

TEST REPORT

EUT Description	WLAN and BT, 2x2 Wi-Fi and BT, M.2 1216 adapter card
Brand Name	Intel®
Model Name	BE201D2W
FCC/IC ID	PD9BE201D2 / 1000M-BE201D2
Date of Test Start/End	2025-02-25 / 2025-03-15
Features	2x2 WiFi - Bluetooth® (see section 5)
Applicant	Intel Corporation SAS
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Reference Standards	FCC CFR Title 47 Part 15 C FCC CFR Title 47 Part 15 E RSS247 issue4, RSS-Gen issue 5 - A1 (see section 1)
Test Report identification	231120-06.TR23
Revision Control	Rev 00 This test report revision replaces any previous test report revision (see section 8)

The test results relate only to the samples tested.
Reference to accreditation shall be used only by full reproduction of test report.

Reviewed by



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1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 eCFR part 15 – Subpart E - Unlicensed National Information Infrastructure Devices. 2024-10-01 edition 2. FCC Title 47 eCFR part 15 – Subpart C – §15.209 Radiated emission limits; general requirements. 2024-10-01 edition 3. FCC OET KDB 987594 D01 U-NII 6GHz General Requirements v03 4. FCC OET KDB 987594 D02 U-NII 6 GHz EMC Measurement v03 5. FCC OET KDB 987594 D03 U-NII 6 GHz QA v03 6. FCC OET KDB 789033 D02 v02r01 General U-NII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E). 7. ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
ISED	1. RSS-247 Issue 4 - 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 2. RSS-Gen Issue 5 Amendment 1 - General Requirements for Compliance of Radio Apparatus. 3. FCC OET KDB 987594 D01 U-NII 6GHz General Requirements v03 4. FCC OET KDB 987594 D02 U-NII 6 GHz EMC Measurement v v03 5. FCC OET KDB 987594 D03 U-NII 6 GHz QA v03 6. ANSI C63.10-2020+cor2023+Amd2024 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

Choose a building block.

2. General conditions, competences and guarantees

- ✓ Tests performed under FCC standards identified in section 1 are covered by A2LA accreditation.
- ✓ Tests performed under ISED standards identified in section 1 are covered by Cofrac accreditation.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 testing laboratory accredited by the French Committee for Accreditation (Cofrac) with the certificate number 1-6736.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by ISED, with ISED #1000Y and CAB identifier FR0005.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	Min: 20.89°C Max: 24.03°C Avg: 22.46°C
Humidity	Min: 47.47% Max: 60.19% Avg: 53.83%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	231120-05.S13	WiFi 7 Module	BE201D2W	WFM:F8FE5ECDCA67	2024-02-06	Used for Radiated Spurious Emissions tests
	231109-03.S50	CRF xVT DB 2230 BNJ V3 C0 ASS00887-00	PCB00862_00_A	-	-	
	230824-01.S02	Laptop	HP (TPN-Q292)	A5CD32257RT	2024-12-12	
	230223-02.S48	Triband Antenna	-	006	2023-04-20	
	230526-09.S08	Triband Antenna	-	016	2023-07-06	

5. EUT Features

The herein information is provided by the customer.

Intel WRF Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report.

