

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

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

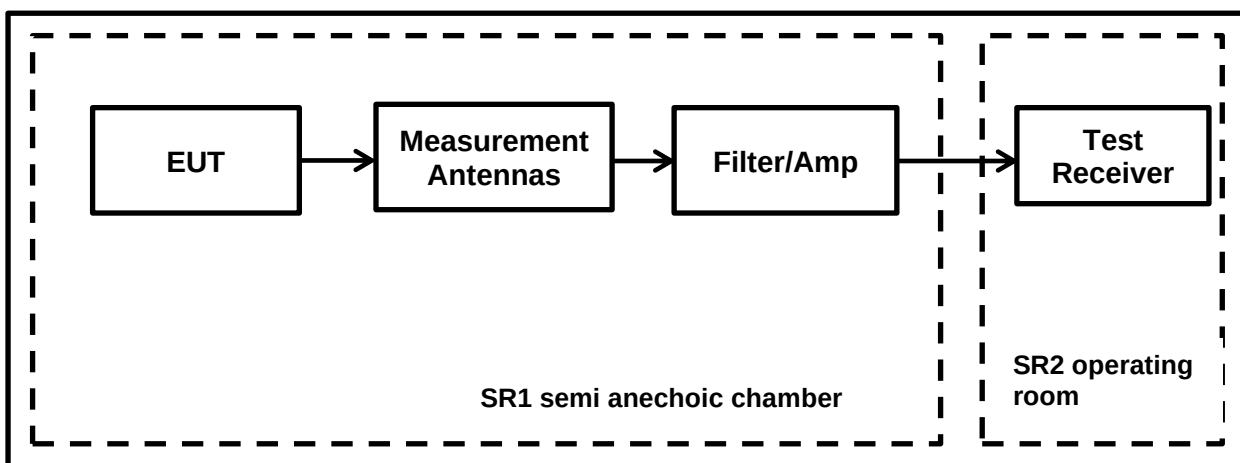
FCC Reference:	15.407(b)/15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.2.3
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4 & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	21.7
Relative Humidity (%):	47.1

Note(s):

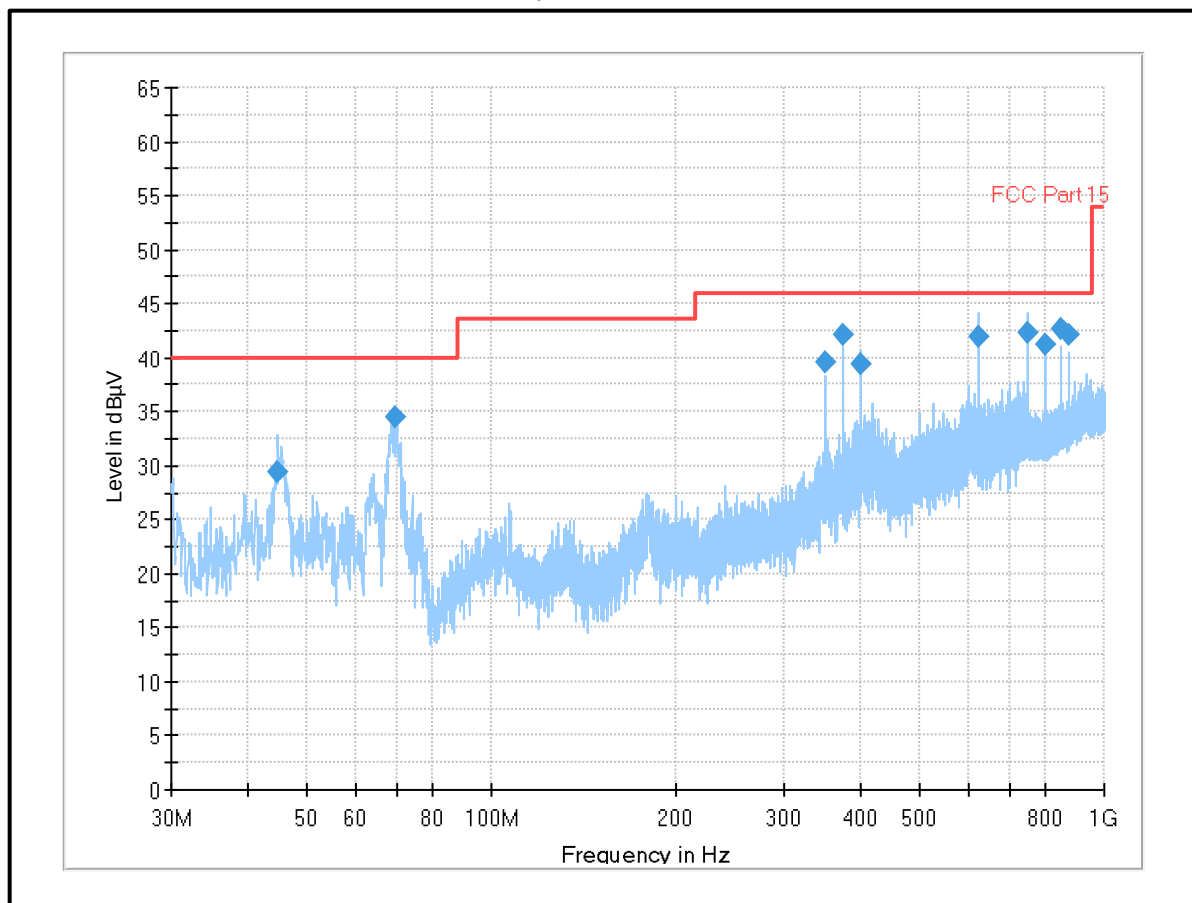
- Measurements below 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement 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 w.r.t output power.
 - 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) (5.25-5.35 GHz band operation)**Results: UNII-2A / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
44.805000	Vertical	29.33	40.00	10.67	Complied
69.375000	Vertical	34.50	40.00	5.50	Complied
349.966667	Vertical	39.54	46.00	6.46	Complied
374.966667	Vertical	42.09	46.00	3.91	Complied
400.000000	Vertical	39.37	46.00	6.63	Complied
625.000000	Horizontal	41.99	46.00	4.01	Complied
750.000000	Horizontal	42.22	46.00	3.78	Complied
799.958333	Horizontal	41.19	46.00	4.81	Complied
850.000000	Horizontal	42.61	46.00	3.39	Complied
874.958333	Horizontal	42.16	46.00	3.84	Complied

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



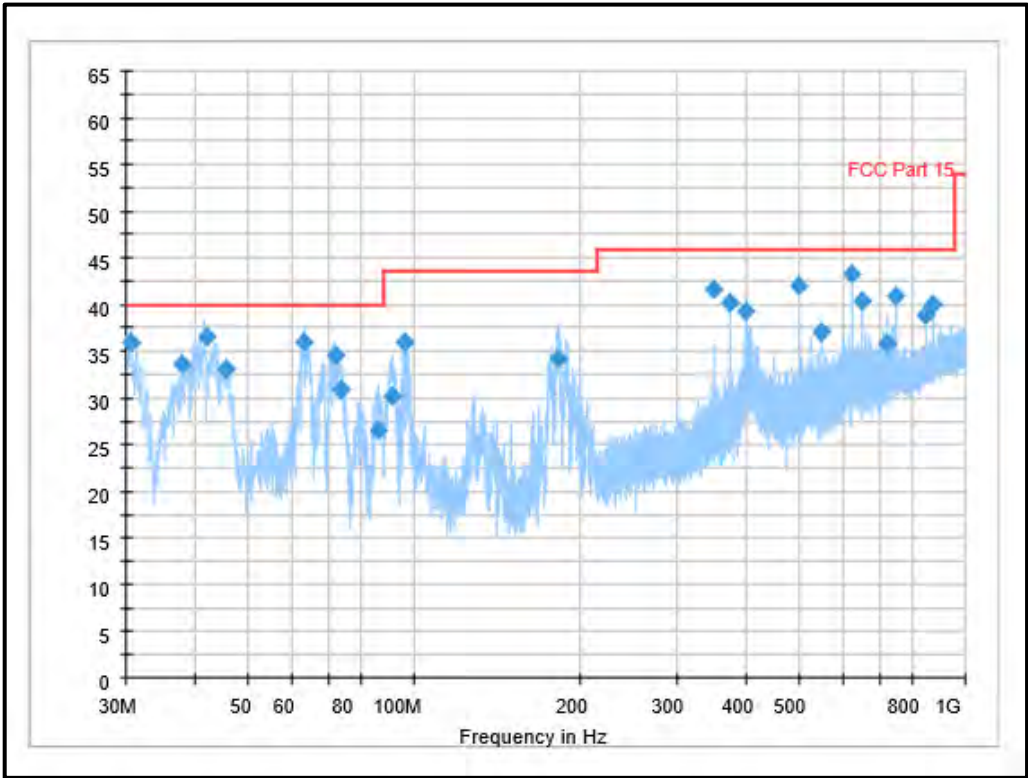
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

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

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.675000	Vertical	35.92	40.00	4.08	Complied
42.105000	Vertical	33.59	40.00	6.41	Complied
45.570000	Vertical	36.51	40.00	3.49	Complied
65.415000	Vertical	33.02	40.00	6.98	Complied
86.475000	Vertical	34.56	40.00	5.44	Complied
91.560000	Vertical	30.82	40.00	9.18	Complied
96.195000	Vertical	26.54	40.00	13.46	Complied
182.775000	Vertical	30.23	43.50	13.27	Complied
349.966667	Horizontal	35.94	43.50	7.56	Complied
374.966667	Horizontal	34.18	43.50	9.32	Complied
500.000000	Horizontal	41.65	46.00	4.35	Complied
550.000000	Vertical	40.11	46.00	5.89	Complied
625.000000	Vertical	39.23	46.00	6.77	Complied
650.000000	Horizontal	41.97	46.00	4.03	Complied
750.000000	Horizontal	40.85	46.00	5.15	Complied
850.000000	Horizontal	38.93	46.00	7.07	Complied
874.958333	Vertical	39.94	46.00	6.06	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) (5.25-5.35 GHz band operation)**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:	Parts 15.407(b)(2),(10) & 15.209(a)
Test Method Used:	FCC 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

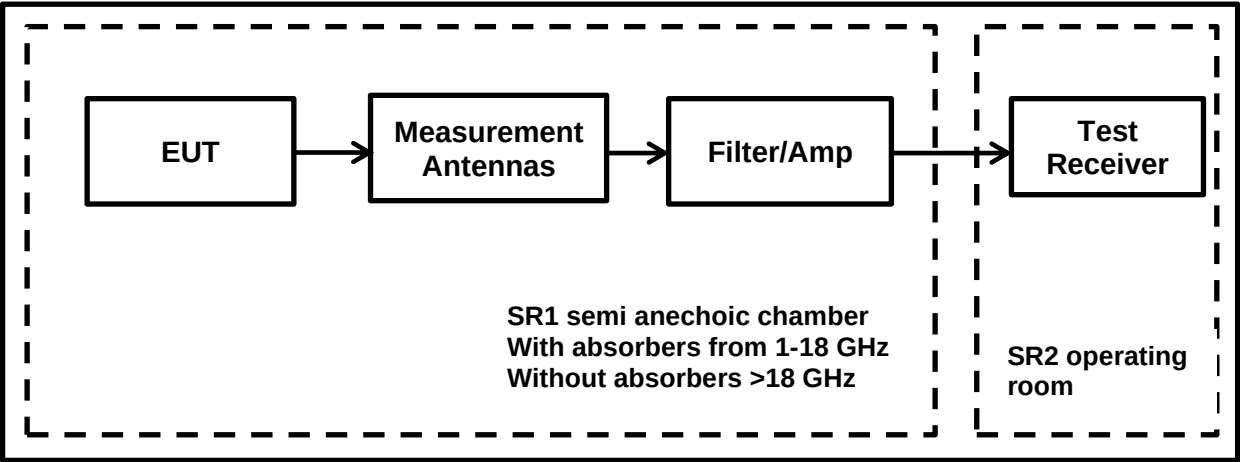
Environmental Conditions:

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

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 w.r.t output power.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16

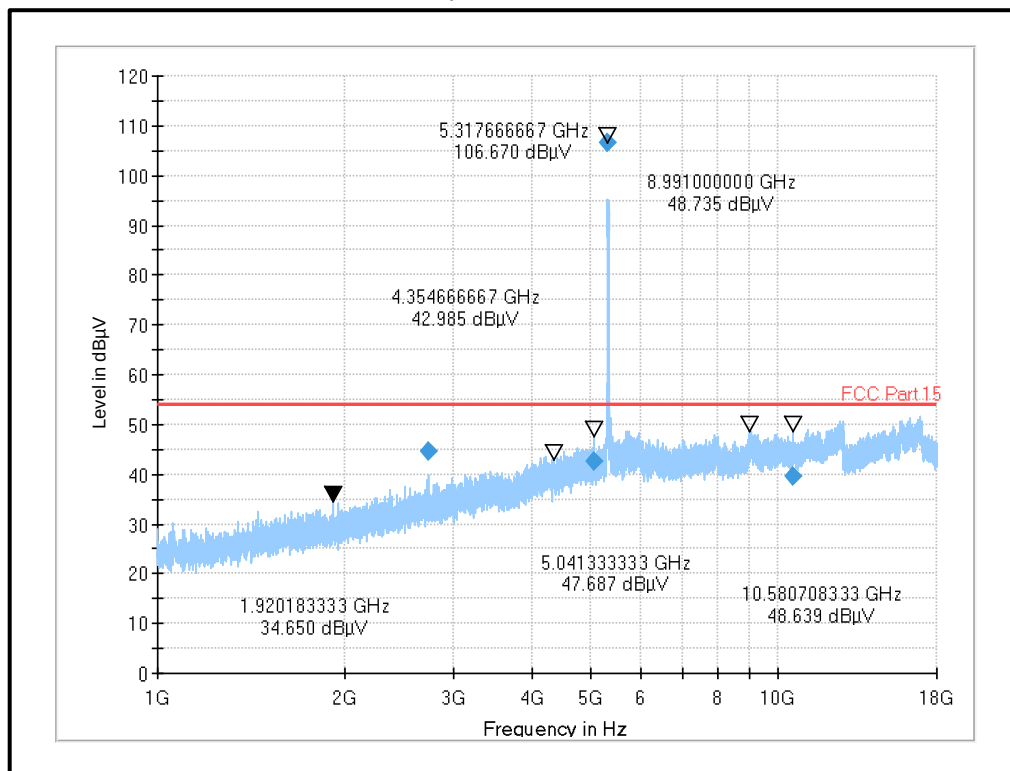
Test Setup:



