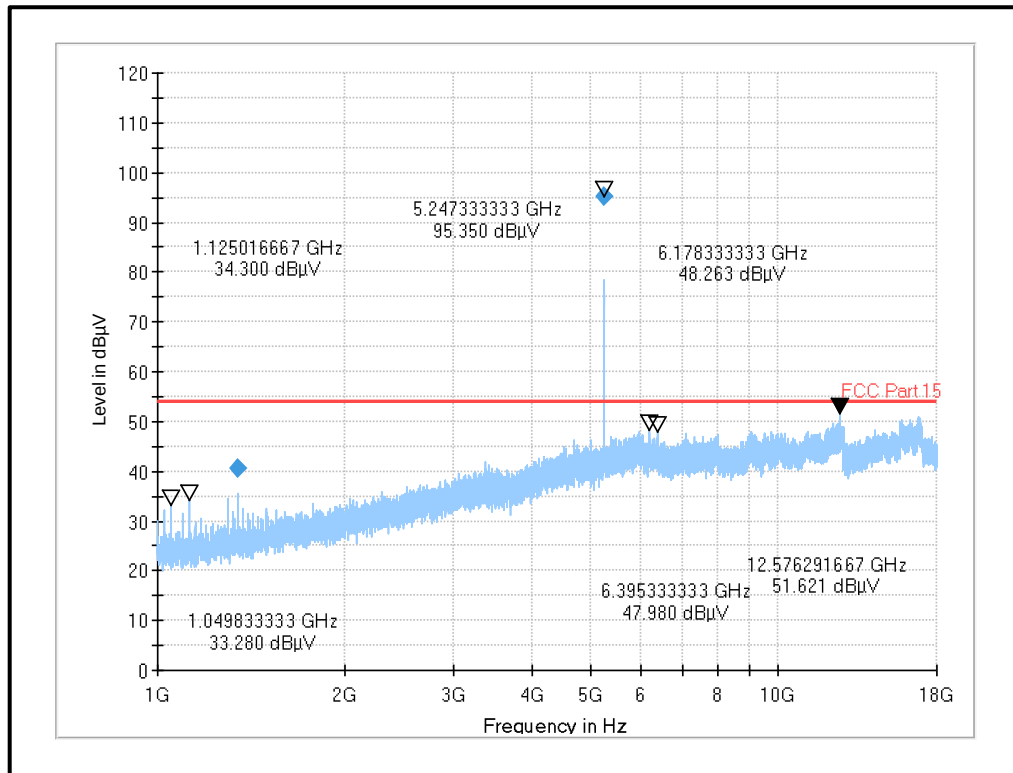
Plot: Radiated Transmitter spurious emission from 18 GHz – 40 GHz

**Result: Pass**

Transmitter Out of Band Radiated Emissions (continued) (5.15-5.25 GHz band operation)**Results: UNII-1 / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
1349.916667	Horizontal	40.61	54.00	13.39	Complied

Plot: Radiated Transmitter spurious emission from 1 GHz – 18 GHz



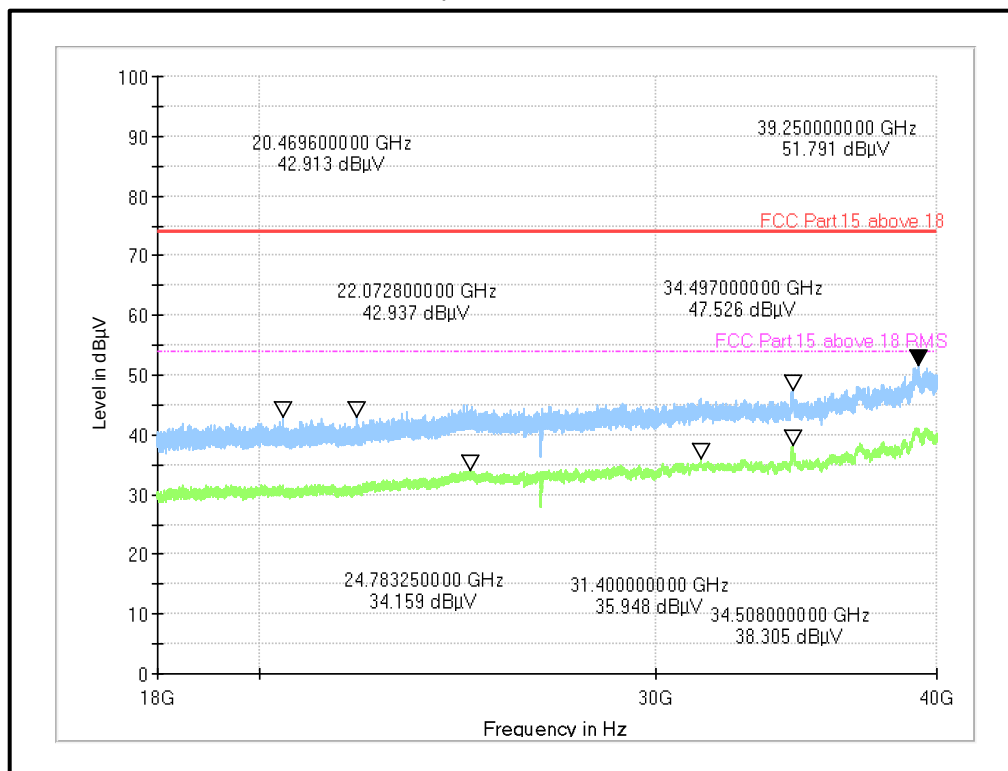
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: UNII-1 / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
No critical spurious emissions were found					

