



# TEST REPORT

EUT Description	WLAN and BT, 2x2 PCIe M.2 2230 SD adapter card
Brand Name	Intel® Wi-Fi 6E AX211
Model Name	AX211NGW
FCC ID	PD9AX211NG
Date of Test Start/End	2020-12-04 / 2020-12-17
Features	802.11ax, Dual Band, 2x2 Wi-Fi 6 + Bluetooth® 5.2 (see section 5)

Applicant	Intel Mobile Communications
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Contact Person	Steven Hackett
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Reference Standards	FCC CFR Title 47 Part 15 E (see section 1)
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Test Report identification	200611-01.TR39
Revision Control	Rev 00 This test report revision replaces any previous test report revision (see section 8)

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\_\_\_\_\_ Issued by \_\_\_\_\_ Reviewed by \_\_\_\_\_

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# Table of Contents

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- 1. Standards, reference documents and applicable test methods ..... 3**
- 2. General conditions, competences and guarantees ..... 3**
- 3. Environmental Conditions ..... 3**
- 4. Test samples ..... 4**
- 5. EUT Features ..... 5**
- 6. Remarks and comments ..... 5**
- 7. Test Verdicts summary ..... 5**
  - 7.1. 802.11 AX – U-NII- 5 TO U-NII-8..... 5
- 8. Document Revision History ..... 5**
- Annex A. Test & System Description ..... 6**
  - A.1 MEASUREMENT SYSTEM..... 6
  - A.2 TEST EQUIPMENT LIST ..... 8
  - A.3 MEASUREMENT UNCERTAINTY EVALUATION ..... 9
- Annex B. Test Results UNII-5 to UNII-8..... 10**
  - B.1 TEST CONDITIONS..... 10
  - B.2 RADIATED SPURIOUS EMISSION ..... 11
- Annex C. Photographs ..... 27**
  - C.1 TEST SETUP ..... 27
  - C.2 TEST SAMPLE ..... 28

## 1. Standards, reference documents and applicable test methods

FCC	<ol style="list-style-type: none"> <li>1. FCC Title 47 eCFR part 15 – Subpart E - Unlicensed National Information Infrastructure Devices. 2021-02-08 Online edition</li> <li>2. FCC Title 47 eCFR part 15 – Subpart C – §15.209 Radiated emission limits; general requirements. 2021-02-08 Online edition</li> <li>3. FCC OET KDB 987594 D01 U-NII 6GHz General Requirements v01r02</li> <li>4. FCC OET KDB 987594 D02 U-NII 6 GHz EMC Measurement v01r01</li> <li>5. FCC OET KDB 987594 D03 U-NII 6 GHz QA v01</li> <li>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).</li> <li>7. ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.</li> </ol>
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## 2. General conditions, competences and guarantees

- ✓ 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 WRF Lab declines any responsibility with respect to the identified information provided by the customer and that may affect the validity of results.
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- ✓ 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.
- ✓ Complete or partial reproduction of the report cannot be made without written permission of Intel WRF Lab.

## 3. Environmental Conditions

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

Temperature	27.8°C ± 1.3°C
Humidity	36.9% ± 11.9%

#### 4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#1	200611-01.S17	WiFi 6E Module	AX211NGW	WFM:D8F883596CD0	2020-12-01	Used for 1-9.5GHz and 18GHz-40GHz Radiated Spurious Emissions tests
	200102-01.S03	Extender	ADEXELEC	-	2020-01-02	
	200611-01.S06	Adaptor	PowerBy SNJ A4	-	2020-11-30	
	170801-01.S10	Laptop	Latitude E7470	7KNOXF2	2017-09-08	
	200602-03.S06	Absorber	MCS0	-	2020-07-03	
	200611-03.S22	Antenna 6-7 GHz	WRF-BR-PIFA-V3.2	-	2020-07-20	
	200611-03.S23	Antenna 6-7 GHz	WRF-BR-PIFA-V3.2	-	2020-07-20	
#2	200611-01.S04	WiFi 6E Module	AX211NGW	WFM:D8F8835981DE	2020-11-23	Used for 30MHz-1GHz and 9.5-18GHz Radiated Spurious Emissions tests
	200611-03.S26	Extender	ADEXELEC	-	2020-07-01	
	200611-01.S07	Adaptor	PowerBy SNJ A4	-	2020-11-30	
	200602-03.S06	Absorber	MCS0	-	2020-07-03	
	170000-01.S01	Laptop	Latitude E5470	DBPLMC2	2017-03-28	
	200611-03.S24	Antenna 6-7 GHz	WRF-BR-PIFA-V3.2	-	2020-07-20	
	200611-03.S25	Antenna 6-7 GHz	WRF-BR-PIFA-V3.2	-	2020-07-20	