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

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2734.633333	Vertical	44.61	54.00	9.39	Complied
5041.333333	Horizontal	42.44	54.00	11.56	Complied
10580.708333	Vertical	39.47	54.00	14.53	Complied

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



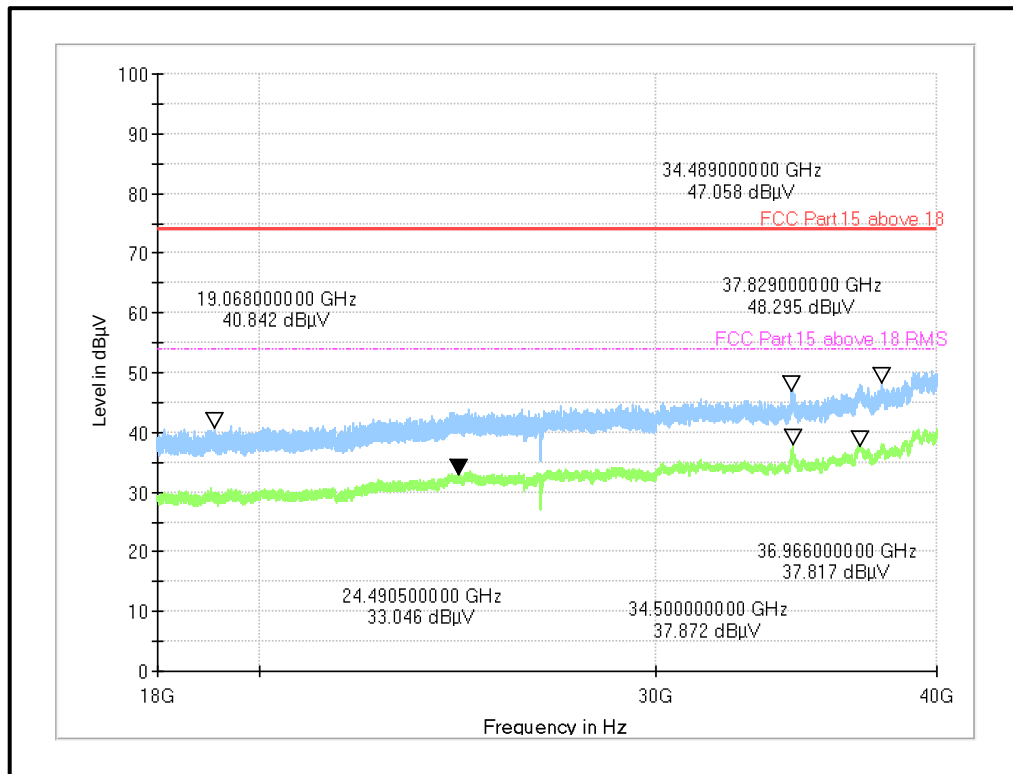
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

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

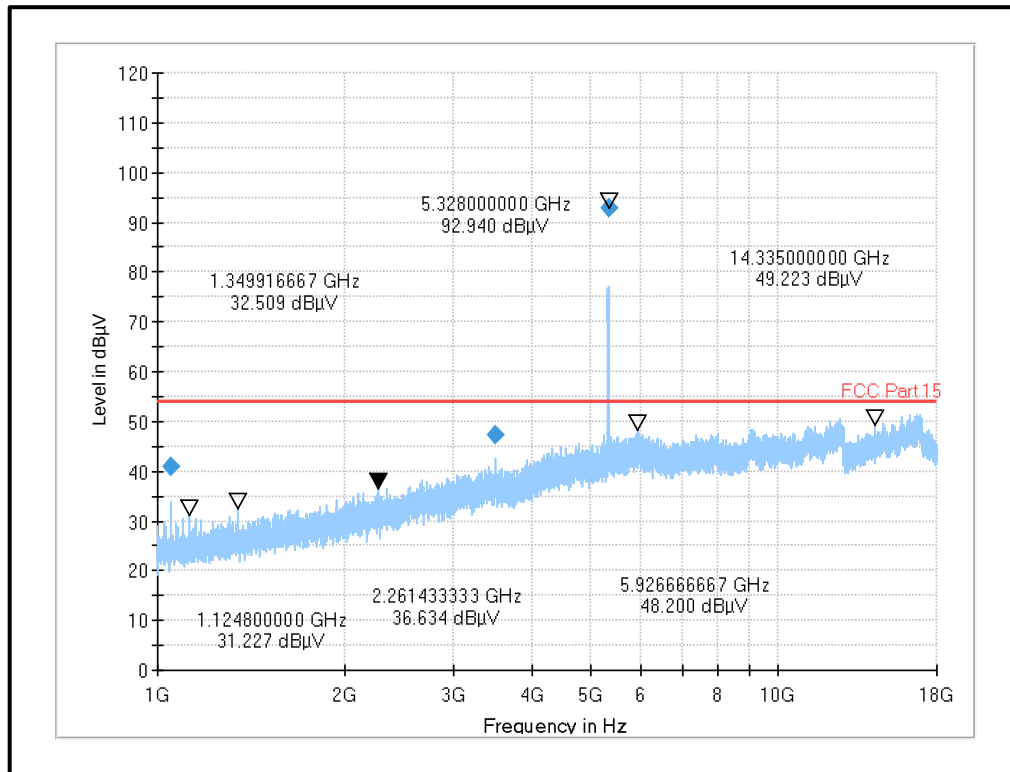
Plot: Radiated Transmitter spurious emission from 18 GHz – 40 GHz



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

Frequency (MHz)	Antenna Polarization	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
1049.833333	Horizontal	41.02	54.00	12.98	Complied
3499.350000	Horizontal	47.35	54.00	6.65	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.*

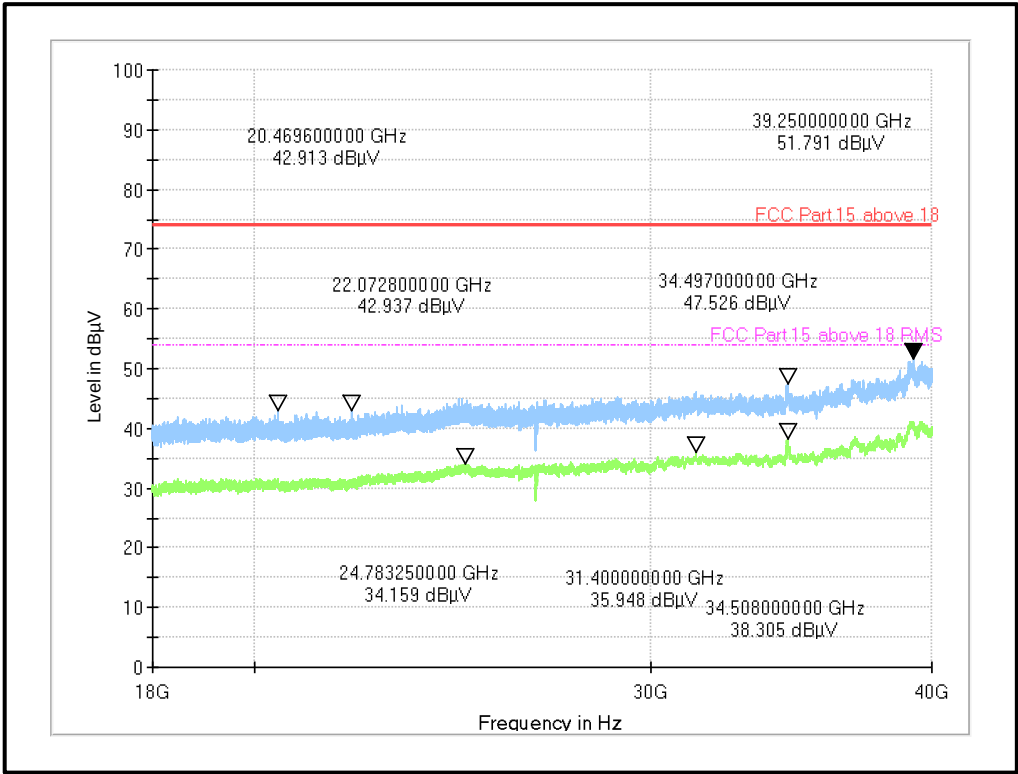
Result: Pass

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

Results: UNII-2A / 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

4.2.9. Transmitter Out of Band Radiated Emissions (5.47-5.725 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)(3),(10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.3.3
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.

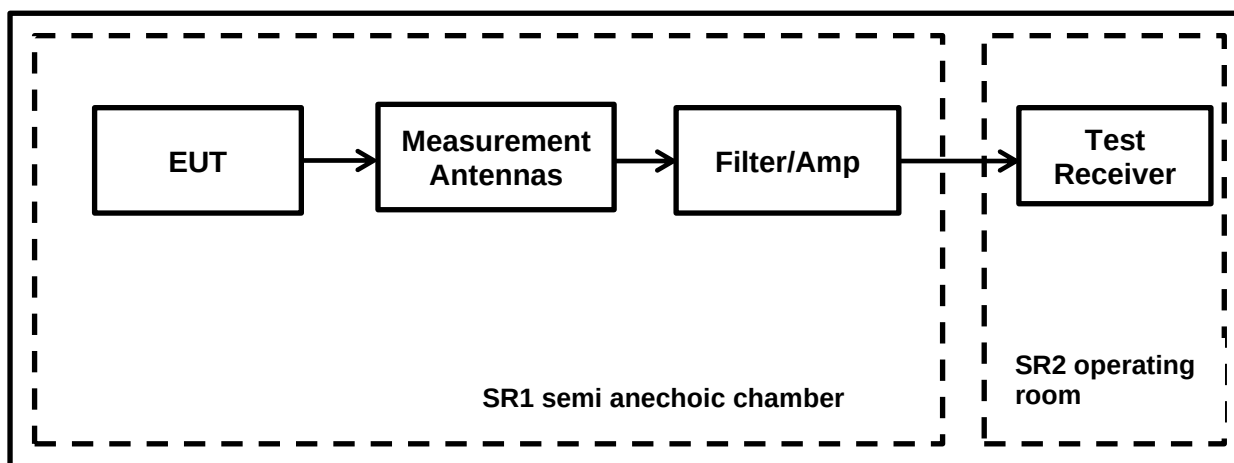
- The limits are specified at a test distances of 30 m & 300 metres. However, as specified in ANSI C63.10 clause 6.4.3, measurements may be performed at a closer distance and the measured level extrapolated to the specified measurement distance using the method described in clauses 6.4.4, specifically 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 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) (5.47-5.725 GHz band operation)**Note(s):**

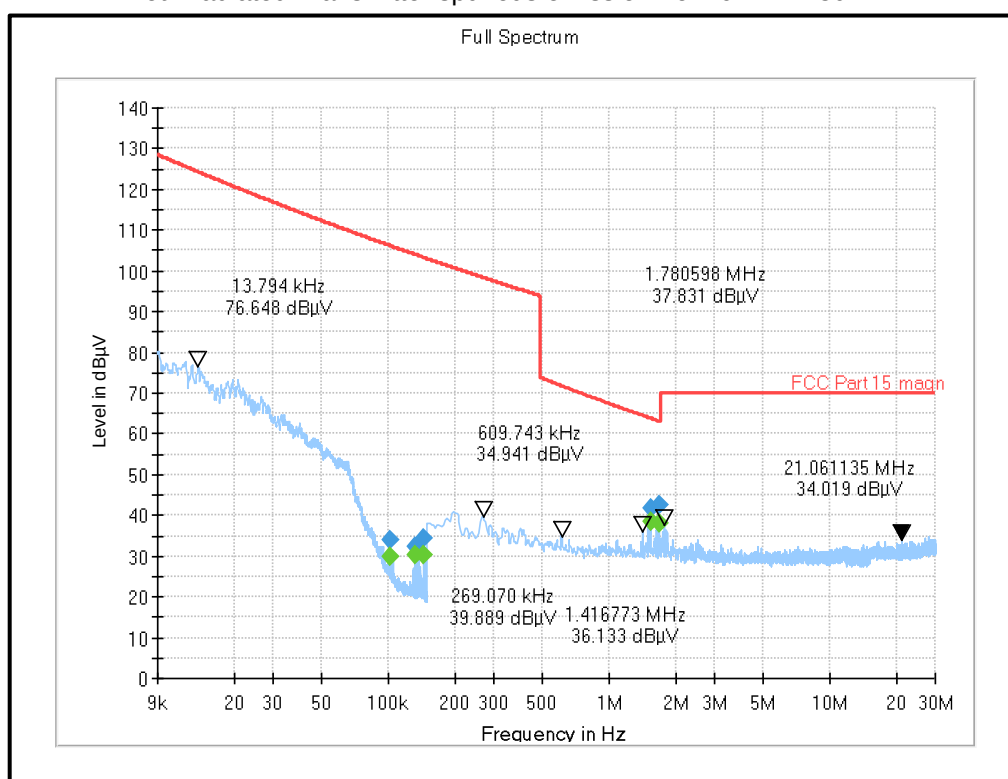
5. All emissions shown on the pre-scan plots were investigated and found to be below system noise floor.
6. The measurement was performed with the following worst-case mode w.r.t output power.
 - a. • WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16
7. Measurements below 30 MHz were performed 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) (5.47-5.725 GHz band operation)**Results: UNII-2C / 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
0.101637	90° to the EUT	34.18	-45.82	26.17	71.99	Complied
0.132516	0° to the EUT	32.31	-47.69	23.97	71.66	Complied
0.144995	0° to the EUT	34.35	-45.65	23.24	68.89	Complied
1.542458	0° to the EUT	41.58	1.58	23.78	22.20	Complied
1.674758	0° to the EUT	42.43	2.43	23.11	20.68	Complied

