N° 1-6736
Scope available
on www.cofrac.fr

CERTIFICATE #3478.01

TEST REPORT

EUT Description	**WLAN and BT, 2x2 Wi-Fi and BT, M.2 1216 adapter card**
Brand Name	**Intel® BE211D2W**
Model Name	**BE211D2W, BE211D2W M**
FCC/IC ID	**FCC ID: PD9BE211D2 / IC ID: 1000M-BE211D2**
Date of Test Start/End	**2025-06-20 / 2025-08-01**
Features	**2x2 WiFi - Bluetooth®** (see section 5)

Applicant	**Intel Corporation SAS**
Address	**425 Rue de Goa – Le Cargo B6 – 06600 Antibes, FRANCE**
Contact Person	**Benjamin Lavenant**
Telephone/Fax/ Email	**Benjamin.lavenant@intel.com**

Reference Standards	**FCC CFR Title 47 Part 15 C** **FCC CFR Title 47 Part 15 E** **RSS-248 issue 3** **RSS-247 issue 3, RSS-Gen issue 5 - A1** (see section 1)

Test Report identification	**250519-02.TR38**
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

Issued by	Reviewed by
Digitally signed by Khodor RIDA Date: 2025.08.01 18:00:19 +02'00'	Digitally signed by zayd DN: cn=zayd, email=zayd.ouachicha@intel.com, c=US Date: 2025.08.01 18:15:10 +02'00'
Khodor RIDA (Test Engineer Lead)	Zayd OUACHICHA (Technical Manager)

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Table of Contents

1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 CFR part 15 - Subpart C – §15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz. 2024-10-01 Edition 2. FCC Title 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements. 2024-10-01 Edition 3. FCC OET KDB 558074 D01 v05r02 - Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules. 4. FCC Title 47 eCFR part 15 – Subpart E - Unlicensed National Information Infrastructure Devices. 2024-10-01 edition 5. FCC OET KDB 291074 D01 v01 - General Requirements 6. FCC OET KDB 291074 D02 v01 - EMC Measurement 7. FCC OET KDB 291074 D03 v01 - QA General Questions and Answers 8. FCC OET KDB 291074 D04 v01 – UN5GHz Checklist v01 9. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 10. FCC OET KDB 987594 D01 U-NII 6GHz General Requirements v03 11. FCC OET KDB 987594 D02 U-NII 6 GHz EMC Measurement v03 12. FCC OET KDB 987594 D03 U-NII 6 GHz QA v03 13. 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). 14. ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
ISED	1. RSS-247 Issue 3 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices. 2. RSS-Gen Issue 5 A1- General Requirements for Compliance of Radio Apparatus. 3. FCC OET KDB 558074 D01 v05r02 - Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules. 4. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 5. RSS-248 Issue 3 - Radio Local Area Network (RLAN) Devices in the 5925-7125 MHz band. 6. FCC OET KDB 987594 D01 U-NII 6GHz General Requirements v03 7. FCC OET KDB 987594 D02 U-NII 6 GHz EMC Measurement v v03 8. FCC OET KDB 987594 D03 U-NII 6 GHz QA v03 9. ANSI C63.10-2020+cor2023+Amd2024 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

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 company number 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: 21.12°C Max: 31.88°C Avg: 26.5°C
Humidity	Min: 24.48% Max: 68.95% Avg: 46.72%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200803-01.S01	Extender	ADEXELEC	139245	2020-08-31	
	170000-01.S57	Adapter	BNJ C0 V3	ASS00959-00-0C	2025-03-24	
	200611-03.S30	Test PC	Latitude 5401	6DJLK13	2020-08-19	
	200921-01.S01	Wieson Dipole Antenna	ARY121-0009-002-H0	-	2020-09-28	
	200921-01.S02	Wieson Dipole Antenna	ARY121-0009-002-H0	-	2020-09-28	
#02	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200803-01.S01	Extender	ADEXELEC	139245	2020-08-31	
	170000-01.S57	Adapter	BNJ C0 V3	ASS00959-00-0C	2025-03-24	
	200611-03.S30	Test PC	Latitude 5401	6DJLK13	2020-08-19	
	230526-08.S73	Monopole Antenna	Hong-Bo	AD05	2025-01-13	
	230526-08.S74	Monopole Antenna	Hong-Bo	AD06	2025-01-13	
#03	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200904-01.S14	Extender	ADEXELEC	12	2023-06-22	
	170000-01.S56	Adapter	BNJ C0 V3	E1578726888186A	2025-03-24	
	170000-01.S55	Test PC	LATITUDE 5530	004250000000002AA521	2025-03-24	
	200921-01.S03	Wieson Dipole Antenna	ARY121-0009-002-H0	-	2020-09-28	
	200921-01.S04	Wieson Dipole Antenna	ARY121-0009-002-H0	-	2020-09-28	
#04	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200904-01.S14	Extender	ADEXELEC	12	2023-06-22	
	170000-01.S56	Adapter	BNJ C0 V3	E1578726888186A	2025-03-24	
	170000-01.S55	Test PC	LATITUDE 5530	004250000000002AA521	2025-03-24	
	230526-08.S75	Monopole Antenna	Hong-Bo	AD07	2025-01-13	
	230526-08.S76	Monopole Antenna	Hong-Bo	AD08	2025-01-13	