## 5. EUT Features

The herein information is provided by the customer

Brand Name	Intel® Wi-Fi 6E AX211				
Model Name	AX211NGW				
Software Version	DRTU Version: 11195_99_2100_51G				
Driver Version	99.0.58.3				
Prototype / Production	Production				
Supported Radios	802.11b/g/n/ax	2.4GHz (2400.0 – 2483.5 MHz)			
	802.11a/n/ac/ax	5.2GHz (5150.0 – 5350.0 MHz)			
		5.6GHz (5470.0 – 5725.0 MHz)			
		5.8GHz (5725.0 – 5850.0 MHz)			
	802.11ax	6.0GHz (5925.0 - 7125.0MHz)			
	Bluetooth 5.2	2.4GHz (2400.0 – 2483.5 MHz)			
Antenna Information	Transmitter	Ant A (Main) SISO Mode	Ant B(Aux) SISO Mode	Ant A (Main) MIMO Mode	Ant B (Aux) MIMO Mode
	Manufacturer	Intel	Intel	Intel	Intel
	Antenna Type	PIFA antenna	PIFA antenna	PIFA antenna	PIFA antenna
	SN	NA	NA	NA	NA
	Declared Antenna gain (dBi)	+5.59	+5.59	+5.59 (Completely uncorrelated)	+5.59 (Completely uncorrelated)
MIMO mode signal: Completely uncorrelated.					

## 6. Remarks and comments

1. Low, middle and high channels were tested over uninterrupted UNII-5 to UNII-8 bands. However additional channels were tested to cover each UNII band within 5.925-7.125 GHz.

## 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 – U-NII- 5 to U-NII-8

FCC part	Test name	Verdict
15.407 (b) (5) 15.209	Undesirable emissions limits (radiated)	PASS

## 8. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	N.Bui	First Issue

# Annex A. Test & System Description

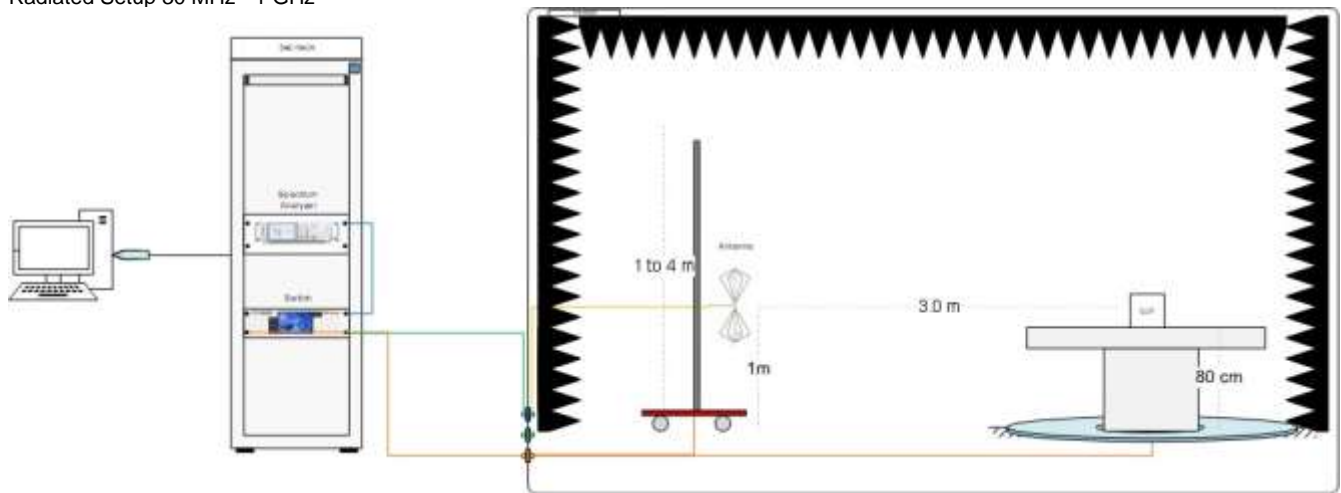
## A.1 Measurement System

Measurements were performed using the following setups, made in accordance to the general provisions of ANSI 63.10-2013 Test Procedures.