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



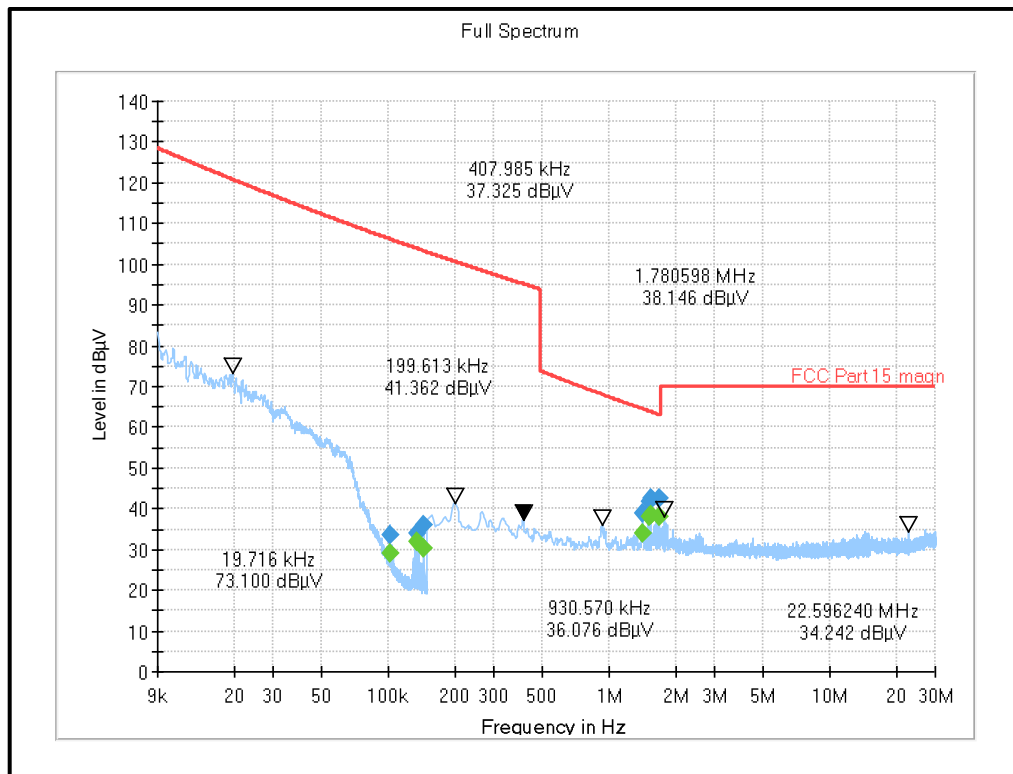
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / 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
0.101919	90° to the EUT	33.77	-46.23	26.15	72.38	Complied
0.133433	0° to the EUT	34.10	-45.9	23.92	69.82	Complied
0.144713	0° to the EUT	35.83	-44.17	23.26	67.43	Complied
1.420080	0° to the EUT	38.83	-1.17	24.45	25.62	Complied
1.506075	0° to the EUT	41.64	1.64	23.97	22.33	Complied
1.542458	0° to the EUT	42.40	2.40	23.78	21.38	Complied
1.674758	0° to the EUT	42.67	2.67	23.11	20.44	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) (5.47-5.725 GHz band operation)**Test Summary:**

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

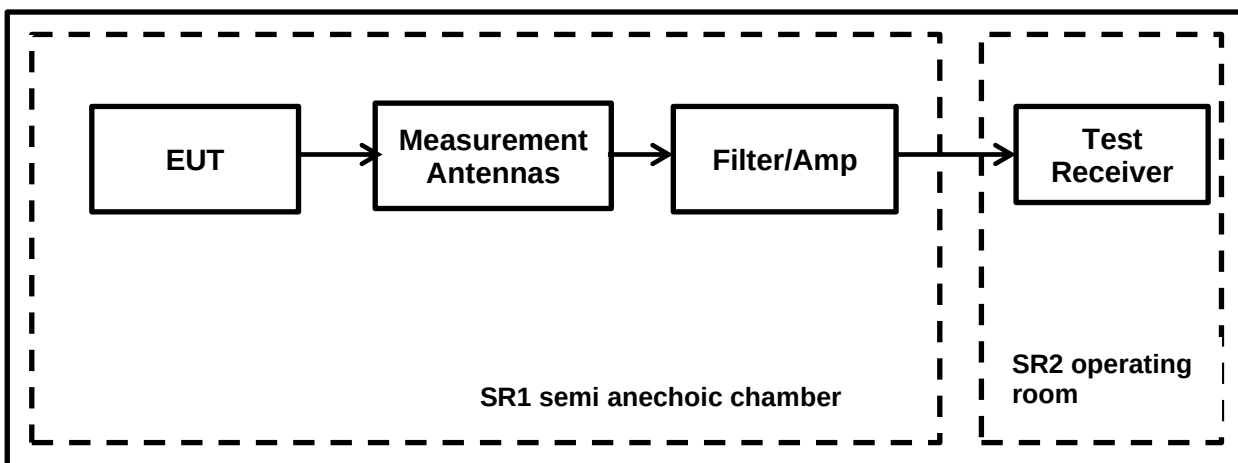
FCC Reference:	15.407(b)(3),(10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.3.3
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4 & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	21.7
Relative Humidity (%):	47.1

Note(s):

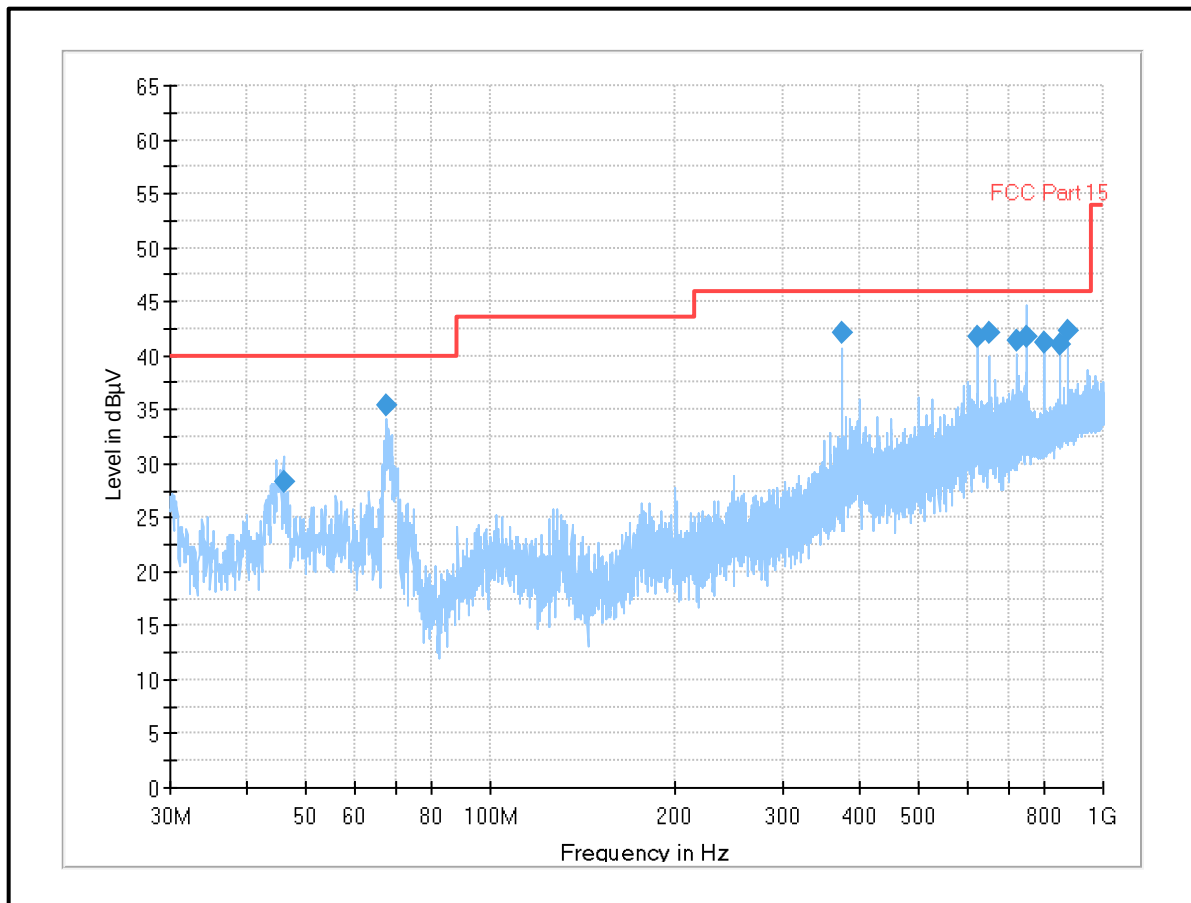
- Measurements below 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement 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 w.r.t output power.
 - 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) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / Internal Antenna****Non-Restricted Band:**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
45.885000	Vertical	28.37	40.00	11.63	Complied
67.440000	Vertical	35.47	40.00	4.53	Complied
374.966667	Vertical	42.16	46.00	3.84	Complied
625.000000	Vertical	41.81	46.00	4.19	Complied
650.000000	Horizontal	42.05	46.00	3.95	Complied
725.000000	Horizontal	41.32	46.00	4.68	Complied
750.000000	Horizontal	41.69	46.00	4.31	Complied
799.958333	Horizontal	41.16	46.00	4.84	Complied
849.958333	Horizontal	41.07	46.00	4.93	Complied
875.000000	Horizontal	42.28	46.00	3.72	Complied

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



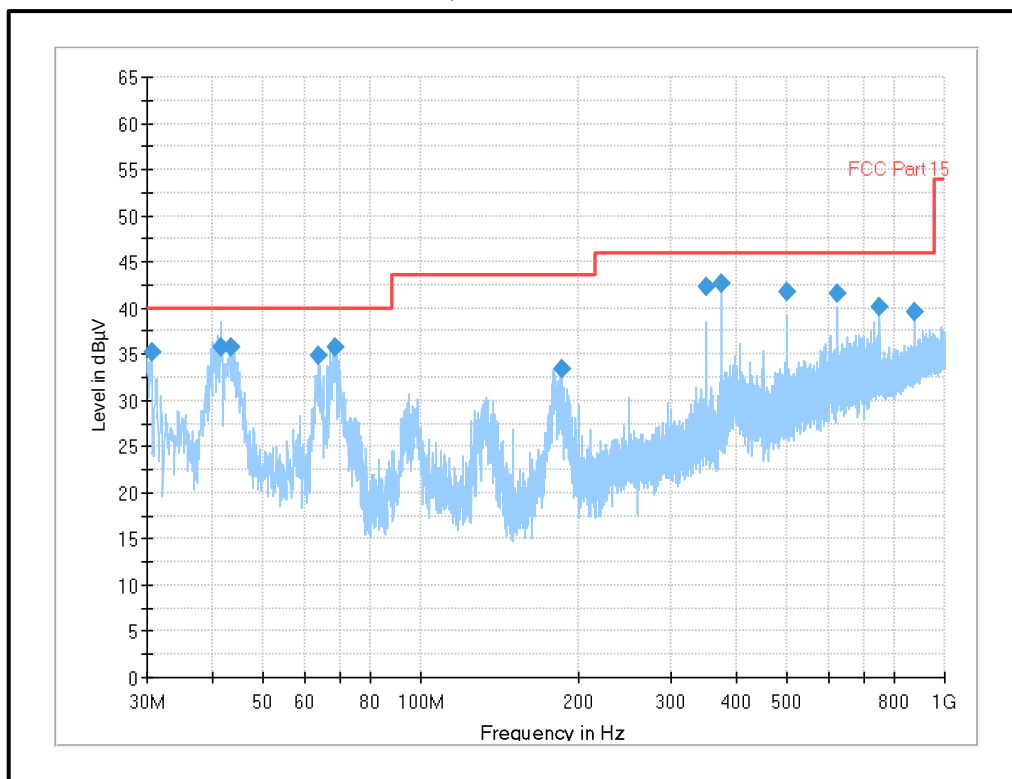
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: Pass

Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / External Antenna****Non-Restricted Band:**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.585000	Vertical	35.21	40.00	4.79	Complied
41.475000	Vertical	35.84	40.00	4.16	Complied
43.410000	Vertical	35.81	40.00	4.19	Complied
63.615000	Vertical	34.82	40.00	5.18	Complied
68.610000	Vertical	35.79	40.00	4.21	Complied
185.205000	Vertical	33.35	43.50	10.15	Complied
350.000000	Horizontal	42.35	46.00	3.65	Complied
375.000000	Horizontal	42.74	46.00	3.26	Complied
500.000000	Horizontal	41.78	46.00	4.22	Complied
625.000000	Vertical	41.66	46.00	4.34	Complied
750.000000	Horizontal	40.19	46.00	5.81	Complied
874.958333	Vertical	39.55	46.00	6.45	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) (5.47-5.725 GHz band operation)**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	7 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)(3), (10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.3.3
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