Brand Name	Intel®		
Model Name	BE201D2W		
Software Version	DRTU.08798.99.0.99		
Driver Version	99.0.99.2		
Prototype / Production	Production		
Supported Radios	802.11b/g/n/ax/be 802.11a/n/ac/ax/be 802.11ax/be Bluetooth 5.2 2.4GHz (2400.0 – 2483.5 MHz) 5.2GHz (5150.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) 5.9GHz (5850.0 – 5895.0 MHz) 6.0GHz (5925.0 – 7125.0MHz) 2.4GHz (2400.0 – 2483.5 MHz)		
Antenna Information PIFA	Transmitter	Chain A(1)	Chain B(2)
	Manufacturer	Intel WRF Lab	Intel WRF Lab
	Antenna type	PIFA	PIFA
	Part number	WRF-Tri Band-Antenna	WRF-Tri Band-Antenna
	Antenna peak gain (dBi) – 5 GHz	+5.15	+5.15
	Antenna peak gain (dBi) – 6-7 GHz	+5.02	+5.02
Antenna Information Dipole	Transmitter	Main(2) / Chain A	Aux(1) / Chain B
	Manufacturer	Wieson	Wieson
	Antenna type	Dipole	Dipole
	Part number	ARY121-0009-002-H0	ARY121-0009-002-H0
	Declared Antenna gain (dBi) – 5.2 & 5.3GHz	+4.11	+4.11
	Declared Antenna gain (dBi) – 5.6GHz	+5.15	+5.15
	Declared Antenna gain (dBi) – 5.8 GHz	+5.13	+5.13
	Declared Antenna gain (dBi) – 6.2 GHz	+5.02	+5.02
	Declared Antenna gain (dBi) – 6.5 GHz	+4.71	+4.71
	Declared Antenna gain (dBi) – 6.7 GHz	+4.49	+4.49
	Declared Antenna gain (dBi) – 6.9 GHz	+4.96	+4.96
Antenna Information Monopole	Transmitter	Main(2)/Chain A	Aux(1)/Chain B
	Manufacturer	HongBo	HongBo
	Antenna type	Monopole	Monopole
	Part number	260-25095	260-25095
	Declared Antenna gain (dBi) – 5.2GHz	+4.57	+4.57
	Declared Antenna gain (dBi) – 5.3GHz	+4.44	+4.44
	Declared Antenna gain (dBi) – 5.6 & 5.8 GHz	+4.95	+4.95
	Declared Antenna gain (dBi) – 6.2 GHz	+4.87	+4.87
	Declared Antenna gain (dBi) – 6.5 GHz	+4.91	+4.91
	Declared Antenna gain (dBi) – 6.7 GHz	+4.91	+4.91
	Declared Antenna gain (dBi) – 7 GHz	+4.79	+4.79

6. Remarks and comments

1. The channel puncturing test is performed on the PIFA antenna which shows the worst case RSE test results among the three antennas (PIFA, Dipole and Monopole)
2. This report only presents Radiated spurious emissions measurements, for the remaining test cases refer to report 231120-06-TR22
3. The test is conducted in all cases listed in Section B.1. Only the worst case per sub-band and per Antenna Chain was reported.

7. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

7.1. 802.11 ax/be – UNII-1-2A-2C-3

FCC part	RSS part	Test name	Verdict
15.407 (b) (1) 15.209	RSS-247 Clause 7.3.2.3 RSS-GEN A1, Clause 8.9	Spurious Emission (radiated)	P
15.407 (b) (2) 15.209	RSS-247 Clause 7.3.2.3 RSS-GEN A1, Clause 8.9	Spurious Emission (radiated)	P
15.407 (b) (3) 15.209	RSS-247 Clause 7.3.3.3 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P
15.407 (b) (4) 15.209	RSS-247 Clause 7.3.3.4 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

8. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	K. RIDA	First Issue

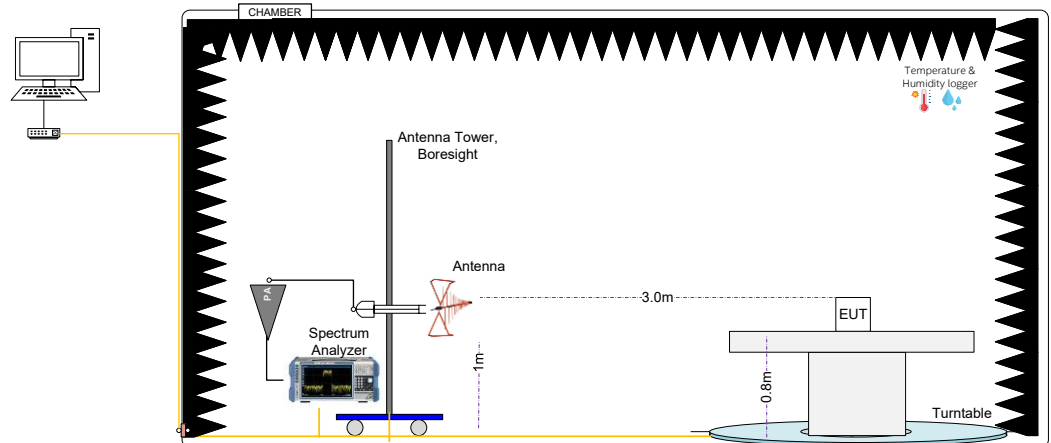
Annex A. Test & System Description

A.1 Measurement System

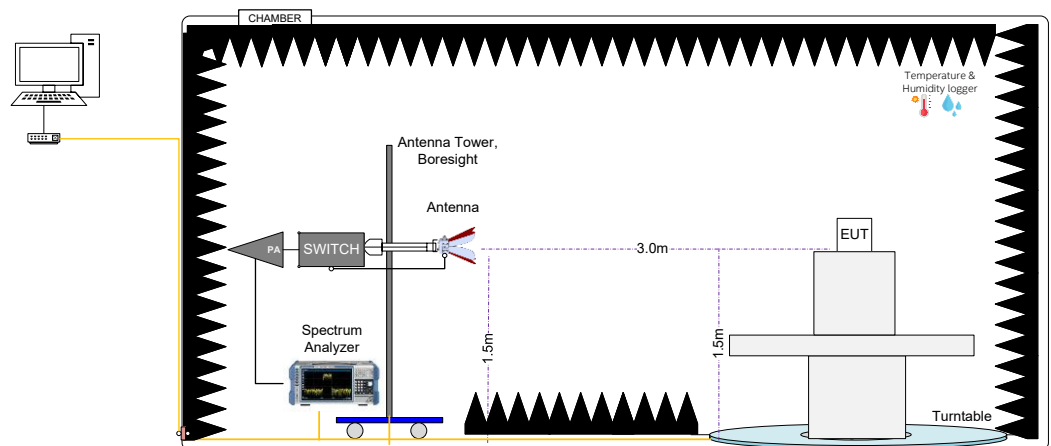
The DUT is installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary tool DRTU.

Radiated test setup

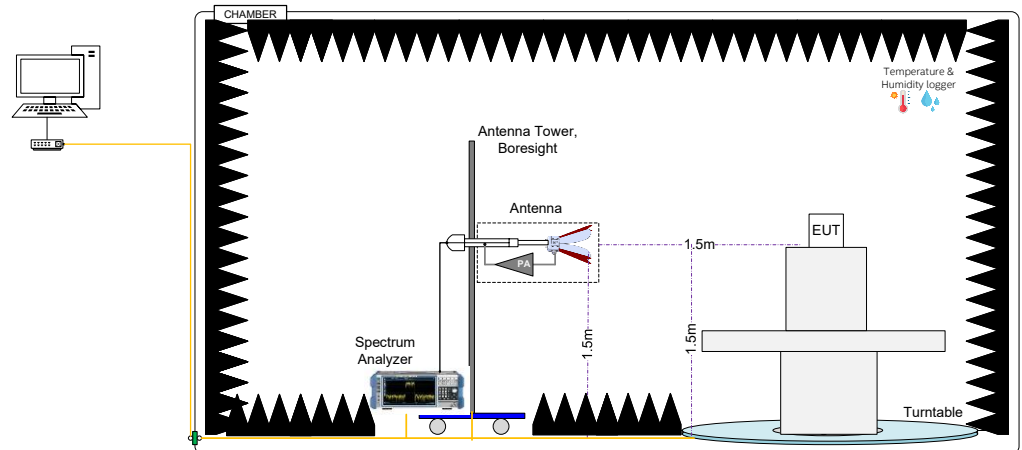
Radiated Setup 30 MHz – 1 GHz (Transmitter tests)