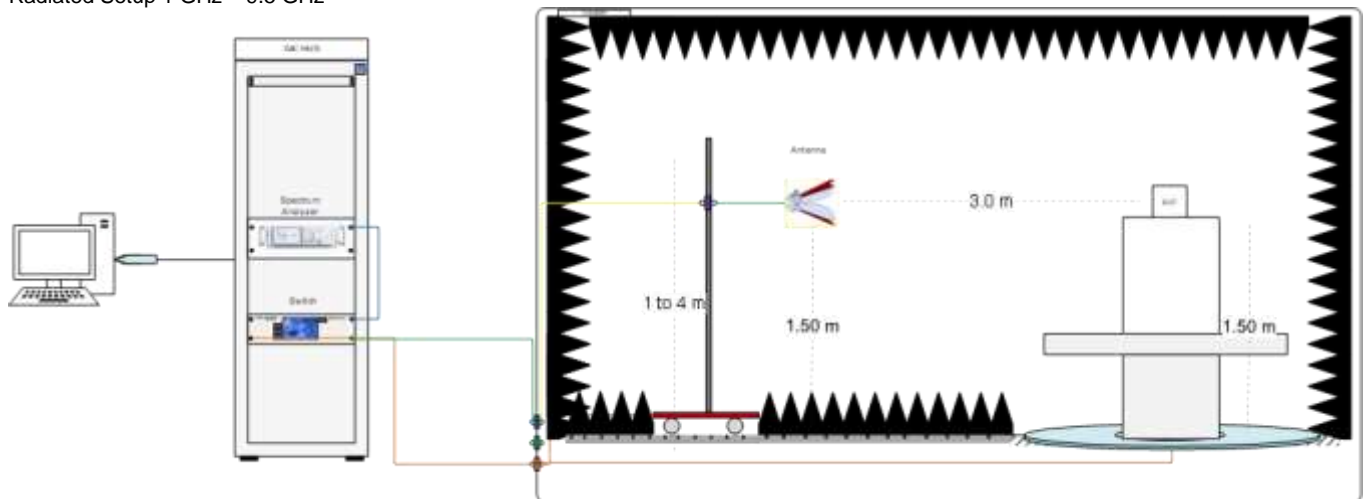
The DUT is installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary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