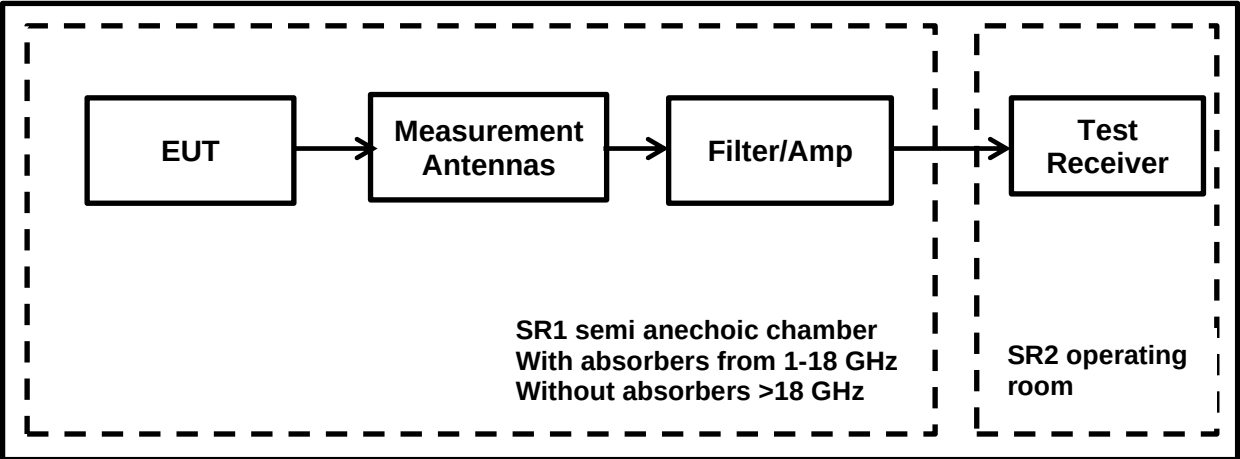
Environmental Conditions:

Temperature (°C):	21.5 to 26.8
Relative Humidity (%):	41.3 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 w.r.t output power.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16

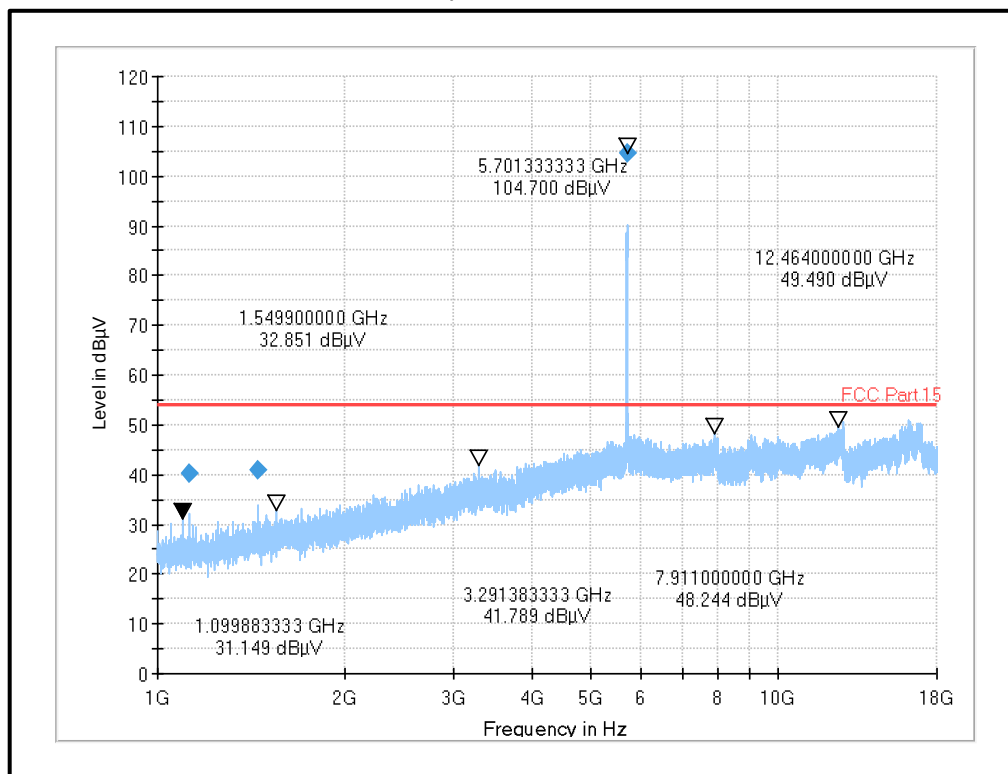
Test Setup:



Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
1125.016667	Horizontal	40.22	54.00	13.78	Complied
1450.233333	Horizontal	40.93	54.00	13.07	Complied

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



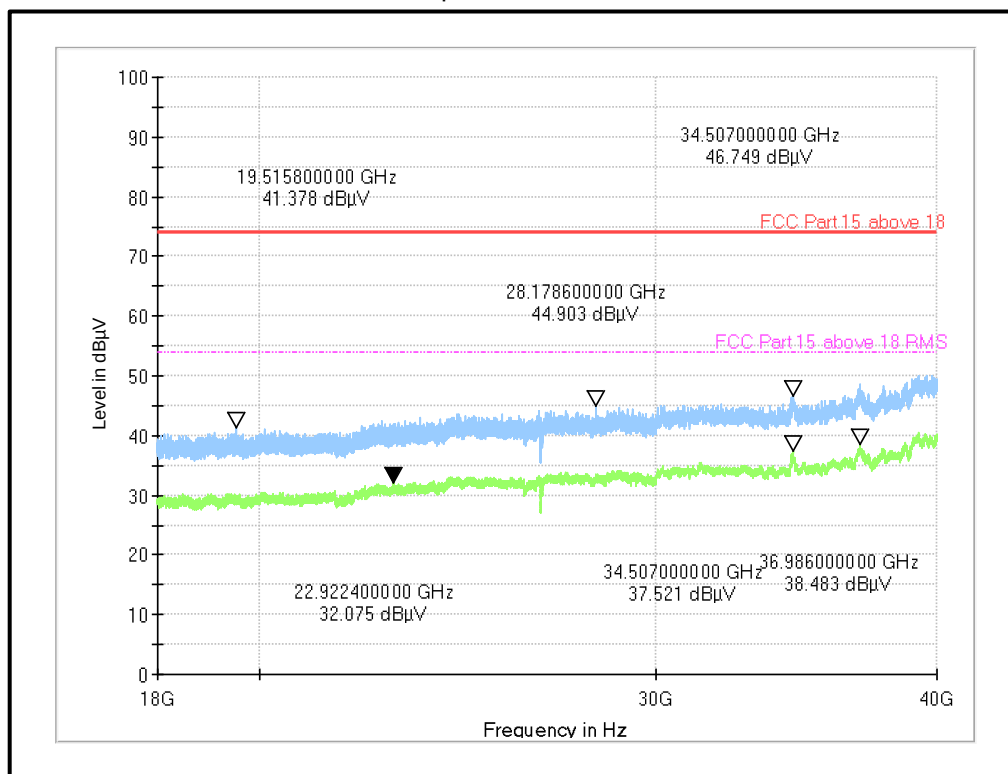
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Peak 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



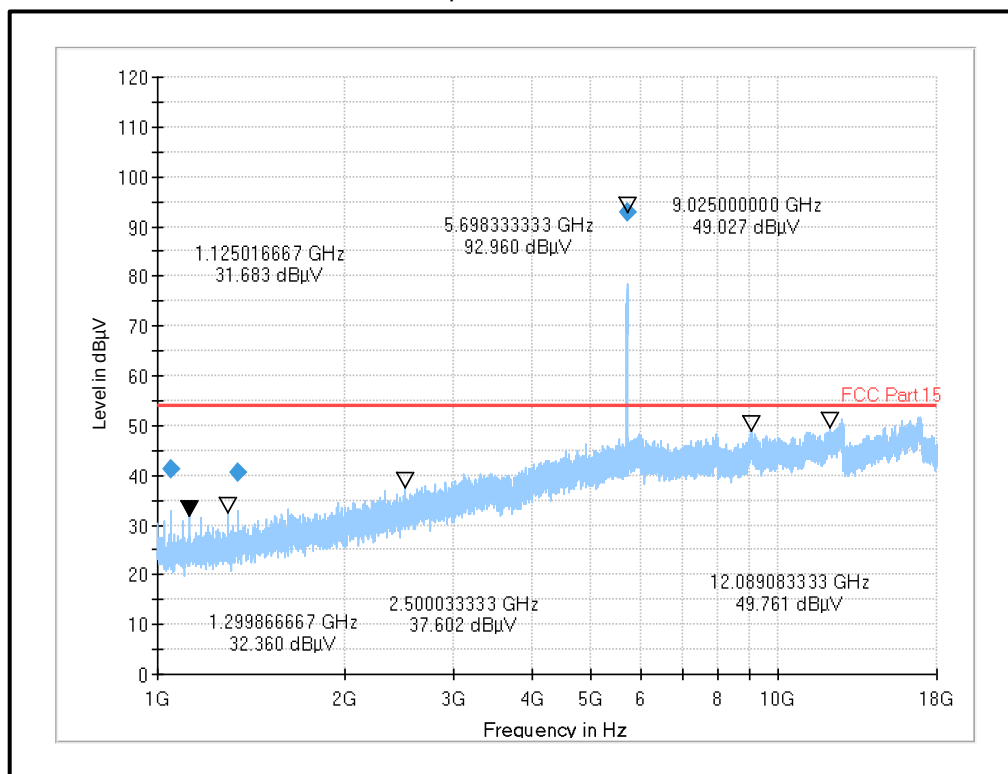
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
1049.833333	Horizontal	41.15	54.00	12.85	Complied
1349.916667	Horizontal	40.47	54.00	13.53	Complied

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



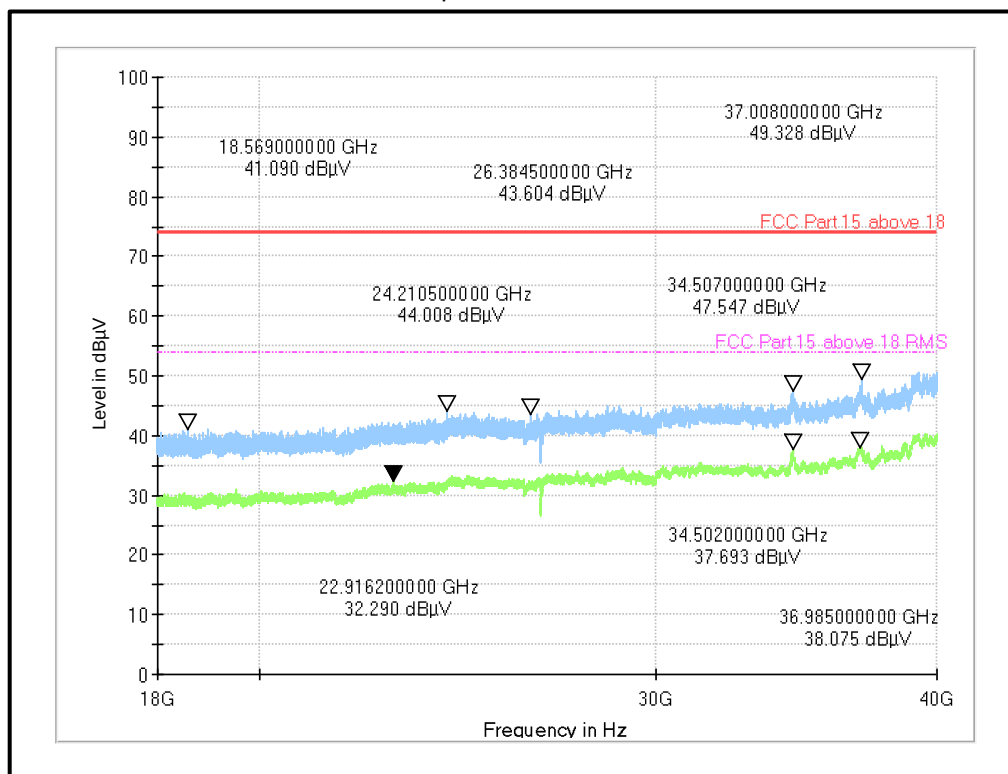
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (continued) (5.47-5.725 GHz band operation)**Results: UNII-2C / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	Peak 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



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

Result: Pass

4.2.10. Transmitter Out of Band Radiated Emissions (5.725-5.850 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)(4)(i), (10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.4.4
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.

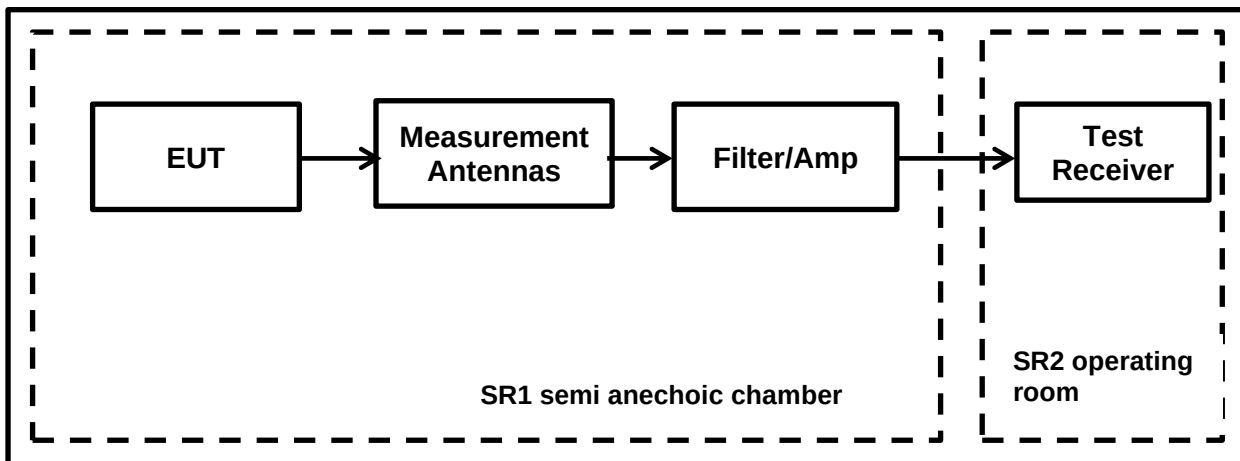
- The limits are specified at a test distances of 30 m & 300 metres. However, as specified in ANSI C63.10 clause 6.4.3, measurements may be performed at a closer distance and the measured level extrapolated to the specified measurement distance using the method described in clauses 6.4.4, specifically 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 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 Radiated Emissions (continued)**Note(s):**