5. EUT Features

The information provided by the customer herein is provided.

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® BE211D2W
Model Name	BE211D2W, BE211D2W M
Software Version	DRTU.08798.99.0.99
Driver Version	Wi-Fi : 99.0.99.2 / BT : 23.160.25212.8026
Prototype / Production	Production
Supported Radios	802.11b/g/n/ax/be 2.4GHz 802.11a/n/ac/ax/be 5.2GHz 5.6GHz 5.8GHz 5.9GHz 802.11ax/be 6.0GHz Bluetooth 2.4GHz

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) - 2.4GHz	+2.95	+2.95
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) - 2.4GHz	+2.83	+2.83
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

For each antenna type (Dipole, Monopole), the low, mid, and high channels were tested for each RF chain (A, B or A+B), bandwidth, modulation and sub-band. Only the worst case per sub-band 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.

	FCC part	RSS part	Test name	Verdict
802.11 b/g/n/ax 2.4GHz	15.247 (d) 15.209	RSS-247 Clause 5.5 RSS-Gen A1 Clause 8.9	Spurious Emission (radiated)	P
BLE	15.247 (d) 15.209	RSS-247 Clause 5.5 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P
BT	15.247 (d) 15.209	RSS-247 Clause 5.5 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P
802.11 a/n/ac/ax – U-NII-1	15.407 (b) (1) 15.209	RSS-247 Clause 6.2.1.2 RSS-GEN A1, Clause 8.9	Spurious Emission (radiated)	P
802.11 a/n/ac/ax – U-NII-2A	15.407 (b) (2) 15.209	RSS-247 Clause 6.2.2.2 RSS-GEN A1, Clause 8.9	Spurious Emission (radiated)	P
802.11 a/n/ac/ax – U-NII-2C	15.407 (b) (3) 15.209	RSS-247 Clause 6.2.3.2 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P
802.11 a/n/ac/ax – U-NII- 3	15.407 (b) (4) 15.209	RSS-247 Clause 6.2.4.2 RSS-GEN A1 Clause 8.9	Spurious Emission (radiated)	P
802.11 a/n/ac/ax – U-NII- 4	15.407 (b) (3) 15.209	RSS-247 Clause 6.2.5.3	Undesirable emissions limits: Spurious emissions (radiated)	P
802.11 a/n/ac/ax – U-NII- 5 to U-NII- 8	15.407 (b) (5) 15.209	RSS-248 Clause 4.6	Undesirable emissions limits (radiated)	P

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

8. Document Revision History

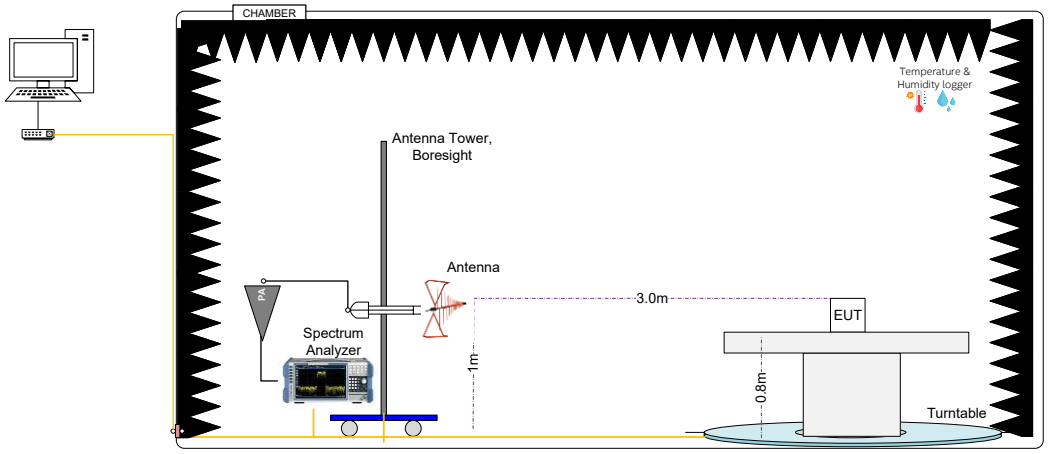
Revision #	Modified by	Revision Details
Rev. 00	K. RIDA	First Issue