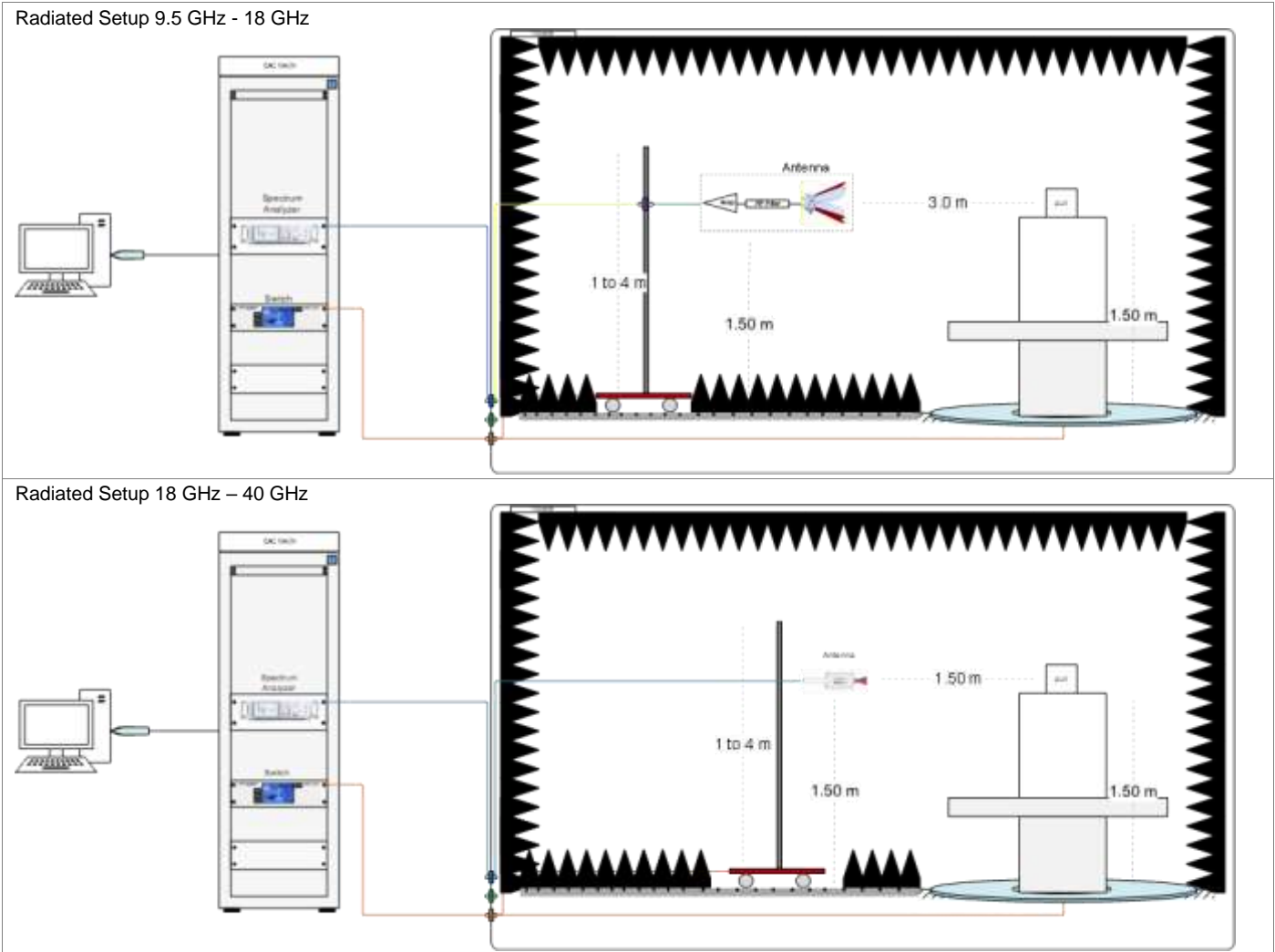
### Radiated test setup

#### Radiated Setup 30 MHz - 1 GHz



#### Radiated Setup 1 GHz - 9.5 GHz





Sample Calculation

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

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

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

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 dB $\mu$ V/m

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

$D_{\text{Meas}}$  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
0135	Anechoic Chamber	FACT3	5720	ETS-Lindgren	2020-07-06	2022-01-07
0136	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
0147	Switch & Positioning systems	EMC Center	00159757	ETS-Lindgren	N/A	N/A
0530	Measurement SW	EMC32, v10.40.10	100623	Rohde & Schwarz	N/A	N/A
1033	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
1076	Spectrum Analyzer	FSW43	101847	Rohde & Schwarz	2020-11-02	2022-11-02
0993	Biconical antenna 30 MHz – 1 GHz	UBAA9115 + BBVU9135 + DGA9552N	0286 + CH 9044	Schwarzbeck	2019-11-22	2021-11-22
0325	Horn antenna	3117	00157734	ETS-Lindgren	2019-08-12	2021-08-12
0248	Horn Antenna 3117 + Amplifier + HPF9.5	3117	00167062+00169546	ETS-Lindgren	2020-04-01	2022-04-01
0334	Double-Ridged Waveguide Horn with Pre-Amplifier 18 GHz to 40 GHz	3116C+PA	00169308bis + 00196308	ETS-Lindgren	2019-07-24	2021-07-24
0859	Cable 2.5m - 30MHz to 18GHz	0500990992500KE	19.23.395	Radiall	2020-11-27	2021-05-27
0206	Cable 1.2m – 18 to 40 GHz	UFA147A-0-0480- 200200	MFR 64639223720- 003	Micro-coax	2020-08-25	2021-02-25
0263	Cable 1m - 1GHz to 18GHz	UFA147A	-	Utilflex	2020-08-25	2021-02-25
0369	Cable 2m - 26.5GHz to 40GHz	794-9191-2000A	E00327	Atem	2020-08-25	2021-02-25
0371	Cable 1m – 30 MHz - 18GHz	UFB311A-0-0590- 50U50U	MFR 64639 223230- 001	Micro-coax	2020-08-25	2021-02-25
1099	Cable 7m DC-18 GHz	0501051057000GX	19.35.850	Radiall	2020-11-27	2021-05-27
0809	Cable 7m - 18GHz to 40GHz	R286304009	-	Radiall	2020-08-25	2021-02-25
1098	Cable 1.5m - DC-18GHz	CBL-1.5M-SMSM+	202879	Mini-Circuits	2020-11-27	2021-05-27
0797	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D0EB1A	Avtech	2019-07-04	2021-07-04