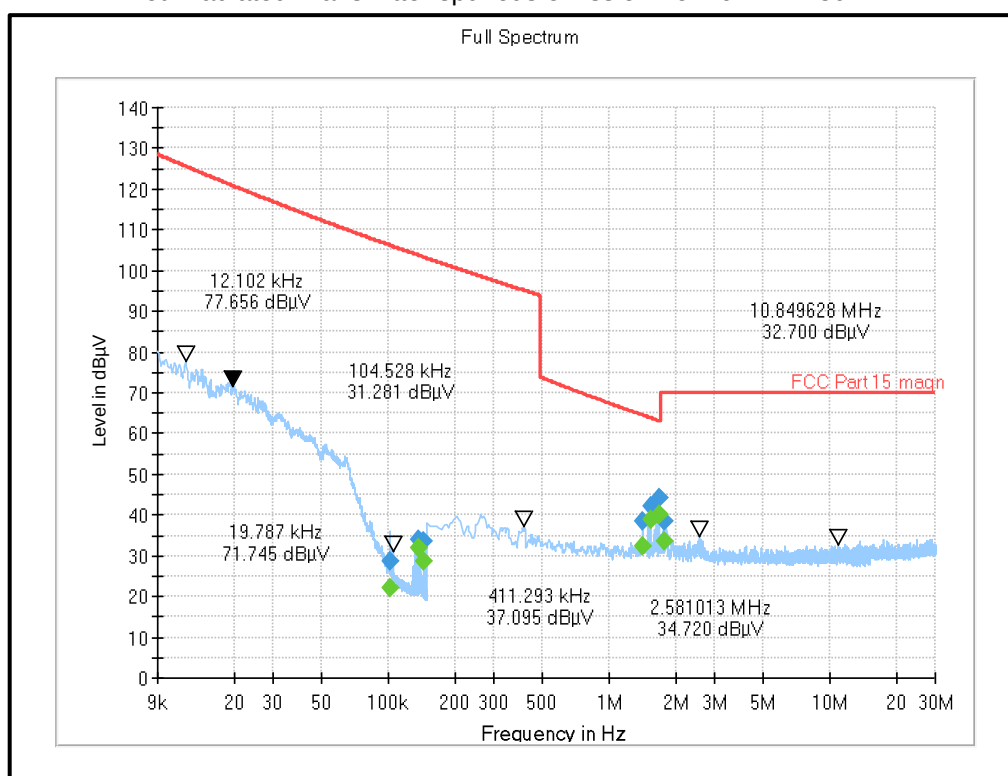
5. The measurement was performed with the following worst-case mode w.r.t output power. The measurements in UNII-3 band, but as the highest power was measured in the UNII-2C band, the radiated emissions in UNII-2C also cover the requirements for UNII-3 band measurement.
 - a. WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16
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 (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarity	Level@3m (dBμV/m)	Level extrapolated (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
0.101567	90° to the EUT	28.61	-51.39	26.18	77.56	Complied
0.136676	0° to the EUT	33.92	-46.08	23.72	69.80	Complied
0.145277	0° to the EUT	33.74	-46.26	23.22	69.48	Complied
1.416773	0° to the EUT	38.41	-1.59	24.47	26.06	Complied
1.542458	0° to the EUT	42.19	2.19	23.78	21.59	Complied
1.678065	0° to the EUT	44.08	4.08	23.10	19.02	Complied
1.777290	0° to the EUT	38.38	-1.62	30.00	31.62	Complied

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



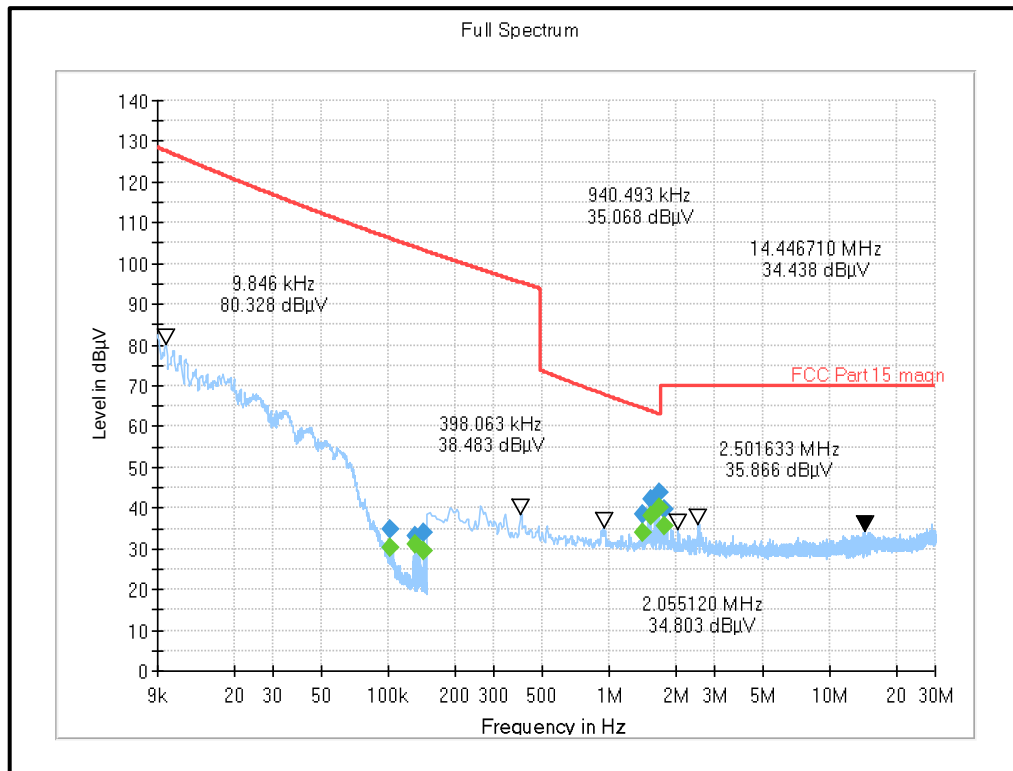
Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.

Result: **Pass**

Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / 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
0.101990	90° to the EUT	34.72	-45.28	26.14	71.42	Complied
0.132375	0° to the EUT	33.09	-46.91	23.98	70.89	Complied
0.145206	0° to the EUT	33.86	-46.14	23.23	69.37	Complied
1.420080	0° to the EUT	38.48	-1.52	24.45	25.97	Complied
1.532535	0° to the EUT	42.26	2.26	23.83	21.57	Complied
1.678065	0° to the EUT	43.67	3.67	23.10	19.43	Complied
1.780598	0° to the EUT	39.91	-0.09	30.00	30.09	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 (5.725-5.850 GHz band operation) (continued)**Test Summary:**

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

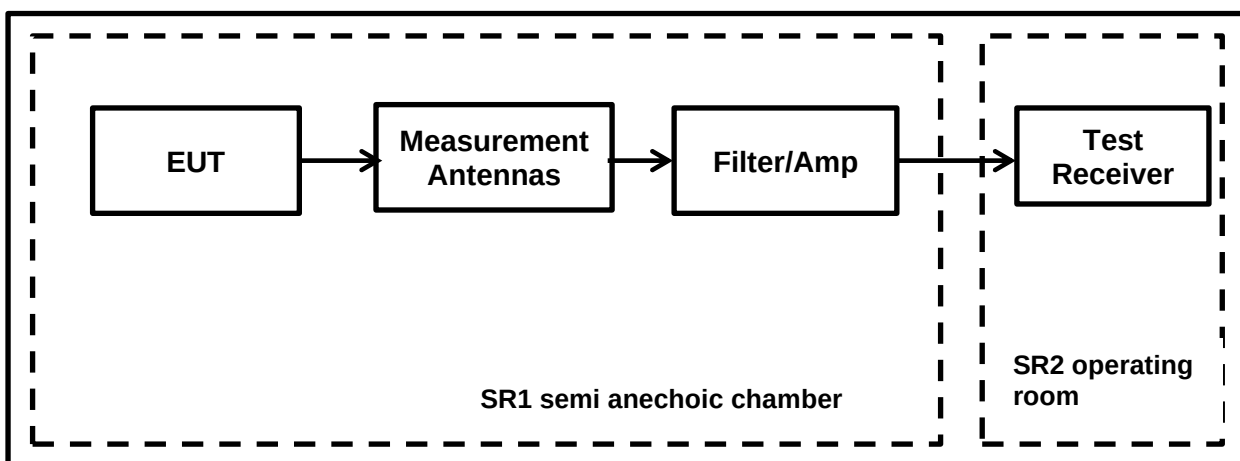
FCC Reference:	15.407(b)(4), (10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.4.4
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4 & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	21.7
Relative Humidity (%):	47.1

Note(s):

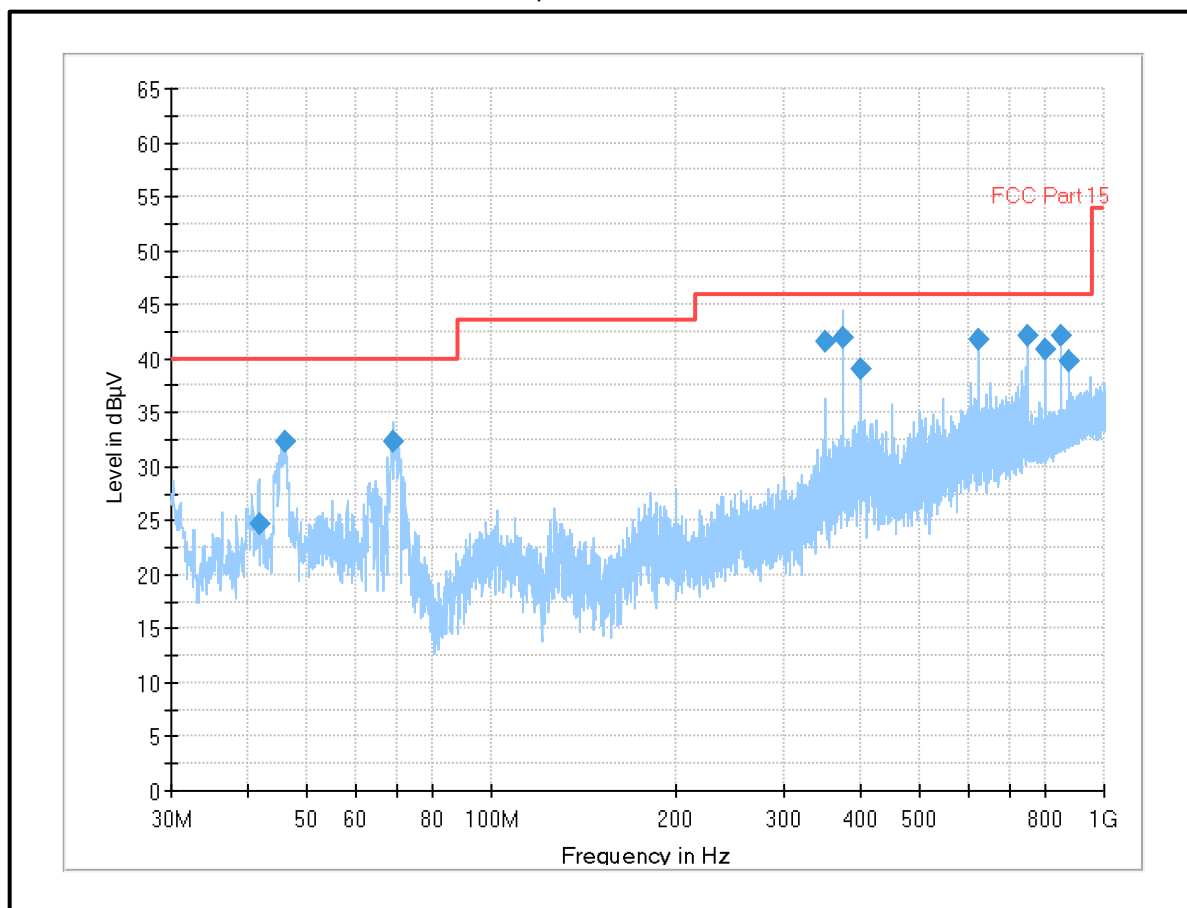
- Measurements below 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement 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 w.r.t output power. The measurements in UNII-3 band, but as the highest power was measured in the UNII-2C band, the radiated emissions in UNII-2C also cover the requirements for UNII-3 band measurement.
 - 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 (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
41.700000	Vertical	24.65	40.00	15.35	Complied
46.020000	Vertical	32.39	40.00	7.61	Complied
69.150000	Vertical	32.37	40.00	7.63	Complied
350.000000	Vertical	41.49	46.00	4.51	Complied
375.000000	Vertical	41.91	46.00	4.09	Complied
400.000000	Vertical	39.01	46.00	6.99	Complied
624.958333	Horizontal	41.73	46.00	4.27	Complied
750.000000	Horizontal	42.19	46.00	3.81	Complied
799.958333	Horizontal	40.91	46.00	5.09	Complied
849.958333	Horizontal	42.06	46.00	3.94	Complied
874.958333	Horizontal	39.82	46.00	6.18	Complied