Plot: Radiated Transmitter spurious emission from 18 GHz – 40 GHz

**Result: Pass**

4.2.8. Transmitter Out of Band Radiated Emissions (5.25-5.35 GHz band operation)**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	14 March 2024
Test Sample Serial Number:	0442560082330100049		
Test Site Identification	SR 1/2		

FCC Reference:	15.407(b)(2)/15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.2.3
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4. & ANSI C63.10 Sections 6.3 and 6.4
Frequency Range:	9 kHz to 30 MHz

Environmental Conditions:

Temperature (°C):	20.4
Relative Humidity (%):	46.2

Note(s):

- As allowed by ANSI C63.10 clause 5.2 an alternative test site that can demonstrate equivalence to a open area test site may be used. Therefore, the measurement was performed in a Semi Anechoic Chamber. (The OATS / SAC comparison data is available upon request).
- FCC rule part 15.209(a) specifies limits at 300 m / 30 m in $\mu\text{V/m}$ but RSS GEN specifies limits at 300 m / 30 m in $\mu\text{A/m}$. The relevant limits are the same after accounting for E-field to H-field correction. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table). According to Notice 2020-DRS0023 converting the magnetic field strength into electrical field strength using the following equation while considering free space impedance of 377Ω results in a factor of 51.5 dB Ω .

$$AF^E [\text{dB}(\text{m}^{-1})] = AF^H [\text{dB}(\Omega^{-1}\text{m}^{-1})] + Z_0[\text{dB}\Omega]$$

For example, the measurement frequency X KHz resulted in a level of Y dB $\mu\text{V/m}$, which is equivalent to Y -51.5 = Z dB $\mu\text{A/m}$, which has the same margin, W dB, to the corresponding RSS-GEN Section 8.9, Table 6 limit as it has to the 15.209(a) limit.

- The limits are specified at a test distances of 30 m & 300 metres. However, as specified in ANSI C63.10 clause 6.4.3, measurements may be performed at a closer distance and the measured level extrapolated to the specified measurement distance using the method described in clauses 6.4.4, specifically sub-clause 6.4.4.1 which specifies that the measured level shall be extrapolated to the specified distance by conservatively presuming that the field strength decays at 40 dB/decade. Therefore, measurements were performed at a measurement distance of 3 m.
- The measurement was performed with the following worst-case mode w.r.t output power.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16
- The measured values at 3 m were extrapolated to the required measurement distances of 300 m and 30 m and compared the specified limits at those distances as follows:
 - 9 kHz- 490 kHz: measured value extrapolated from 3 m to 300 m by subtracting 80 dB at 40 dB /decade.
 - 490 kHz-30 MHz: measured value extrapolated from 3 m to 30 m by subtracting 40 dB at 40 dB /decade.

The results table shows both the measured levels at 3 m and the same measurement values extrapolated to the actual measurement distance for the limits specified at 30 and 300 metres.