Annex A. Test & System Description

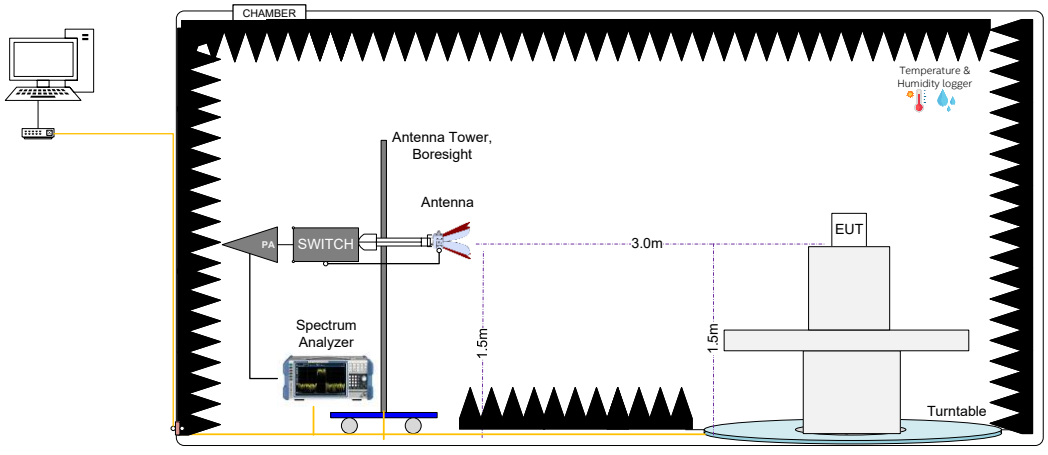
A.1 Measurement System

The DUT was 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.

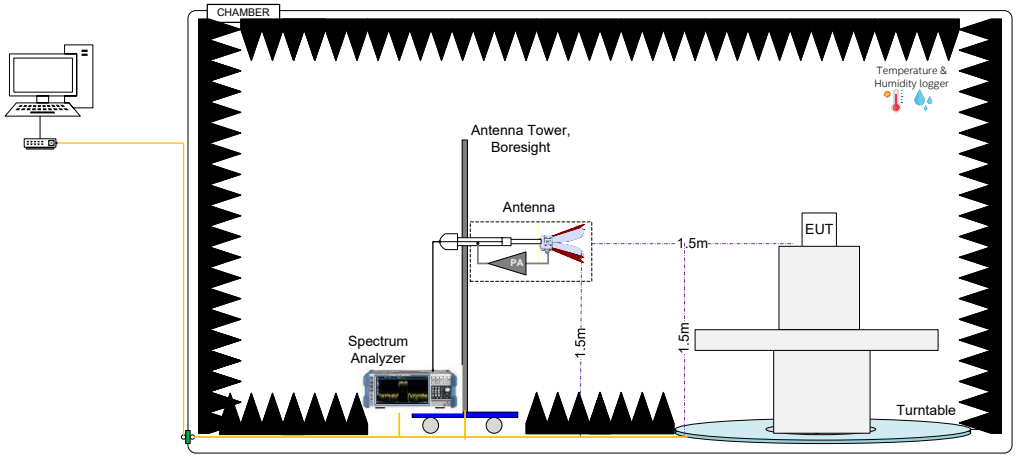
Radiated test setup
Radiated Setup 30 MHz – 1 GHz (Transmitter tests)



Radiated Setup 1 GHz – 11 GHz (Transmitter tests)



Radiated Setup 11 GHz – 40 GHz (Transmitter tests)



Sample Calculation

The spurious received voltage V(dBµV) in the spectrum Analyzer is converted to Electric field strength using the transducer factor F corresponding to the Rx path Loss:

F (dB/m)= Rx Antenna Factor (dB/m) + Cable losses (dB) – Amplifiers Gain (dBi)
E (dBµV) = V(dBµV) + F (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:

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

where

$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dBµV/m
E_{Meas} is the field strength of the emission at the measurement distance, in dBµV/m
D_{Meas} is the measurement distance, in m
$D_{SpecLimit}$ 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	Temp & Humidity Logger	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	EMCenter	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	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	NA	NA
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 table below 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 Peronnel
Spuirous Emissions (radiated)	K. RIDA

B.1 Test Conditions

For 802.11b/g modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.
For 802.11n20 & 802.11ax/be20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax/be40 (40MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.
For Bluetooth Low Energy mode the EUT can transmit only at CHAIN A RF output.