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



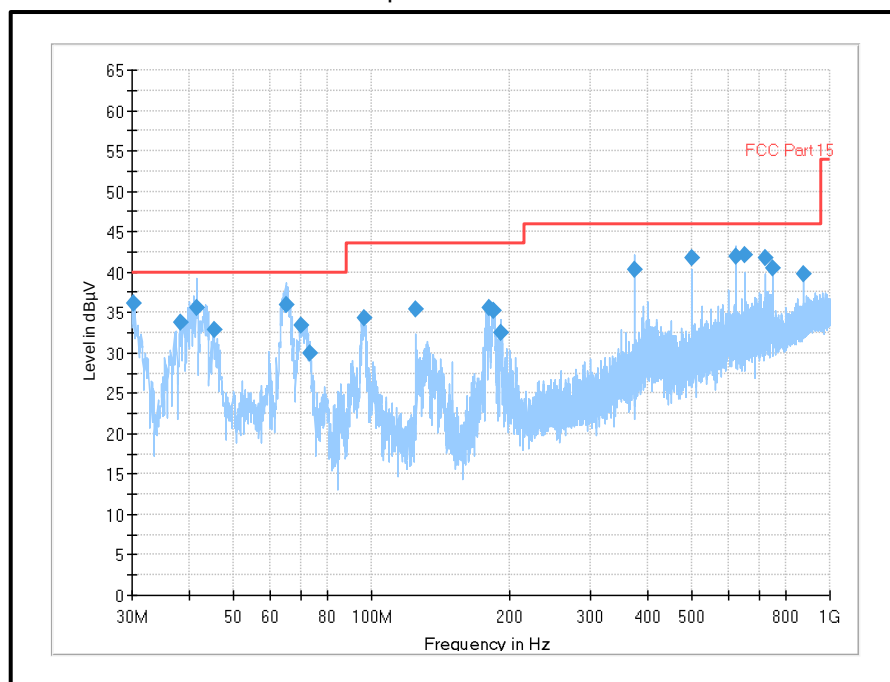
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
30.180000	Vertical	36.15	40.00	3.85	Complied
38.190000	Vertical	33.83	40.00	6.17	Complied
41.430000	Vertical	35.55	40.00	4.45	Complied
45.300000	Vertical	32.86	40.00	7.14	Complied
64.920000	Vertical	36.01	40.00	3.99	Complied
70.140000	Vertical	33.43	40.00	6.57	Complied
96.555000	Vertical	34.24	43.50	9.26	Complied
124.995000	Vertical	35.43	43.50	8.07	Complied
179.760000	Horizontal	35.52	43.50	7.98	Complied
184.935000	Horizontal	35.15	43.50	8.35	Complied
191.190000	Vertical	32.50	43.50	11.00	Complied
374.966667	Horizontal	40.36	46.00	5.64	Complied
500.000000	Horizontal	41.71	46.00	4.29	Complied
625.000000	Vertical	41.90	46.00	4.10	Complied
650.000000	Horizontal	42.13	46.00	3.87	Complied
725.000000	Horizontal	41.68	46.00	4.32	Complied
874.958333	Vertical	39.71	46.00	6.29	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 (5.725-5.850 GHz band operation) (continued)

Test Summary:

Test Engineer:	Abbas Al-Hussainy	Test Date:	7 March 2024 to 12 March 2024
Test Sample Serial Number:	6869032 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	15.407(b)(4)(i), (10) & 15.209(a)
ISED Reference:	RSS-Gen 6.13 & 8.9 / RSS-247 7.3.4.4
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

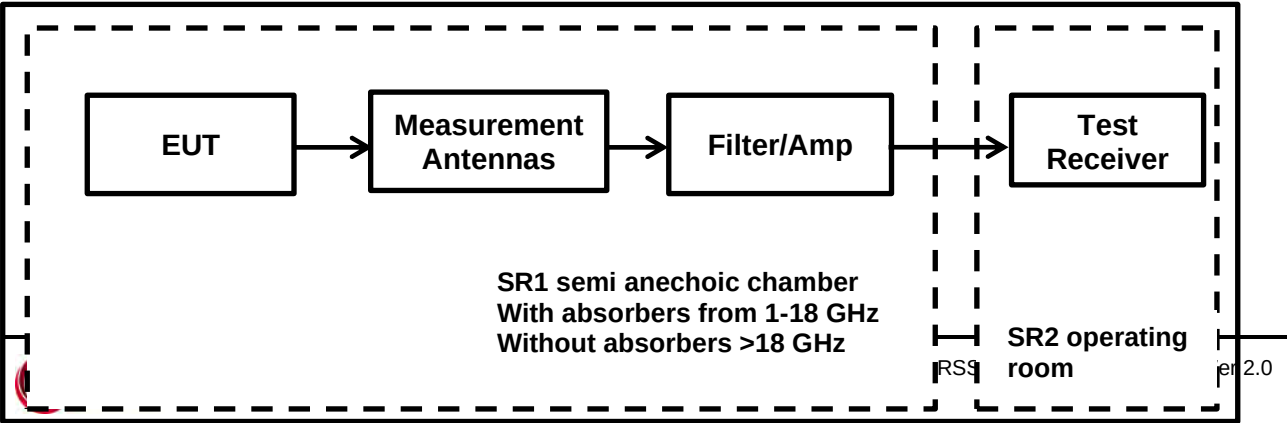
Environmental Conditions:

Temperature (°C):	20.9 to 22.3
Relative Humidity (%):	34.5 to 41.3

Note(s):

- 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.
- 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.
- The emission shown on the 1 GHz to 18 GHz plot is the EUT fundamental.
- 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.
- Measurements performed on bottom, middle & top channels, only worst-case emission plot is reported.
- The measurement was performed with the following worst-case mode w.r.t output power. The measurements in UNII-3 band, but as the highest power was measured in the UNII-2C band, the radiated emissions in UNII-2C also cover the requirements for UNII-3 band measurement.
 - WLAN 5 GHz / 802.11 n / 20 MHz / MCS5 / Top Channel / PWR 16

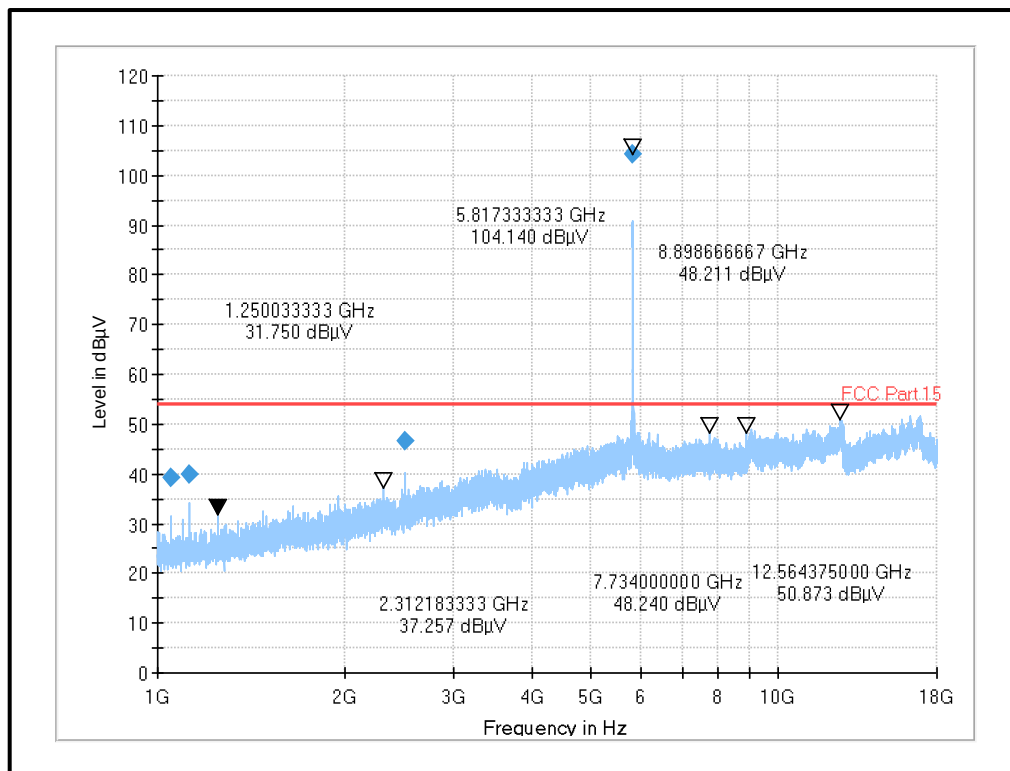
Test Setup:



Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / Internal Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
1049.833333	Horizontal	39.17	54.00	14.83	Complied
1124.800000	Horizontal	39.89	54.00	14.11	Complied
2500.033333	Horizontal	46.44	54.00	7.56	Complied

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



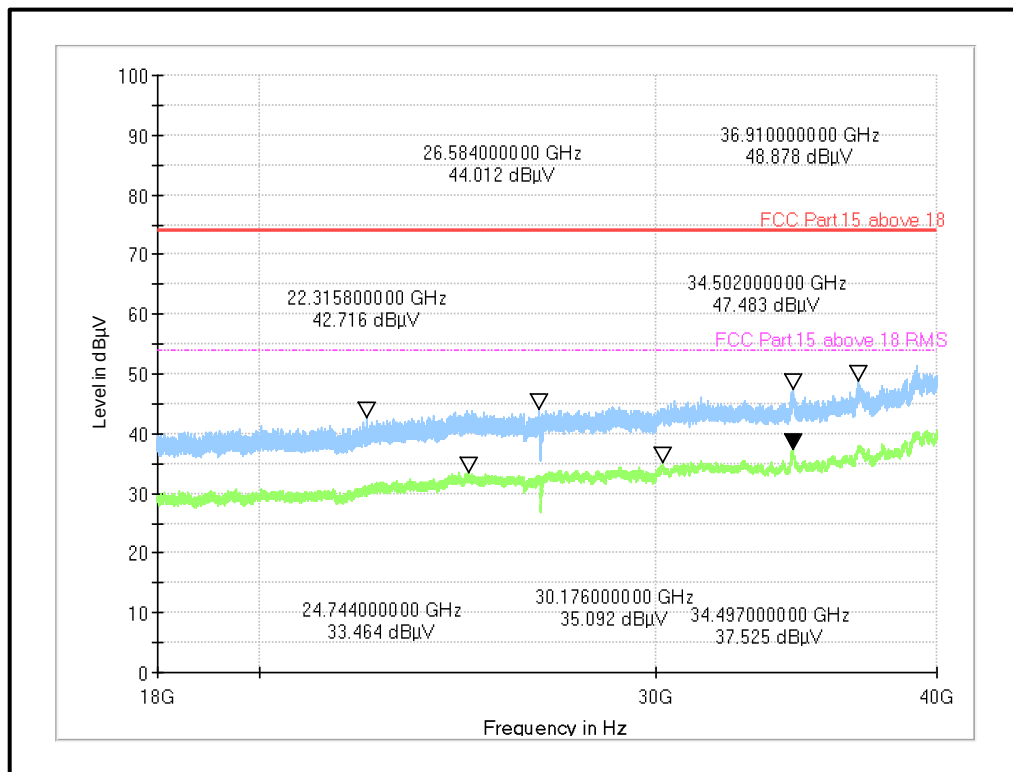
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / Internal 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



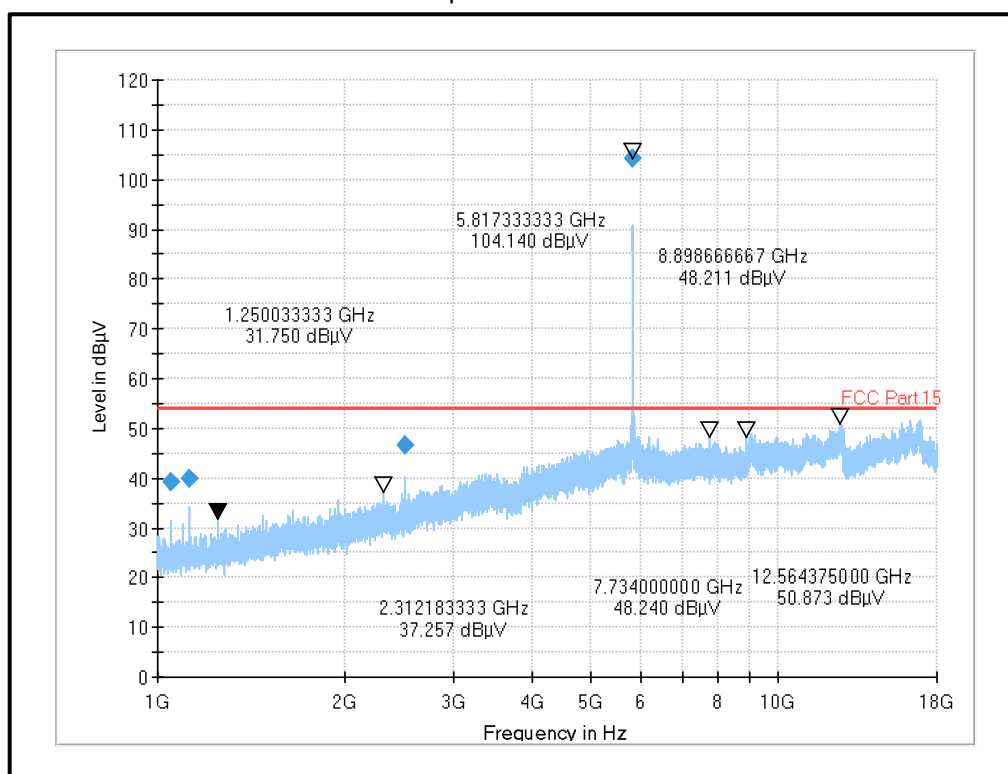
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 802.11n / External Antenna**

Frequency (MHz)	Antenna Polarization	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
1124.800000	Vertical	40.72	54.00	13.28	Complied
1499.850000	Vertical	40.52	54.00	13.48	Complied
3877.883333	Horizontal	44.61	54.00	9.39	Complied