Radiated Setup 1 GHz – 11 GHz (Transmitter tests)



Radiated Setup 11 GHz – 40 GHz (Transmitter tests)



Sample Calculation

The spurious received voltage $V(\text{dB}\mu\text{V})$ in the spectrum Analyzer is converted to Electric field strength using the transducer factor F corresponding to the Rx path Loss:

$$F(\text{dB/m}) = \text{Rx Antenna Factor}(\text{dB/m}) + \text{Cable losses}(\text{dB}) - \text{Amplifiers Gain}(\text{dBi})$$

$$E(\text{dB}\mu\text{V/m}) = V(\text{dB}\mu\text{V}) + F(\text{dB/m})$$

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

$$E_{\text{SpecLimit}} = E_{\text{Meas}} + 20 \cdot \log(D_{\text{Meas}}/D_{\text{SpecLimit}})$$

where

$E_{\text{SpecLimit}}$ is the field strength of the emission at the distance specified by the limit, in $\text{dB}\mu\text{V/m}$

E_{Meas} is the field strength of the emission at the measurement distance, in $\text{dB}\mu\text{V/m}$

D_{Meas} is the measurement distance, in m

$D_{\text{SpecLimit}}$ is the distance specified by the limit, in m

A.2 Test Equipment List

Radiated Setup #1

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
006-000	Anechoic Chamber	FACT3	5720	ETS-Lindgren	2024-01-17	2026-01-17
006-001	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
094-002	Thermo-hygrometer sensor	RMS-HCD-S	24050486	Rotronic	2024-09-02	2026-09-02
006-011	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
006-002	Switch & Positioning systems	EMC Center	00159757	ETS-Lindgren	N/A	N/A
147-000	Spectrum analyzer	FSW43	101847	Rohde & Schwarz	2025-03-07	2027-03-07
006-008	Measurement SW, v11.30.00	EMC32	100623	Rohde & Schwarz	N/A	N/A
301-000	Amplifier 9kHz-1300MHz	8447F	3113A07440	HP	2025-02-11	2026-02-11
006-067	Low Pass Filter 1.6GHz	LPM17671	G002	Micro-Tronics	2025-02-11	2026-02-11
007-034	Broadband RF Power Amplifier 0.5-40.0GHz	DEPA0540-43	2024A02	Diamond Engineering	2025-02-11	2026-02-11
189-000	Double Horn Ridged antenna 10GHz-40GHz	3116C	227716	ETS-Lindgren	2024-05-29	2026-05-29
057-000	Double ridged horn antenna (1GHz to 18GHz)	ETS-Lindgren-3117	167062	ETS-Lindgren	2024-07-23	2026-07-23
006-061	Bi-Log Periodic antenna	CBL6143A	61382	Teseq	2024-11-13	2026-11-13
006-068	RF Switch DC-40GHz	LPM17671	G002	Mini-Circuits	2025-02-11	2026-02-11
261-000	RF Amplifier Used for 1 GHz-11GHz	ETS-Lindgren-3117-PA	00157993	ETS-Lindgren	2025-02-11	2026-02-11
009-007	Filter HPF 11GHz	Mini-Circuits-ZHSS-k11G+	84931831830	Mini-Circuits	2025-02-11	2026-02-11
006-051	RF Cable 1.0m	CBL-1.5M-SMSM+	202879	Mini-Circuits	2025-03-12	2026-03-12
006-066	Cable 7m – 25MHz to 40GHz	R286304174	20.46.370	Radiall	2025-02-10	2026-02-10
006-063	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2025-02-10	2026-02-10
006-064	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2025-02-10	2026-02-10
006-065	Cable 60cm – 25MHz to 1GHz	PE300-24	-	Pasternack	2025-02-10	2026-02-10