N/A: Not Applicable

### Radiated Setup #2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0337	Anechoic chamber	RFD-FA-100	5996	ETS Lindgren	2020-07-06	2022-07-06
0238	Switch & Positioner	EMCenter	00151232	ETS Lindgren	N/A	N/A
0382	Antenna Tower	2171B-3.0M	00150123	ETS Lindgren	N/A	N/A
0383	Turntable	-	-	ETS Lindgren	N/A	N/A
0329	Measurement SW,	EMC32 v10.50.10	100401	Rohde & Schwarz	N/A	N/A
0133	Spectrum Analyzer	FSV40	101358	Rohde & Schwarz	2020-02-25	2022-02-25
0138	Double Ridge Horn (1- 18GHz)	3117	00152266	ETS Lindgren	2020-03-08	2022-03-08
0248	Horn Antenna 3117 + Amplifier + HPF9.5	3117	00167062+00169546	ETS-Lindgren	2020-04-01	2022-04-01
0334	Double Horn Ridged antenna	3116C-PA	00169308bis + 00196308	ETS-Lindgren	2019-07-24	2021-07-24
0871	RF Cable 1-18GHz, 1.5 m	0501050991200GX	19.21.710	Radiall	2020-08-20	2021-02-20
0860	RF Cable 1-18GHz, 1.2 m	2301761761200PJ	12.22.1104	Radiall	2020-08-20	2021-02-20
0275	RF Cable 1-18GHz - 6.5m	140-8500-11-51	001	Spectrum	2020-08-20	2021-02-20
0684	RF Cable 1GHz-18GHz 1.5m	-	-	Spirent	2020-08-20	2021-02-20
0679	RF Cable 18-40 GHz 6m	R286304009	1747364	Radiall	2020-08-20	2021-02-20
0028	RF Cable 1.2m 40MHz- 40GHz	794-9191-1200A	DA585	Atem	2020-08-20	2021-02-20
0725	RF Cable 1-9.5GHz 1.2m	0500990991200KE	-	Radiall	2020-08-20	2021-02-20
0796	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D4F316	Avtech	2019-07-05	2021-07-05



## Shared Radiated Equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0616	Power Sensor	NRP-Z81	104385	Rohde & Schwarz	2020-04-08	2022-04-08
0617	Power Sensor	NRP-Z81	104386	Rohde & Schwarz	2020-04-08	2022-04-08
0618	Power Sensor	NRP-Z81	104382	Rohde & Schwarz	2020-04-08	2022-04-08

### 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	$\pm 5.26$	dB
Radiated tests 1GHz – 40 GHz	$\pm 4.85$	dB

# Annex B. Test Results UNII-5 to UNII-8

The herein test results were performed by:

Test case measurement	Test Engineer
Radiated spurious emissions	A. Lounes, N. Bui, N. Nachabe

## B.1 Test Conditions

For 802.11ax20 (20 MHz channel bandwidth), 802.11ax40 (40MHz channel bandwidth), 802.11ax80 (80MHz channel bandwidth) and 802.11ax160 (160MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The conducted RF output power at each chain was adjusted according to target values from the following table using the Intel DRTU tool and measuring the power by using a power meter.

Measured values for adjustment were within +/- 0.25 dB from the declared target values.

UNII-5 to UNII-8					Conducted Power, Target Value (dBm)		
Mode	BW (MHz)	Data Rate	CH #	Freq. (MHz)	SISO Chain A	SISO Chain B	MIMO at both ports A and B
802.11ax20	20	HE0	1	5955	15	15	15
			105	6475	15	15	15
			117	6535	15	15	15
			229	7095	15	15	15
802.11ax40	40	HE0	3	5965	15	15	15
			99	6445	15	15	15
			115	6525	15	15	15
802.11ax80	80	HE0	227	7085	15	15	15
			7	5985	15	15	15
			103	6465	15	15	15
			135	6625	15	15	15
802.11ax160	160	HE0	215	7025	15	15	15
			15	6015	15	15	15
			111	6175	15	15	15
			143	6335	15	15	15
			207	6985	15	15	15

The following data rates were selected based on preliminary testing that identified those rates as the worst cases for output power and spurious levels at the band edges:

Transmission Mode	Mode	Bandwidth (MHz)	Worst Case Data Rate
SISO	802.11ax	20/40/80/160	HE0
MIMO	802.11ax	20/40/80/160	HE0

## B.2 Radiated spurious emission

### Standard references

FCC part	Limits																				
15.407 (b) (5)	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.																				
15.35 (b)	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.																				
15.407 (b) (8)	Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.																				
15.209	<p>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):</p> <table border="1" data-bbox="533 833 1324 1048"> <thead> <tr> <th>Freq Range (MHz)</th> <th>Field Strength (<math>\mu\text{V}/\text{m}</math>)</th> <th>Field Strength (<math>\text{dB}\mu\text{V}/\text{m}</math>)</th> <th>Meas. Distance (m)</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>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.</p>	Freq Range (MHz)	Field Strength ( $\mu\text{V}/\text{m}$ )	Field Strength ( $\text{dB}\mu\text{V}/\text{m}$ )	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 ( $\mu\text{V}/\text{m}$ )	Field Strength ( $\text{dB}\mu\text{V}/\text{m}$ )	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.

- 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 bandwidth 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 bandwidth 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 bandwidth 3 times of the resolution bandwidth

Note: When peak measurements satisfy the RMS limit, then RMS measurements are not reported.