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



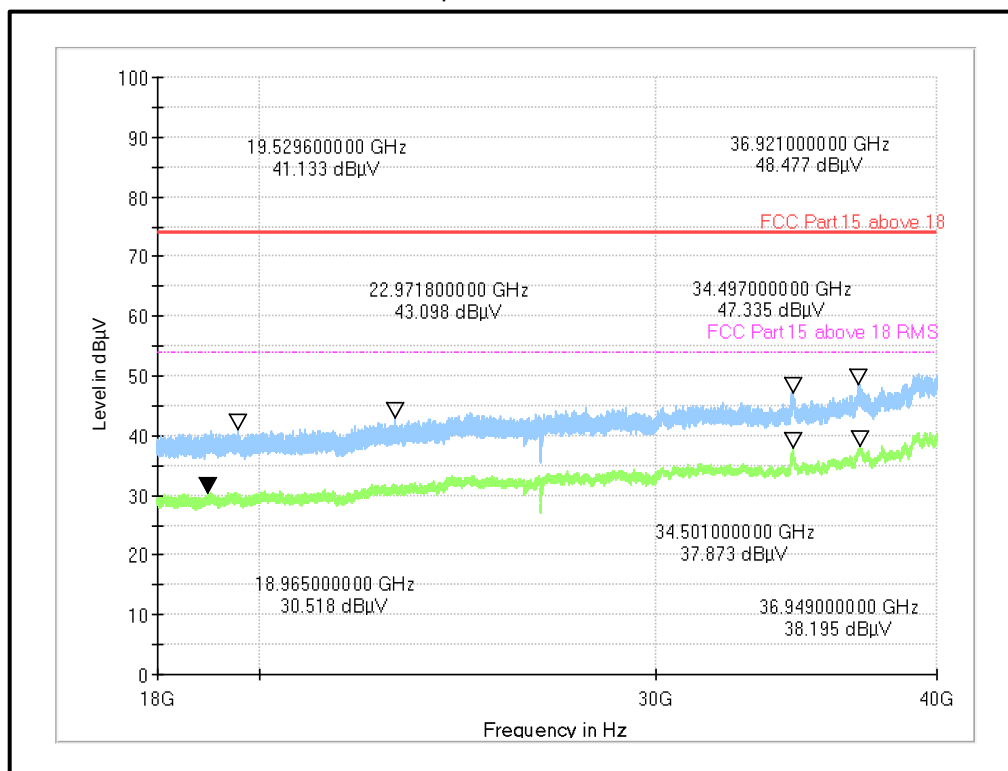
*Note: This plot is a pre-scan and for indication purposes only.
For final measurements, see accompanying table.*

Result: Pass

Transmitter Out of Band Radiated Emissions (5.725-5.850 GHz band operation) (continued)**Results: UNII-3 / 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



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

Result: **Pass**

4.2.11. Transmitter Band Edge Radiated Emissions**Test Summary:**

Test Engineer:	Abbas Al-Hussainy	Test Date:	7 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) & 15.209(a)
ISED Reference:	RSS-Gen 6.13, 8.9 & 8.10 / 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.G.1, II.G.2, II.G.3, II.G.5 & II.G.6 ANSI C63.10 Sections 6.3 and 6.6

Environmental Conditions:

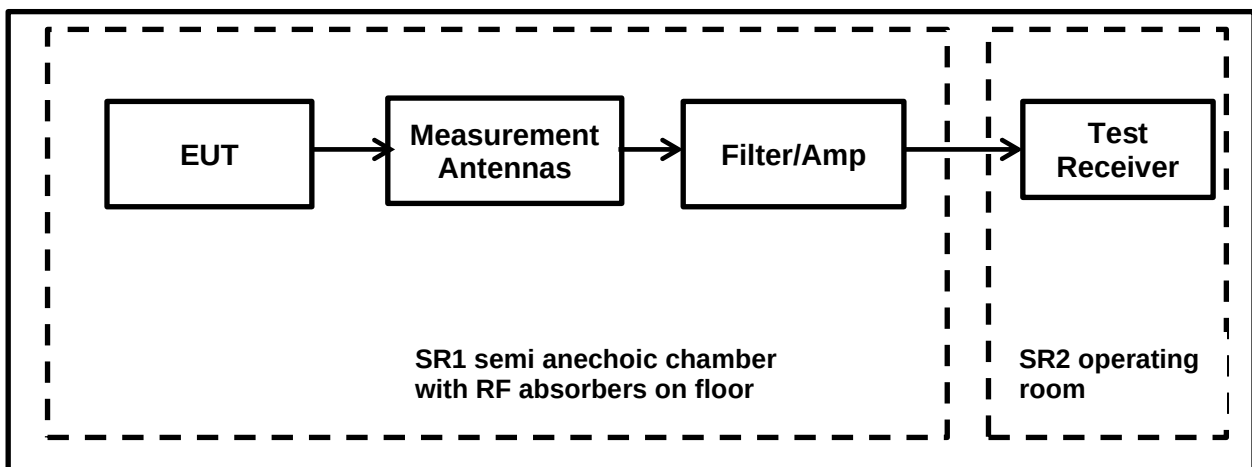
Temperature (°C):	23.0 to 24.8
Relative Humidity (%):	48.0 to 55.1

Notes:

1. The test receiver was set to RBW: 1 MHz | VBW: 3 MHz | Sweep time: Auto | Trace mode: max hold | Span: large enough to capture unwanted band edge emissions with trace stabilizations.
2. In accordance with KDB 789033 Section II.D.v), Method AD (vi), the average measurements were performed using an increased number of sweeps. A value of 300 was used for all measurements as this number ensured that the requirement $\text{Sweep} \geq 2 \times \text{Span} / \text{RBW}$ is met.
3. Tests were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with absorbers on the ground at a distance of 3 meters. The EUT was placed at a height of 1.5 meters above the test chamber floor in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna with tilting function enabled over the range 1 meter to 4 meters above the test chamber floor, in line with the EUT.
4. The maximum emissions around band edges were searched & are indicated with a marker placed on them.
5. For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of RSS-Gen 8.10 apply.
6. As all radiated band edge measurements have been performed with R.B.W. 1 MHz; the limits in dBm / MHz can be converted to dBμV/m by adding a conversion factor of 95.2 (in accordance with KDB 789033 G.2.d)(iii)).
7. Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz.
8. For transmitters operating in the 5.725-5.850GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Transmitter Band Edge Radiated Emissions (continued)**Notes:**

9. For unwanted emissions measured with Peak detector there are two limit possibilities:
 - According to RSS-Gen 8.9 peak limit (above 1 GHz) is 74 dB μ V/m (restricted band limit)
 - According to RSS-247 6.2.1.2 peak limit is 68.2 dB μ V/m (non-restricted band limit)
10. *Therefore, unwanted emissions in restricted as well non restricted bands, measured with Peak detector lowest limit 68.2 dB μ V/m has been applied.
11. In accordance with ANSI C63.10 Section 12.7.7.2 Method AD g), for average measurements, data rates where the EUT was transmitting < 98% duty cycle, the duty cycle correction factor calculated in section 5.2.3 was added to the measured result.

Test Setup:

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11a / Internal Antenna****Results: CH36 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
5149.92	62.63	68.20×	5.57	Complied
5150.00	62.15	68.20×	6.05	Complied

Results: CH36 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5149.84	46.18	54.00	7.82	Complied
5150.00	45.99	54.00	8.01	Complied

Results: CH64 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
5350.00	63.51	68.20×	4.69	Complied
5350.08	63.42	68.20×	4.78	Complied

Results: CH64 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5350.00	46.78	54.00	7.22	Complied
5350.24	47.23	54.00	6.77	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11n20 / Internal Antenna****Results: CH36 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5149.92	59.94	68.20 ^x	8.26	Complied
5150.00	59.83	68.20 ^x	8.37	Complied

Results: CH36 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5149.92	46.50	54.00	7.50	Complied
5150.00	46.48	54.00	7.52	Complied

Results: CH64 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5350.00	62.00	68.20 ^x	6.20	Complied
5350.48	61.65	68.20 ^x	6.55	Complied

Results: CH64 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350.00	46.91	54.00	7.09	Complied
5350.24	46.67	54.00	7.33	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11n / 40 MHz / Internal Antenna****Results: CH38 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5148.44	64.74	68.20 ^x	3.46	Complied
5150.00	63.68	68.20 ^x	4.52	Complied

Results: CH38 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5149.76	50.58	54.00	3.42	Complied
5150.00	50.20	54.00	3.80	Complied

Results: CH62 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5350.00	65.27	68.20 ^x	2.93	Complied
5350.20	64.97	68.20 ^x	3.23	Complied

Results: CH62 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350.00	48.82	54.00	5.18	Complied
5351.80	49.13	54.00	4.87	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11a / Internal Antenna****Results: CH100 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5468.80	59.80	68.20 ^x	8.40	Complied
5470.00	59.03	68.20 ^x	9.17	Complied

Results: CH100 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5469.84	45.95	54.00	8.05	Complied
5470.00	45.82	54.00	8.18	Complied

Results: CH140 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	66.08	68.20 ^x	2.12	Complied
5725.08	66.08	68.20 ^x	2.12	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11n / 20 MHz / Internal Antenna****Results: CH100 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5469.20	59.64	68.20 ^x	8.56	Complied
5470.00	57.22	68.20 ^x	10.98	Complied

Results: CH100 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5469.84	46.92	54.00	7.08	Complied
5470.00	46.52	54.00	7.48	Complied

Results: CH140 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	62.25	68.20 ^x	5.95	Complied
5734.03	62.31	68.20 ^x	5.89	Complied

**Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11n / 40 MHz / Internal Antenna****Results: CH102 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5468.80	63.87	68.20 ^x	4.33	Complied
5470.00	63.22	68.20 ^x	4.98	Complied

Results: CH102 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5469.76	50.49	54.00	3.51	Complied
5470.00	50.36	54.00	3.64	Complied

Results: CH134 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	60.51	68.20 ^x	7.69	Complied
5725.96	62.10	68.20 ^x	6.10	Complied

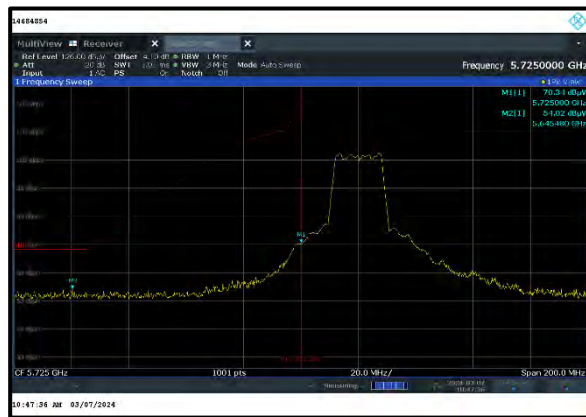
**Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3 / 802.11a / Internal Antenna****Results: CH149 / Lower Band Edge / Peak**

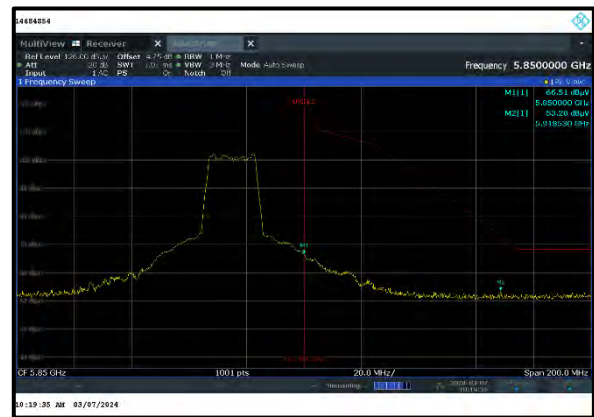
Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5645.48	54.02	68.20 ^x	14.18	Complied
5725.00	70.34	122.20 ^x	51.86	Complied

Results: CH165 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	66.51	122.20	55.69	Complied
5918.53	53.28	72.99	19.71	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

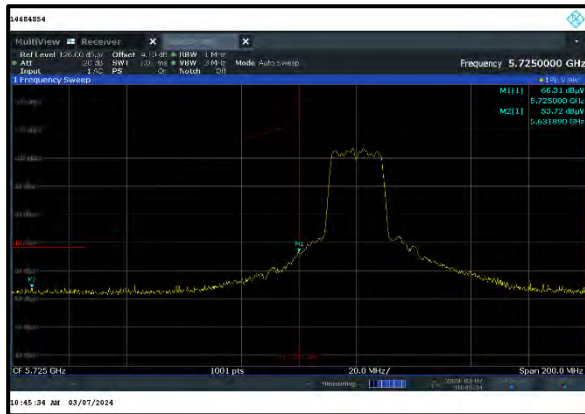
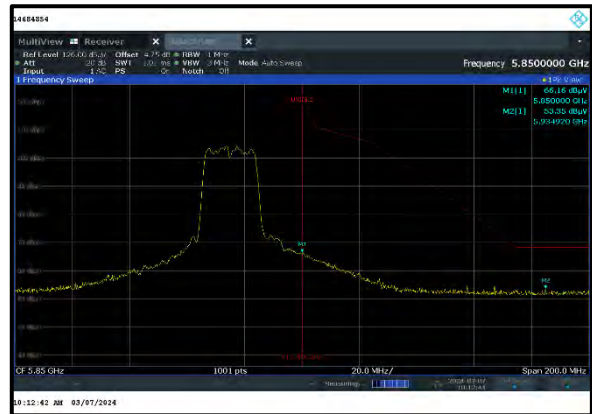
Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3/ 802.11n / 20 MHz / Internal Antenna****Results: CH149 / PWR 18 / Lower Band Edge / Peak****Results: CH149 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5631.89	53.72	68.20 ^x	14.48	Complied
5725.00	66.31	122.20 ^x	55.89	Complied

Results: CH165 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	66.16	122.20 ^x	56.04	Complied
5934.92	53.35	68.20 ^x	14.85	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3/ 802.11n / 40 MHz / Internal Antenna****Results: CH151 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5636.09	55.23	68.20 ^x	12.97	Complied
5725.00	66.05	122.20 ^x	56.15	Complied

Results: CH159 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	56.30	122.20 ^x	65.90	Complied
5948.10	53.43	68.20 ^x	14.77	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11a / External Antenna****Results: CH36 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5149.92	56.64	68.20 ^x	11.56	Complied
5150.00	56.24	68.20 ^x	11.96	Complied

Results: CH36 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5149.76	41.45	54.00	12.55	Complied
5150.00	41.10	54.00	12.90	Complied

Results: CH64 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5350.00	56.13	68.20 ^x	12.07	Complied
5350.32	56.24	68.20 ^x	11.96	Complied

Results: CH64 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350.00	41.52	54.00	12.48	Complied
5350.16	41.93	54.00	12.07	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11n20 / External Antenna****Results: CH36 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5149.92	59.94	68.20 ^x	8.26	Complied
5150.00	59.83	68.20 ^x	8.37	Complied

Results: CH36 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5149.92	46.50	54.00	7.50	Complied
5150.00	46.48	54.00	7.52	Complied

Results: CH64 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5350.00	61.65	68.20 ^x	6.55	Complied
5350.08	62.00	68.20 ^x	6.20	Complied