N/A: Not Applicable

Radiated Setup #2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
007-000	Anechoic chamber	RFD-FA-100	5996	ETS Lindgren	2024-01-18	2026-01-18
138-000	Spectrum Analyzer	FSV40	101556	Rohde & Schwarz	2024-02-27	2026-02-27
007-007	Double Ridge Horn Antenna (1- 18GHz)	3117	00152266	ETS Lindgren	2024-03-26	2026-03-26
026-008	Low noise amplifier 1-18GHz	LA1018N3209	J10100000407	A-INFO	2025-02-19	2026-02-19
007-004	Switch & Positioner	EMCenter	00162359	ETS Lindgren	N/A	N/A
007-006	EMControl & EMSwitch	EMCenter	00151232	ETS Lindgren	N/A	N/A
007-036	SMA-SMA 6.5m Cable	140-8500-11-51-001	001	Atem	2025-03-12	2026-03-12
007-005	Measurement SW, v11.30.00	EMC32	100401	Rohde & Schwarz	N/A	N/A
007-001	Styrofoam Column, 151mm	-	-	-	N/A	N/A
007-002	Turntable	-	-	ETS Lindgren	N/A	N/A
007-003	Antenna Tower	2171B-3.0M	00150123	ETS Lindgren	N/A	N/A
007-015	N-SMA 1.5m Cable	-	-	Spirent	2025-02-19	2026-02-19
007-018	SMA-SMA 1.2m Cable	0500990991200KE	-	Radiall	2025-02-19	2026-02-19
094-001	Temp & Humidity Logger	RMS-HCD-S	24050487	Rotronic	2024-09-02	2026-09-02

N/A: Not Applicable

Shared Radiated Equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
412-000	DRTU Power finder V2.1	-	-	Intel	N/A	N/A
139-000	Power Sensor	NRP-Z81	104383	Rohde & Schwarz	2025-05-20	2027-05-20
140-000	Power Sensor	NRP-Z81	104382	Rohde & Schwarz	2024-04-04	2026-04-04

N/A: Not Applicable

A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the below table with a coverage factor of k = 2 to indicate a 95% level of confidence:

Measurement type	Uncertainty	Unit
Radiated tests <1GHz	±6.33	dB
Radiated tests 1GHz – 40 GHz	±6.72	dB

Annex B. Test Results

The herein test results were performed by:

Test case measurement	Test Personnel
Radiated spurious emissions	K. RIDA

B.1 Test Conditions

For 802.11ax/be80 (80MHz channel bandwidth), 802.11ax/be160 (160MHz channel bandwidth) and 802.11be320 (320MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

Selected Test Mode Combinations:

Test plan was determined by considering the worst-case mode from all possible combinations. The target Power is specified in report 250519-01.TR39, and the Tx settings were configured using the DRTU Tool.

Band	Mode & BW [MHz]	Channel	Frequency [MHz]	Rate	Puncturing config.
UNII-1	802.11be80	42	5210	EHT0	60 / 91 (Low)
UNII-1	802.11be80	42	5210	EHT0	60 / 92 (Mid)
UNII-1	802.11be160	50	5250	EHT0	120 / 95 (Low)
UNII-1	802.11be160	50	5250	EHT0	120 / s95 (High)
UNII-1	802.11be160	50	5250	EHT0	140 / 97 (Low)
UNII-1	802.11be160	50	5250	EHT0	140 / s99 (High)
UNII-2A	802.11be80	58	5290	EHT0	60 / 91 (Low)
UNII-2A	802.11be80	58	5290	EHT0	60 / 92 (Mid)
UNII-2C	802.11be160	114	5570	EHT0	120 / 95 (Low)
UNII-2C	802.11be160	114	5570	EHT0	120 / s95 (High)
UNII-2C	802.11be160	114	5570	EHT0	140 / 97 (Low)
UNII-2C	802.11be160	114	5570	EHT0	140 / s99 (High)
UNII-2C	802.11be80	122	5610	EHT0	60 / 91 (Low)
UNII-2C	802.11be80	122	5610	EHT0	60 / 92 (Mid)
UNII-3	802.11be80	155	5775	EHT0	60 / 91 (Low)
UNII-3	802.11be80	155	5775	EHT0	60 / 92 (Mid)