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

The radiated spurious emission was measured on the worst case EUT configuration selected from the chapter B.1 and using the low, middle and high channels over uninterrupted UNII-5 to UNII-8 bands. Additional channels were tested to cover each UNII bands within 5.925-7.125 GHz.

Test Results

**30 MHz – 1 GHz, Radiated spurious emissions**

**Radiated Spurious – All modes**

Frequency	QuasiPeak	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dB	---
37.5	28.9	40.0	11.1	V
113.0	33.5	43.5	10.0	V
127.7	35.0	43.5	8.5	V

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

802.11ax20

**1 GHz – 40 GHz, 802.11ax20, HE0, Chain A**

**Radiated Spurious – CH1**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3386.0	58.4	---	68.2	<b>9.8</b>	V
17793.6	---	42.6	54.0	11.3	H
17793.6	54.4	---	74.0	19.6	V
29878.9	51.3	---	68.2	16.9	V

**Radiated Spurious – CH105**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5180.3	51.9	---	68.2	16.3	H
17812.1	---	42.5	54.0	11.5	H
17812.1	54.6	---	74.0	19.4	H
25900.3	49.0	---	68.2	19.2	V

**Radiated Spurious – CH117**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5227.8	52.1	---	68.2	16.1	H
7999.4	55.5	---	68.2	12.7	V
17826.7	---	42.2	54.0	11.8	V
17826.7	54.7	---	74.0	19.3	V
26144.4	48.5	---	68.2	19.7	H

**Radiated Spurious – CH229**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5675.7	57.2	---	68.2	11.0	H
14172.6	51.5	---	68.2	16.7	H
28390.5	49.4	---	68.2	18.8	V

**1 GHz – 40 GHz, 802.11ax20, HE0, Chain B**

**Radiated Spurious – CH1**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4763.8	52.4	---	74.0	21.6	H
4763.8	---	42.0	54.0	12.0	V
17839.9	53.0	---	74.0	21.0	V
17839.9	---	44.0	54.0	10.0	H
23819.7	46.6	---	74.0	27.4	V
23820.1	---	37.9	54.0	16.1	V

**Radiated Spurious – CH105**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5179.0	51.7	---	68.2	16.5	V
17779.9	---	42.3	54.0	11.7	V
17779.9	54.5	---	74.0	19.5	V
25900.3	50.9	---	68.2	17.3	V

**Radiated Spurious – CH117**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5228.3	53.7	---	68.2	14.5	H
17972.6	---	42.5	54.0	11.5	H
17972.6	55.7	---	74.0	18.3	V
26140.6	48.4	---	68.2	19.8	V

**Radiated Spurious – CH229**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5675.7	53.7	---	68.2	14.5	H
14173.6	54.4	---	68.2	13.8	V
28379.9	49.4	---	68.2	18.8	V

**1 GHz – 40 GHz, 802.11ax20, HE0, Chain A+B****Radiated Spurious – CH1**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
4763.8	52.2	---	74.0	21.8	V
4763.8	---	43.8	54.0	10.2	H
17801.2	---	42.5	54.0	11.5	V
17801.2	54.5	---	74.0	19.5	V
23820.1	---	37.4	54.0	16.6	V
23842.8	49.0	---	74.0	25.0	V

### Radiated Spurious – CH105

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5179.9	53.4	---	68.2	14.8	H
17836.6	---	42.3	54.0	11.7	V
17836.6	54.5	---	74.0	19.5	V
25900.3	48.7	---	68.2	19.5	V

### Radiated Spurious – CH117

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5227.8	54.4	---	68.2	13.8	H
17985.8	---	43.0	54.0	11.0	V
17985.8	55.8	---	74.0	18.2	H
26139.7	48.3	---	68.2	19.9	V

### Radiated Spurious – CH229

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5675.7	56.5	---	68.2	11.7	H
14173.6	51.9	---	68.2	16.4	H
28382.3	49.5	---	68.2	18.7	H

[802.11ax40](#)

## 1 GHz – 40 GHz, 802.11ax40, HE0, Chain A

### Radiated Spurious – CH3

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
3375.0	58.4	---	68.2	9.8	H
17785.1	---	42.5	54.0	11.5	V
17785.1	55.2	---	74.0	18.8	H
26751.2	49.7	---	68.2	18.5	H

**Radiated Spurious – CH99**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5156.4	53.1	---	68.2	15.1	H
5545.0	53.2	---	68.2	15.0	V
12852.8	51.2	---	68.2	17.0	H
25780.3	47.3	---	68.2	20.9	V

**Radiated Spurious – CH115**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5220.0	52.3	---	68.2	15.9	V
17777.6	---	42.1	54.0	11.9	V
17777.6	55.0	---	74.0	19.0	V
26100.5	46.9	---	68.2	21.4	V