Transmission	Mode	Bandwidth (MHz)	Worst Case Data Rate
SISO	802.11b	20	1Mbps
	802.11g, a	20	6Mbps
	802.11n	20	HT0
		40	HT0
	802.11ac	80	VHT0
		160	VHT0
	802.11ax/be	20	MCS0
		40	MCS0
		80	MCS0
		160	MCS0
	802.11be	320	MCS0
MIMO	802.11n	20/40	HT8
	802.11ac	80/160	VHT0
	802.11ax/be	20/40/80/160	MCS0
	802.11be	320	MCS0

B.2 Test Results

B.2.1 802.11 b/g/n/ax 2.4GHz

Standard references

<table>
<tr><th>FCC part</th><th>RSS part</th><th>Limits</th></tr>
<tr><td>15.247 (d)
15.209</td><td>RSS-247
Clause 5.5
RSS-Gen A1
Clause 8.9</td><td>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 Stregth (µV/m)</th><th>Field Stregth (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.</td></tr>
</table>

Test procedure

The radiated setups shown in section *A.1* 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 from 1 to 4 meters, the EUT azimuth over 360º and for both Vertical and Horizontal polarizations.

According to KDB 558074 D01, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle, and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
42.9	30.8	Quasi-Peak	40.0	9.2	V
125.0	26.2	Quasi-Peak	43.5	17.3	V

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

1 GHz – 26.5 GHz, 802.11b, 1Mbps, Chain B, Dipole

Radiated Spurious – CH7

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4883.8	49.9	Peak	74.0	24.1	H
4883.8	46.4	Average	54.0	7.6	H
12209.0	47.0	Peak	74.0	27.0	V
12209.0	42.1	Average	54.0	11.9	V
14651.8	45.4	Peak	74.0	28.6	V
14651.8	40.3	Average	54.0	13.7	V
24420.0	49.4	Peak	74.0	24.6	V
24420.0	43.9	Average	54.0	10.1	V

B.2.2 BT

Standards references

<table>
<tr><th>FCC part</th><th>RSS part</th><th>Limits</th></tr>
<tr><td>15.247 (d)
15.209 (a)</td><td>RSS-247
Clause 5.5

RSS GEN A1
Clause 8.9</td><td>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 Stregth (µV/m)</th><th>Field Stregth (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.</td></tr>
</table>

Test procedure

The radiated setups shown in section *A.1* 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 from 1 m to 4 m, the EUT azimuth over 360º and for both Vertical and Horizontal polarizations.

The radiated spurious emissions were measured on the lowest, middle and highest channels. Only the worst case is reported.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
43.2	28.6	Quasi-Peak	40	11.5	V
125.0	28.2	Quasi-Peak	43.5	15.3	V

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

1 GHz – 26.5 GHz, BR – GFSK, Monopole

Radiated Spurious – CH78 DH5

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4960.0	51.3	Peak	74.0	22.7	V
4960.0	40.2	Average	54.0	13.8	V
20880.2	47.7	Peak	74.0	26.3	H
20880.2	39.9	Average	54.0	14.1	V

B.2.3 BLE

Standards references

FCC part	RSS part	Limits
15.247 (d) 15.209	RSS-247 Clause 5.5 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): Freq Range (MHz) / Field Stregth (µV/m) / Field Stregth (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 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 setups shown in section A.1 were used to measure the radiated spurious emissions.
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 from 1 to 4 meters, the EUT azimuth over 360º and for both Vertical and Horizontal polarizations.

The radiated spurious emissions were measured on the lowest, middle and highest channels.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Quasi-Peak	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dB	---
51.6	32.4	40	7.6	V
125.0	27.1	43.5	16.4	V

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

1 GHz – 26.5 GHz, BLE, Dipole

Radiated Spurious – 2402 MHz

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4808.1	49.8	Peak	74.0	24.2	V
4808.1	37.8	Average	54.0	16.2	H
20880.2	46.9	Peak	74.0	27.1	V
20880.2	40.4	Average	54.0	13.6	V

B.2.4 UNII 1

Standard references

<table>
<tr><th>FCC part</th><th>Limits</th></tr>
<tr><td>15.407 (b) (1)</td><td>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.</td></tr>
<tr><td>15.209</td><td>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>
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.</td></tr>
</table>

Test procedure

The radiated setup shown in section A.1 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 360º and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst-case configuration selected from the section B.1 and using the low, middle and high channels.