B.1.1 UNII-1

Standard references

FCC part	Limits																																
15.407 (b) (1)	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 e.i.r.p. of -27 dBm/MHz.																																
15.209	Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a): <table><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr><tr><td>0.009-0.490</td><td>2400/f(kHz)</td><td>-</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/f(kHz)</td><td>-</td><td>300</td></tr><tr><td>1.705-30.0</td><td>30</td><td>-</td><td>30</td></tr><tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr><tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr><tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr></table>	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	0.009-0.490	2400/f(kHz)	-	300	0.490-1.705	24000/f(kHz)	-	300	1.705-30.0	30	-	30	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																													
	0.009-0.490	2400/f(kHz)	-	300																													
	0.490-1.705	24000/f(kHz)	-	300																													
	1.705-30.0	30	-	30																													
	30-88	100	40	3																													
	88-216	150	43.5	3																													
	216-960	200	46	3																													
	Above 960	500	54	3																													
	The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.																																
For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.																																	

Test procedure

The radiated setup shown in section *Test & System Description* was used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used. The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst-case configuration selected from the section B.1.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	QuasiPeak	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dB	---
40.7	21.5	40.0	18.5	V
105.1	32.4	43.5	11.1	H

Note 1: The detected spurious signals do not depend on either the operating channel or the modulation mode.

1 GHz – 40 GHz, 802.11ax/be160, EHT0, Chain A

Radiated Spurious – CH50_MRU140_97(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4375.4	45.5	Average	54.0	8.1	H
4375.4	55.3	Peak	74.0	18.8	H
20838.7	43.8	Average	54.0	10.2	V
20838.7	48.7	Peak	74.0	25.3	V

1 GHz – 40 GHz, 802.11ax/be160, EHT0, Chain B

Radiated Spurious – CH50_MRU140_97(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
10649.0	49.5	Average	54.0	4.5	H
10649.0	58.9	Peak	74.0	15.1	H
20838.7	43.8	Average	54.0	10.2	V
20838.7	48.4	Peak	74.0	25.6	V

1 GHz – 40 GHz, 802.11ax/be160, EHT0, Chain A+B

Radiated Spurious – CH50_MRU140_97(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4375.4	43.8	Average	54.0	10.2	H
4375.4	52.6	Peak	74.0	21.4	V
20838.7	43.5	Average	54.0	10.5	V
20838.7	48.3	Peak	74.0	25.7	V

B.1.2 UNII-2AStandard references

FCC part	Limits																				
15.407 (a) (2)	For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band.																				
15.209	Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a): <table><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr><tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr><tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr><tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr></table> The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																		
30-88	100	40	3																		
88-216	150	43.5	3																		
216-960	200	46	3																		
Above 960	500	54	3																		

Test procedure

The radiated setups shown in section *Test & System Description* were used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used. The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst-case configuration selected from the section B.1.

Test Results**Radiated spurious - 30 MHz – 1 GHz****Radiated Spurious – All modes**

Frequency	QuasiPeak	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dB	---
40.7	20.6	40.0	19.4	V
108.8	24.4	43.5	19.1	V

Note 1: The detected spurious signals do not depend on either the operating channel or the modulation mode.