Results: CH64 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350.00	46.91	54.00	7.09	Complied
5350.24	46.67	54.00	7.33	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-1&2A / 802.11n / 40 MHz / External Antenna****Results: CH38 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
5148.80	56.85	68.20 ^x	11.35	Complied
5150.00	55.19	68.20 ^x	13.01	Complied

Results: CH38 / Lower Band Edge / Average

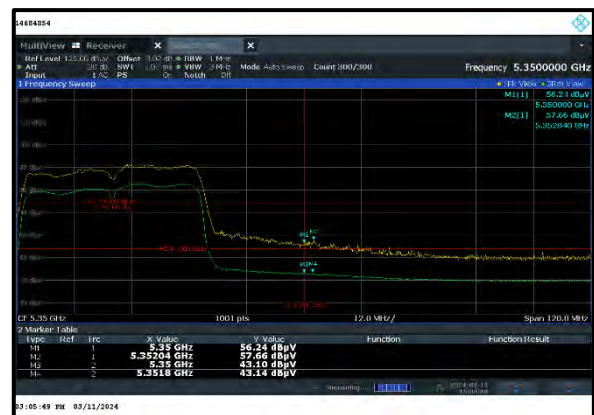
Frequency (MHz)	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5149.28	44.15	54.00	9.85	Complied
5150.00	43.97	54.00	10.03	Complied

Results: CH62 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
5350.00	56.24	68.20 ^x	11.96	Complied
5352.04	57.66	68.20 ^x	10.54	Complied

Results: CH62 / Upper Band Edge / Average

Frequency (MHz)	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5350.00	43.10	54.00	10.90	Complied
5351.80	43.14	54.00	10.86	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11a / Internal Antenna****Results: CH100 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5469.84	51.75	68.20 ^x	16.45	Complied
5470.00	50.05	68.20 ^x	18.15	Complied

Results: CH100 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5469.92	37.53	54.00	16.47	Complied
5470.00	37.02	54.00	16.98	Complied

Results: CH140 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	53.71	68.20 ^x	14.49	Complied
5727.16	54.48	68.20 ^x	13.72	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement****Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11n / 20 MHz / External Antenna****Results: CH100 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5468.32	48.99	68.20 ^x	19.21	Complied
5470.00	46.67	68.20 ^x	21.53	Complied

Results: CH100 / Lower Band Edge / Average

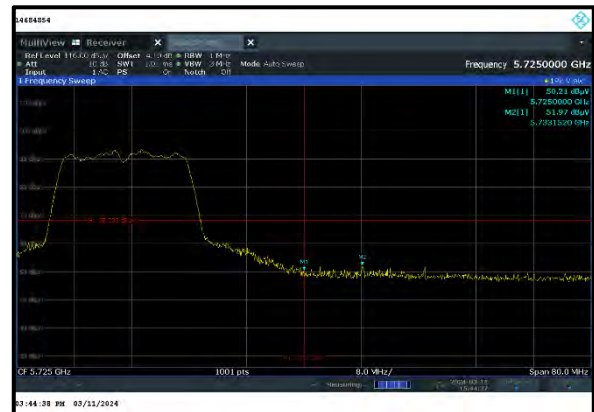
Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5469.92	37.47	54.00	16.53	Complied
5470.00	37.16	54.00	16.84	Complied

Results: CH140 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	50.21	68.20 ^x	17.99	Complied
5733.15	51.97	68.20 ^x	16.23	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-2C/ 802.11n / 40 MHz / External Antenna****Results: CH102 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5469.40	49.85	68.20 ^x	18.35	Complied
5470.00	48.51	68.20 ^x	19.69	Complied

Results: CH102 / Lower Band Edge / Average

Frequency (MHz)	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5468.56	37.99	54.00	16.01	Complied
5470.00	37.69	54.00	16.31	Complied

Results: CH134 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5725.00	49.80	68.20 ^x	18.40	Complied
5733.15	49.88	68.20 ^x	18.32	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

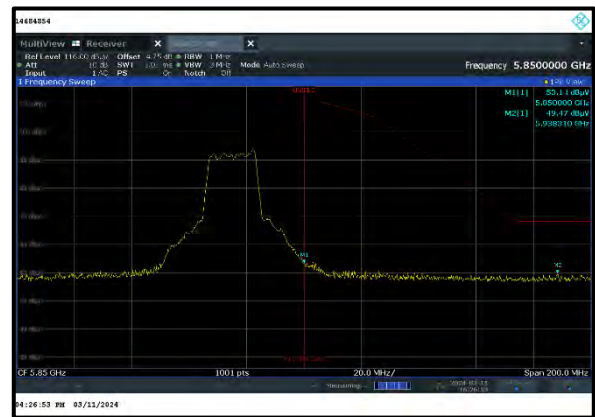
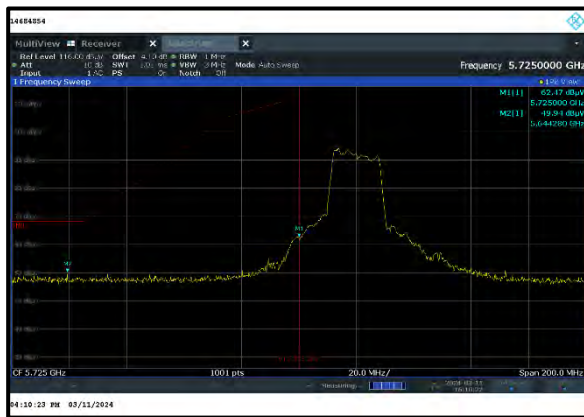
Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3 / 802.11a / External Antenna****Results: CH149 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5644.28	49.94	68.20 ^x	18.26	Complied
5725.00	62.47	122.20 ^x	59.73	Complied

Results: CH165 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	53.14	122.2 ^x	69.06	Complied
5938.31	49.47	68.20 ^x	18.73	Complied

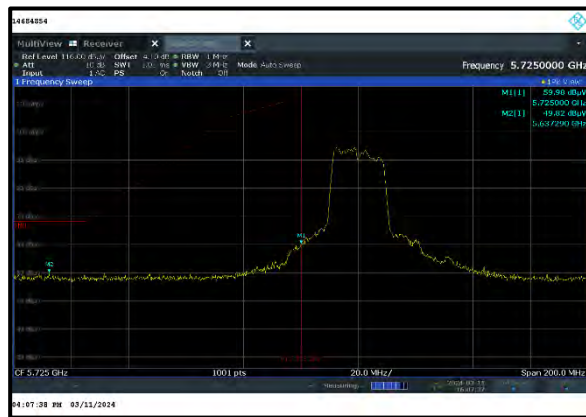
**Result: Pass**

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3/ 802.11n / 20 MHz / External Antenna****Results: CH149 / Lower Band Edge / Peak**

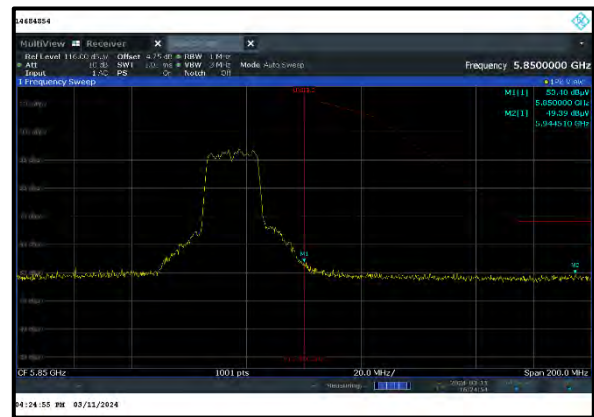
Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5637.29	49.82	68.20 ^x	18.38	Complied
5725.00	59.98	122.20 ^x	62.22	Complied

Results: CH165 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	53.40	122.20 ^x	68.8	Complied
5944.51	49.39	68.20 ^x	18.81	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

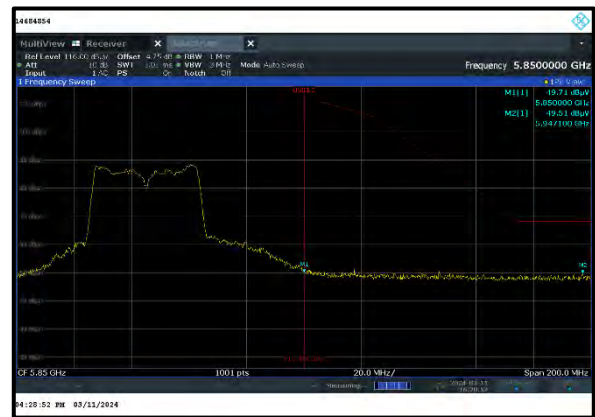
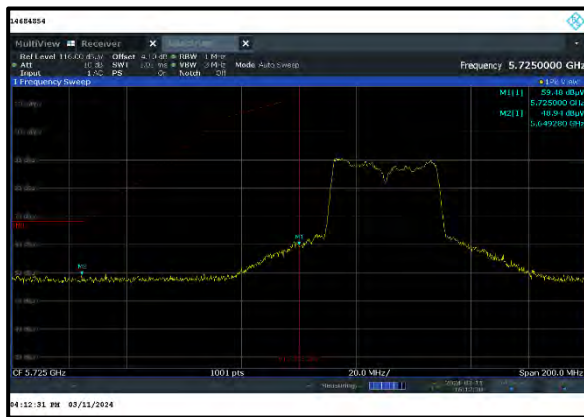
Result: Pass

Transmitter Band Edge Radiated Emissions (continued)**Results: UNII-3/ 802.11n / 40 MHz / Internal Antenna****Results: CH151 / Lower Band Edge / Peak**

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5649.28	48.94	68.20 ^x	19.26	Complied
5725.00	59.48	122.20 ^x	62.72	Complied

Results: CH159 / Upper Band Edge / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5850.00	49.71	122.20 ^x	72.49	Complied
5947.10	49.51	68.20 ^x	18.69	Complied

**Result: Pass**

5. Measurement Uncertainty

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	95%	±2.49 dB
Conducted Maximum Peak Output Power	95%	±0.59 dB
Radiated Spurious Emissions	95%	±3.10 dB
Band Edge Radiated Emissions	95%	±3.10 dB
Minimum 6 dB Bandwidth	95%	±0.87 %
26 dB Bandwidth	95%	±0.87 %
99% Emission Bandwidth	95%	±0.87 %
Spectral Power Density	95%	±0.59 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

6. Used equipment

Test site: SR 1/2

ID	Manufacturer	Type	Model	Serial	Calibration Date	Cal. Cycle (months)
1	Rohde & Schwarz	Antenna, Loop	HFH2-Z2	831247/012	18.07.2023	36
377	BONN Elektronik	Amplifier, Low Noise Pre	BLMA 0118-1A	025294B	18.07.2023	12
460	Deisel	Turntable	DT 4250 S	n/a	n/a	n/a
465	Schwarzbeck	Antenna, Trilog Broadband	VULB 9168	9168-240	30.11.2023	36
496	Rohde & Schwarz	Antenna, log. - periodical	HL050	100297	22.08.2022	24
588	Maturo	Controller	NCD	029/7180311	n/a	n/a
591	Rohde & Schwarz	Receiver	ESU 40	100244/040	13.07.2023	12
607	Schwarzbeck	Antenna broadband horn antenna	BBHA 9170	9170-561	10.05.2022	36
669	Rohde & Schwarz	EMI Test Receiver	ESW 44	103087	13.07.2023	18
694	Rohde & Schwarz	Signal Analyzer	FSW 50	101847	09.05.2023	12
608	Rohde & Schwarz	Switch Matrix	OSP 120	101227	lab verification	n/a
628	Maturo	Antenna mast	CAM 4.0-P	224/19590716	n/a	n/a
629	Maturo	Kippeinrichtung	KE 2.5-R-M	MAT002	n/a	n/a
-/-	Testo	Thermo-Hygrometer	608-H1	01	lab verification	n/a
328	SPS	AC/DC power distribution system	PAS 5000	A2464 00/2 0200	lab verification	n/a
1603665	Siemens Matsushita Components	semi-anechoic chamber SR1/ 2	-/-	B83117-A1421-T161	n/a	n/a
681	Maturo	Antenna mast, tilting	BAM4.5-P	402/0718.1	n/a	n/a

Note: Calibration dates are logged based on the equipment data on time of use for measurements, not based on the report issue dates.

Test site: SR 7/8

ID	Manufacturer	Type	Model	Serial No.	Calibration Date	Cal. Cycle
22	Rohde & Schwarz	Artificial Mains	ESH3-Z5	831767/014	18.07.2023	12
23	Rohde & Schwarz	Artificial Mains	ESH3-Z5	831767/013	18.07.2023	12
215	Rohde & Schwarz	Artificial Mains Network	ESH2-Z5	879675/002	18.07.2023	24
349	Rohde & Schwarz	Receiver, EMI Test	ESIB7	836697/009	18.07.2023	12
351	Rohde & Schwarz	network, Artificial Mains	ESH3-Z5	862770/018	18.07.2023	12

Note: Calibration dates are logged based on the equipment data on time of use for measurements, not based on the report issue dates.

Test site: SR 9

ID	Manufacturer	Type	Model	Serial	Calibration Date	Cal. Cycle (months)
625	Schwarzbeck	Antenna, H-field	HFSL 7101	109	lab verification only relative measurements	n/a
637	Rohde & Schwarz	Spectrum Analyser	FSV40	101587	12.07.2023	12
327	SPS	AC/DC power distribution system	PAS 5000	A2464 00/1 0200	lab verification	n/a
-/-	Testo	Thermo-Hygrometer	608-H1	07	lab verification	n/a
645	Weiss Umwelttechnik	Climatic Chamber	LabEvent T/110/70/3	582261979 40010	lab verification	n/a
-/-	SUCOTST	SMA Cable Male x Male	ST18 SMAM/SMAM/72	1584532-2	lab verification	n/a

Note: Calibration dates are logged based on the equipment data on time of use for measurements, not based on the report issue dates.

7. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	--	--	Initial Version 15.August 2025
1.1	23 50	4.2.2 4.2.5	Version of 28.August 2025

--- END OF REPORT ---