According to ANSI c63.10, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle, and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
43.5	29.3	Quasi- Peak	40	10.7	V
125.0	27	Quasi- Peak	43.5	16.5	V

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

1 GHz – 40 GHz, 802.11n20, HT0, Chain B, Monopole

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10651.5	60.3	Peak	74.0	13.7	V
10651.5	49.8	Average	54.0	4.2	H
15592.1	46.9	Peak	74.0	27.1	V
15592.1	35.8	Average	54.0	18.2	V
20799.6	42.6	Average	54.0	11.4	V
20799.6	46.7	Peak	74.0	27.3	V
26008.5	47.8	Peak	68.2	20.4	V

B.2.5 UNII 2A

Standard references

<table>
<tr><th>FCC part</th><th>Limits</th></tr>
<tr><td>15.407 (a) (2)</td><td>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.</td></tr>
<tr><td>15.209</td><td>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.</td></tr>
</table>

Test procedure

The radiated setups shown in section *A.1* 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 360º and for both Vertical and Horizontal polarizations.

According to ANSI c63.10, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
45.7	35.7	Quasi-Peak	40	4.3	V
232.4	34.2	Quasi-Peak	46	11.8	H

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

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain A, Monopole

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10647.5	60.2	Peak	74.0	13.8	V
10647.5	49.8	Average	54.0	4.2	H
21039.8	42.3	Average	54.0	11.7	V
21039.8	47.0	Peak	74.0	26.9	H

B.2.6 UNII 2C

Standard references

<table>
<tr><th>FCC part</th><th>RSS clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (3)</td><td>RSS-247 Clause 6.2.3 (2)</td><td>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.</td></tr>
<tr><td>15.209</td><td>RSS-GEN A1, Clause 8.9</td><td>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.</td></tr>
</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 360º and for both Vertical and Horizontal polarizations.

According to ANSI C63.10, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle, and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
43.7	31.2	Quasi-Peak	40	8.8	V
125.0	26.4	Quasi-Peak	43.5	17.1	H

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

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A+B, Monopole

Radiated Spurious – CH140

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10651.0	61.0	Peak	74.0	13.0	V
10651.0	49.8	Average	54.0	4.2	H
11382.8	40.3	Average	54.0	13.7	V
11382.8	46.9	Peak	74.0	27.1	H
22766.3	51.4	Peak	74.0	22.6	H
22766.3	44.6	Average	54.0	9.4	V

B.2.7 UNII 3

Standard references

FCC part	RSS clause	Limits
15.407 (b) (4)	RSS-247 Clause 6.2.4.2	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): 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 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 360º and for both Vertical and Horizontal polarizations.

According to ANSI c63.10, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
52.0	31.4	Quasi-Peak	40	8.6	V
125.0	26.6	Quasi-Peak	43.5	16.9	V

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain B, Monopole

Radiated Spurious – CH157

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10651.0	60.9	Peak	74.0	13.1	H
10651.0	49.6	Average	54.0	4.4	V
11552.9	41.6	Average	54.0	12.4	V
11552.9	47.5	Peak	74.0	26.5	V
23105.6	55.6	Peak	74.0	18.4	H
23105.8	51.4	Average	54.0	2.6	H

B.2.8 UNII 4

Standard references

<table>
<tr><th>FCC part</th><th>RSS clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (5) (iii)</td><td>RSS-247 Clause 6.2.5.3</td><td>For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more 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 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.
.</td></tr>
<tr><td>15.407 (b) (5) (ii)</td><td>RSS-247 Clause 6.2.5.3</td><td>For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of −5 dBm/MHz and shall decrease linearly to an e.i.r.p. of −27 dBm/MHz at or above 5.925 GHz</td></tr>
<tr><td>15.209</td><td>RSS-GEN A1, Clause 8.9</td><td>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 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.</td></tr>
</table>

Test procedure

The radiated setup shown in section *A.1* 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 360º and for both Vertical and Horizontal polarizations.