**Radiated Spurious – CH227**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5667.9	57.0	---	68.2	11.2	H
14134.4	51.0	---	68.2	17.2	H
39554.0	56.6	---	74.0	17.4	H
39558.4	---	45.8	54.0	8.2	H

**1 GHz – 40 GHz, 802.11ax40, HE0, Chain B****Radiated Spurious – CH3**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
4772.1	51.7	---	74.0	22.3	H
4772.1	---	42.5	54.0	11.5	H
17841.3	53.1	---	74.0	20.9	H
17841.3	---	43.5	54.0	10.6	H
23859.8	47.6	---	74.0	26.4	V
23859.8	---	37.9	54.0	16.1	V



**Radiated Spurious – CH99**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5155.9	51.8	---	68.2	16.4	H
17792.7	---	42.5	54.0	11.4	H
17792.7	54.9	---	74.0	19.1	V
25780.3	48.3	---	68.2	19.9	V

**Radiated Spurious – CH115**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5220.0	52.8	---	68.2	15.4	H
17824.8	---	42.6	54.0	11.4	H
17824.8	54.1	---	74.0	19.9	H
26100.0	47.3	---	68.2	20.9	V

**Radiated Spurious – CH227**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5667.5	53.8	---	68.2	14.4	H
14134.4	54.5	---	68.2	13.7	H
28342.3	48.7	---	68.2	19.5	V

**1 GHz – 40 GHz, 802.11ax40, HE0, Chain A+B**
**Radiated Spurious – CH3**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4771.6	51.3	---	74.0	22.7	V
4771.6	---	42.7	54.0	11.3	H
17802.6	---	42.5	54.0	11.5	V
17802.6	54.5	---	74.0	19.6	H
23859.8	---	37.3	54.0	16.7	V
23860.3	47.7	---	74.0	26.3	H

**Radiated Spurious – CH99**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5155.9	54.4	---	68.2	13.8	H
17810.6	---	42.6	54.0	11.4	V
17810.6	54.7	---	74.0	19.3	H
25780.3	48.3	---	68.2	19.9	V

**Radiated Spurious – CH115**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5219.5	54.1	---	68.2	14.1	H
17773.8	---	41.9	54.0	12.1	V
17773.8	55.2	---	74.0	18.8	H
26105.2	49.0	---	68.2	19.2	V

**Radiated Spurious – CH227**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5667.9	57.6	---	68.2	10.6	H
14133.9	52.3	---	68.2	15.9	H
28339.9	47.5	---	68.2	20.7	V

802.11ax80

**1 GHz – 40 GHz, 802.11ax80, HE0, Chain A**

**Radiated Spurious – CH7**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4787.8	---	41.6	54.0	12.4	H
4787.8	51.1	---	74.0	22.9	H
17936.2	---	42.4	54.0	11.6	V
17936.2	54.9	---	74.0	19.1	V
39557.4	---	44.6	54.0	9.4	H
39557.4	56.3	---	74.0	17.7	V

**Radiated Spurious – CH103**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5134.6	53.7	---	74.0	20.3	H
5134.6	---	43.9	54.0	10.2	H
5171.6	52.6	---	68.2	15.6	H
12855.1	51.8	---	68.2	16.4	H
25860.1	48.9	---	68.2	19.4	V

**Radiated Spurious – CH135**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5299.7	54.3	---	68.2	13.9	H
13173.4	49.4	---	68.2	18.9	H
19760.4	---	36.5	54.0	17.5	V
19760.9	46.2	---	74.0	27.8	H
26500.0	49.0	---	68.2	19.2	V

### Radiated Spurious – CH215

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5620.0	55.4	---	68.2	12.8	H
17775.7	---	42.2	54.0	11.8	V
17775.7	54.6	---	74.0	19.4	V
28102.6	49.7	---	68.2	18.5	V

### 1 GHz – 40 GHz, 802.11ax80, HE0, Chain B

#### Radiated Spurious – CH7

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4749.4	---	41.9	54.0	12.1	H
4749.4	52.5	---	74.0	21.5	V
4787.8	---	43.4	54.0	10.6	V
4788.2	51.8	---	74.0	22.2	V
17841.3	54.0	---	74.0	20.0	V
17841.3	---	43.6	54.0	10.4	H
23940.1	47.4	---	74.0	26.6	V
23940.1	---	38.2	54.0	15.8	V

#### Radiated Spurious – CH103

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5172.1	52.0	---	68.2	16.2	H
17795.5	---	42.9	54.0	11.1	V
17795.5	54.5	---	74.0	19.5	V
25860.1	49.7	---	68.2	18.5	V