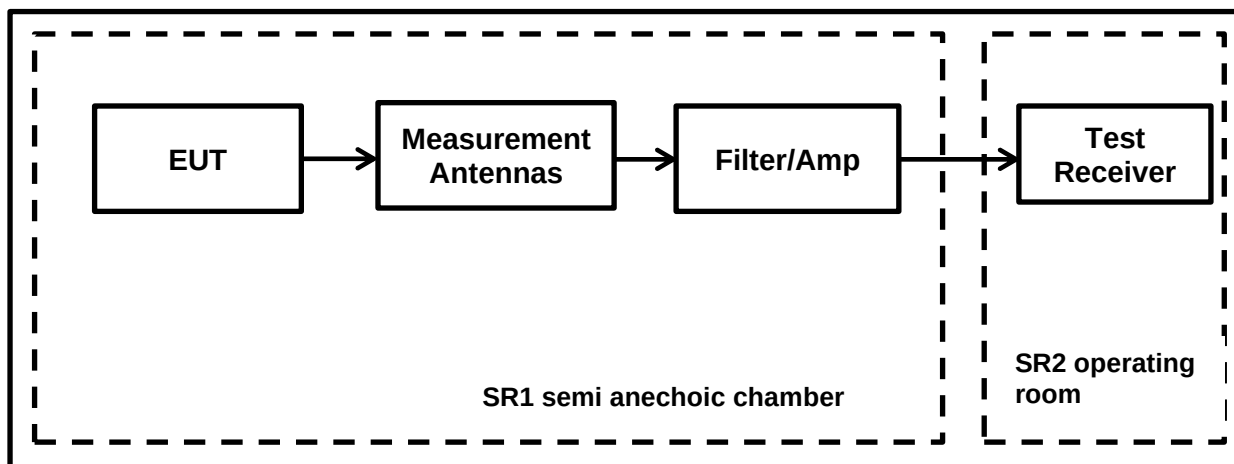
Conversely, the limit line shown on the spectrum plot was extrapolated to 3 m from 300 m and 30 m using the 40 dB /decade rule.

Transmitter Out of Band Radiated Emissions (continued) (5.25-5.35 GHz band operation)

Note(s):

6. All emissions shown on the pre-scan plots were investigated and found to be below system noise floor.
7. Measurements below 30 MHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT placed on table 80 cm from ground plane in the centre of the chamber turntable. The measurement loop antenna height was at 1 m.
8. Pre-scans were performed, and markers placed on the highest measured levels. The test receiver was set to:
 - Frequency range: 9 kHz-150 kHz : RBW: 300 Hz /VBW: 1 kHz
 - Frequency range: 150 kHz – 30 MHz: RBW: 10 kHz /VBW: 30 kHz
 - Detector: Peak detector
 - Trace Mode: Max Hold

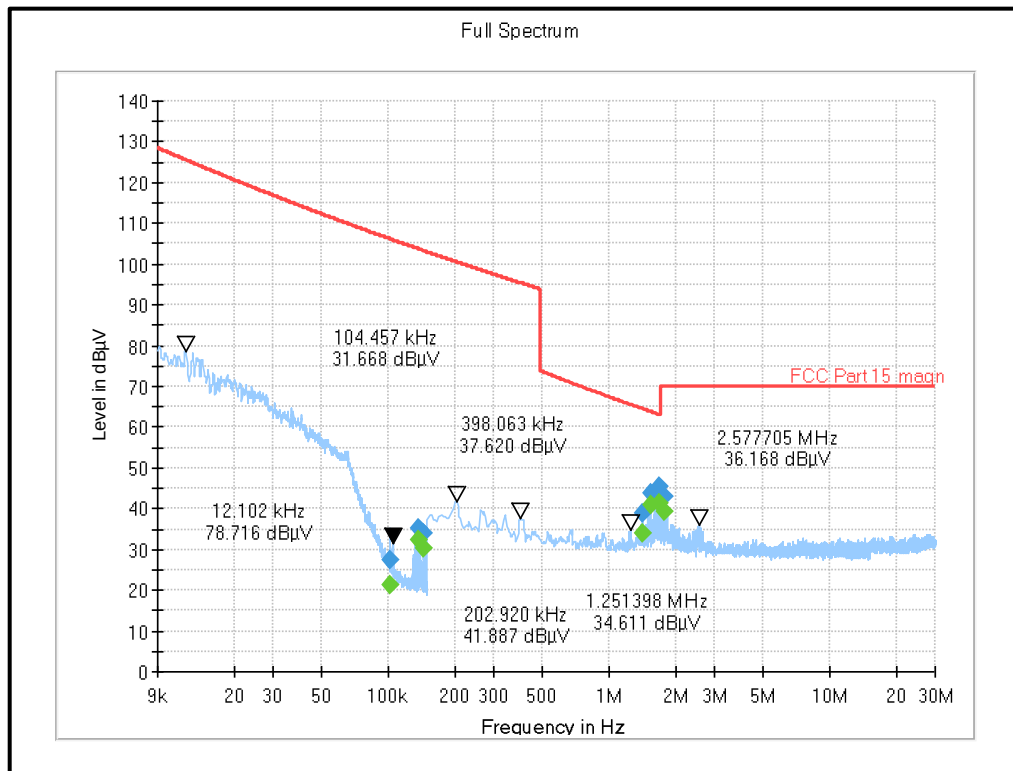
Test Setup:



Transmitter Out of Band Radiated Emissions (continued) (5.25-5.35 GHz band operation)**Results: UNII-2A / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarity	Level@3m (dB μ V/m)	Level extrapolated (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
0.101426	90° to the EUT	27.37	-52.63	26.19	72.12	Complied
0.136746	0° to the EUT	35.40	-44.60	23.72	78.37	Complied
0.145206	0° to the EUT	34.04	-45.96	23.23	69.21	Complied
1.416773	0° to the EUT	38.72	-1.28	24.47	25.75	Complied
1.542458	0° to the EUT	43.96	3.96	23.78	19.82	Complied
1.674758	0° to the EUT	45.26	5.26	23.11	17.85	Complied
1.780598	0° to the EUT	43.03	3.03	30	26.97	Complied

Plot: Radiated Transmitter spurious emission from 9 kHz – 30 MHz



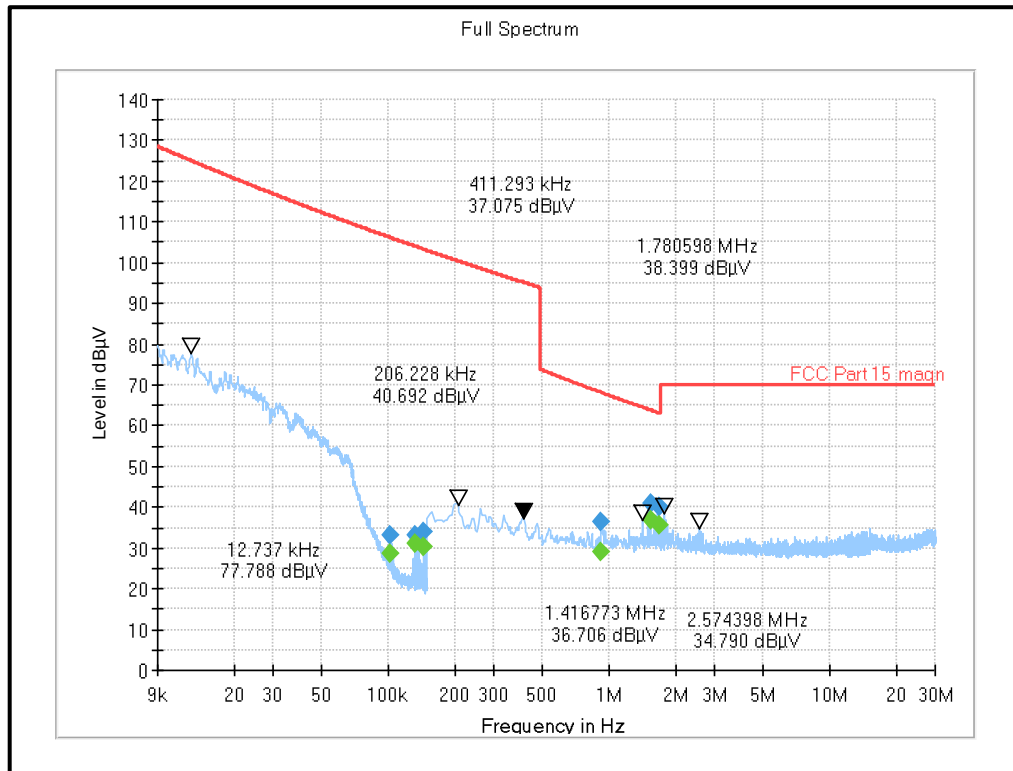
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

Transmitter Out of Band Radiated Emissions (continued) (5.25-5.35 GHz band operation)**Results: UNII-2A / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarity	Level@3m (dBμV/m)	Level extrapolated (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
0.101849	90° to the EUT	33.21	-46.79	26.15	72.94	Complied
0.132375	0° to the EUT	32.97	-47.03	23.98	71.01	Complied
0.145065	0° to the EUT	34.04	-45.96	23.24	69.20	Complied
0.923955	90° to the EUT	36.28	-3.72	28.08	31.80	Complied
1.532535	0° to the EUT	40.85	0.85	23.83	22.98	Complied
1.674758	0° to the EUT	40.18	0.18	23.11	22.93	Complied

Plot: Radiated Transmitter spurious emission from 9 kHz – 30 MHz



Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**