According to ANSI C63.10, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
43.1	28.7	Quasi-Peak	40	11.3	V
125.0	26.9	Quasi-Peak	43.5	16.6	H

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

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain B, Dipole

Radiated Spurious – CH177

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10656.5	60.2	Peak	74.0	13.8	V
10656.5	49.9	Average	54.0	4.1	H
11770.4	46.5	Peak	54.0	7.5	V
11770.4	41.0	Average	54.0	13.0	V

B.2.9 UNII-5 to UNII-8

Standard references

<table>
<tr><th>FCC part</th><th>ISED Clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (5)</td><td>RSS-248 Clause 4.7.2</td><td>For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz.</td></tr>
<tr><td>15.35 (b)</td><td>RSS-Gen Clause 8.1</td><td>When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§15.250, 15.252, 15.253(d), 15.255, 15.256, and 15.509 through 15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.</td></tr>
<tr><td>15.407 (b) (8)</td><td>RSS-248 Clause 4.7.2</td><td>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in FCC Part 15.209 and RSS-Gen.</td></tr>
<tr><td>15.209</td><td>RSS-Gen Clause 8.9</td><td>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 above 1000 MHz. Radiated emission limits in this band is 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.</td></tr>
</table>

Test procedure

The radiated setups shown in section A.1 were used to measure the radiated spurious emissions.

Depending of the frequency range and bands being tested, different antennas and filters were used.

- For frequencies less than or equal to 1000 MHz, measurements were made with the CISPR quasi-peak detector with a resolution bandwidth of 120kHz and a video bandwith 3 times of the resolution bandwidth.
- For restricted bands, measurements above 1000 MHz were performed using average and peak detectors with a minimum resolution bandwidth of 1 MHz and a video bandwith 3 times of the resolution bandwidth
- For unrestricted bands, measurements above 1000 MHz were performed using RMS* and peak detectors with a minimum resolution bandwidth of 1 MHz and a video bandwith 3 times of the resolution bandwidth

*RMS detector is required only for FCC. For ISED tests, only average and peak detectors are measured for both restricted and unrestricted bands above 1GHz.

The final measurement is performed by varying the antenna height from 1 m to 4 m, the EUT rotating in azimuth over 360º for both vertical and horizontal polarizations.

According to KDB 987594 D03, Low, Mid and High channels were tested for the narrowest and widest bandwidth of each band (UNII-5, UNII-6, UNII-7 and UNII-8), covering also the lowest and highest channels as required by the RSS-248 issue 3.

For the 20 MHz and 320 MHz bandwidths, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
125.0	26.9	Quasi-Peak	43.5	16.6	H
43.3	30	Quasi-Peak	40.0	10.0	V

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

UNII 5

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain B, Monopole

Radiated Spurious – CH1

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10646.0	60.3	Peak	74.0	13.7	H
10646.0	49.9	Average	54.0	4.2	V
23815.0	45.8	Average	54.0	8.2	V
23818.0	49.1	Average	54.0	4.9	V
23818.0	56.4	Peak	74.0	17.6	V
23819.6	47.1	Average	54.0	6.9	V

UNII 6

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A, Monopole

Radiated Spurious – CH113

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10652.5	62.3	Peak	74.0	11.7	V
10652.5	49.6	Average	54.0	4.4	V
19546.3	40.9	Average	54.0	13.1	V
19546.3	47.6	Peak	74.0	26.4	V
26052.0	54.7	Peak	88.2	33.5	V
26052.0	43.5	RMS	68.2	24.8	V

UNII 7

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A, Monopole

Radiated Spurious – CH181

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10648.5	61.6	Peak	74.0	12.4	V
10648.5	49.8	Average	54.0	4.2	V
13708.1	48.4	Peak	88.2	39.8	V
13708.1	37.5	RMS	68.2	30.7	H
20563.2	53.7	Peak	74.0	20.3	V
20563.2	43.0	Average	54.0	11.0	V
34274.9	52.6	Peak	88.2	35.6	V
34274.9	48.0	RMS	68.2	20.2	V

UNII 8

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A, Monopole

Radiated Spurious – CH185

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10646.5	60.5	Peak	74.0	13.5	H
10646.5	50.0	Average	54.0	4.0	V
13752.6	39.2	RMS	68.2	28.9	V
13752.6	46.0	Peak	88.2	42.2	V
20630.9	54.0	Peak	74.0	20.0	H
20630.9	44.7	Average	54.0	9.3	H
34369.7	55.5	Peak	88.2	32.7	V
34369.7	46.4	RMS	68.2	21.8	V