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain A

Radiated Spurious – CH58_MRU60_91(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10645.5	58.8	Peak	74.0	15.2	H
10645.5	48.9	Average	54.0	5.1	V
21161.1	42.3	Average	54.0	11.7	V
21161.1	47.8	Peak	74.0	26.2	V

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain B

Radiated Spurious – CH58_MRU60_91(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10642.0	58.9	Peak	74.0	15.1	H
10642.0	49.2	Average	54.0	4.8	H
21161.1	47.5	Peak	74.0	26.5	V
21161.1	41.6	Average	54.0	12.4	V

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain A+B

Radiated Spurious – CH58_MRU60_91(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10647.5	48.8	Average	54.0	5.2	V
10647.5	59.5	Peak	74.0	14.5	H
21161.1	41.9	Average	54.0	12.1	V
21161.1	48.2	Peak	74.0	25.8	V

B.1.3 UNII-2C

Standard references

FCC part	RSS clause	Limits																				
15.407 (b) (3)	RSS-247 Clause 7.3.3.3	For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.																				
15.209	RSS-GEN A1, Clause 8.9	Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a): <table><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr><tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr><tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr><tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr></table> The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																			
30-88	100	40	3																			
88-216	150	43.5	3																			
216-960	200	46	3																			
Above 960	500	54	3																			

Test procedure

The radiated setup shown in section *Test & System Description* was used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used. The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst-case configuration selected from the section B.1.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	QuasiPeak	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dB	---
40.7	20.6	40.0	19.4	V
108.8	24.8	43.5	18.7	V

Note 1: The detected spurious signals do not depend on either the operating channel or the modulation mode.

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain A

Radiated Spurious – CH122_MRU60_92(Mid)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4674.8	48.5	Average	54.0	5.5	H
4674.8	54.5	Peak	74.0	19.5	H
22440.0	39.8	Average	54.0	14.2	V
22440.0	48.7	Peak	74.0	25.3	V

1 GHz – 40 GHz, 802.11ax/be160, EHT0, Chain B

Radiated Spurious – CH114_MRU140_97(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4641.4	55.4	Peak	74.0	18.6	H
4641.4	48.4	Average	54.0	5.6	H
22121.0	47.0	Peak	74.0	27.0	H
22121.0	39.5	Average	54.0	14.4	H

1 GHz – 40 GHz, 802.11ax/be160, EHT0, Chain A+B

Radiated Spurious – CH114_MRU120_s95(High)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4625.1	55.3	Peak	74.0	18.7	H
4625.1	48.5	Average	54.0	5.5	H
22120.0	46.3	Peak	74.0	27.7	V
22120.0	40.0	Average	54.0	14.0	V

B.1.4 UNII-3Standard references

FCC part	RSS clause	Limits																				
15.407 (b) (4)	RSS-247 Clause 7.3.3.4	For transmitters operating in the 5.725-5.85 GHz 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.																				
15.209	RSS-GEN A1, Clause 8.9	Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a): <table><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr><tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr><tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr><tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr></table> The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																			
30-88	100	40	3																			
88-216	150	43.5	3																			
216-960	200	46	3																			
Above 960	500	54	3																			

Test procedure

The radiated setup shown in section *Test & System Description* was used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used. The final measurement is done by varying the antenna height, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst-case configuration selected from the section B.1.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	QuasiPeak	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dB	---
40.8	20.5	40.0	19.5	V
108.8	25.8	43.5	17.7	V

Note 1: The detected spurious signals do not depend on either the operating channel or the modulation mode.

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain A

Radiated Spurious – CH155_MRU60_92(Mid)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4812.7	54.1	Peak	74.0	19.9	H
4812.7	45.7	Average	54.0	8.3	V
23099.8	46.2	Peak	74.0	27.8	H
23099.8	41.3	Average	54.0	12.7	V

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain B

Radiated Spurious – CH155_MRU60_91(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4812.7	55.7	Peak	74.0	18.3	H
4812.7	47.8	Average	54.0	6.2	H
23100.2	47.1	Peak	74.0	26.9	V
23100.2	39.9	Average	54.0	14.1	V

1 GHz – 40 GHz, 802.11ax/be80, EHT0, Chain A+B

Radiated Spurious – CH155_MRU60_91(Low)

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4812.7	55.3	Peak	74.0	18.7	H
4812.7	47.2	Average	54.0	6.8	H
23100.2	39.4	Average	54.0	14.6	V
23100.2	46.3	Peak	74.0	27.7	H