### Radiated Spurious – CH135

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5261.8	54.1	---	68.2	14.1	H
5299.7	55.5	---	68.2	12.7	H
17848.4	---	42.0	54.0	12.0	V
17848.4	55.0	---	74.0	19.0	V
26500.0	48.9	---	68.2	19.3	V

### Radiated Spurious – CH215

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5620.4	54.5	---	68.2	13.8	H
17811.1	---	42.5	54.0	11.5	H
17811.1	54.8	---	74.0	19.2	V
28100.2	48.1	---	68.2	20.1	V

### 1 GHz – 40 GHz, 802.11ax80, HE0, Chain A+B

### Radiated Spurious – CH7

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
4787.8	---	47.1	54.0	<b>6.9</b>	H
4788.2	52.2	---	74.0	21.8	H
17771.0	54.7	---	74.0	19.3	H
17771.0	---	42.1	54.0	11.9	V
23940.1	47.7	---	74.0	26.3	V
23940.1	---	38.1	54.0	15.9	V

### Radiated Spurious – CH103

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5133.3	53.4	---	74.0	20.6	H
5133.7	---	42.0	54.0	12.0	H
5172.1	55.0	---	68.2	13.2	H
17976.9	---	42.7	54.0	11.3	V
17976.9	55.7	---	74.0	18.3	V
25859.7	49.2	---	68.2	18.9	H

### Radiated Spurious – CH135

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5299.7	56.5	---	68.2	11.7	H
17796.9	---	42.7	54.0	11.3	H
17796.9	55.2	---	74.0	18.8	H
26500.0	48.6	---	68.2	19.6	H

### Radiated Spurious – CH215

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5620.0	57.4	---	68.2	10.8	H
13974.3	50.2	---	68.2	18.0	H
28116.1	50.0	---	68.2	18.2	V

802.11ax160

**1 GHz – 40 GHz, 802.11ax160, HE0, Chain A**

**Radiated Spurious – CH15**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4820.0	51.9	---	74.0	22.1	V
4820.0	---	43.5	54.0	10.5	H
17805.4	---	42.7	54.0	11.3	H
17805.4	55.0	---	74.0	19.0	H
39477.8	56.3	---	74.0	17.7	H
39478.3	---	45.4	54.0	8.6	H

**Radiated Spurious – CH111**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5125.4	---	45.1	54.0	8.8	H
5125.9	55.6	---	74.0	18.4	H
5204.3	53.2	---	68.2	15.0	H
7727.1	55.6	---	74.0	18.4	H
7727.9	---	47.8	54.0	6.2	H
17811.1	---	42.6	54.0	11.4	V
17811.1	55.1	---	74.0	18.9	H
26020.2	49.0	---	68.2	19.2	V

**Radiated Spurious – CH143**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
5332.0	55.3	---	68.2	12.9	H
7921.0	56.2	---	68.2	12.0	V
17814.4	---	42.3	54.0	11.7	V
17814.4	54.7	---	74.0	19.3	V
39722.8	---	44.5	54.0	9.5	H
39723.2	56.6	---	74.0	17.4	H

### Radiated Spurious – CH207

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5587.7	56.1	---	68.2	12.1	H
13814.7	52.2	---	68.2	16.0	H
27939.2	47.9	---	68.2	20.3	V

### 1 GHz – 40 GHz, 802.11ax160, HE0, Chain B

#### Radiated Spurious – CH15

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
4742.4	---	42.9	54.0	11.1	V
4742.4	51.7	---	74.0	22.3	V
4820.0	---	43.9	54.0	10.1	H
4823.0	53.5	---	74.0	20.6	V
5635.2	54.6	---	68.2	13.6	H
5791.6	62.3	---	68.2	5.9	H
17841.3	54.4	---	74.0	19.6	V
17841.3	---	44.1	54.0	9.9	V
24101.6	47.2	---	68.2	21.1	V

#### Radiated Spurious – CH111

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5204.3	54.2	---	68.2	14.0	H
17836.6	---	42.5	54.0	11.5	V
17836.6	54.9	---	74.0	19.1	H
26020.2	48.2	---	68.2	20.0	V



### Radiated Spurious – CH143

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5254.4	53.9	---	68.2	14.3	H
5332.0	54.9	---	68.2	13.3	H
7919.7	55.9	---	68.2	12.3	H
17795.5	---	42.7	54.0	11.3	V
17795.5	54.6	---	74.0	19.4	H
39647.6	56.8	---	74.0	17.2	V
39648.0	---	45.1	54.0	8.9	V

### Radiated Spurious – CH207

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5510.6	53.3	---	68.2	14.9	H
5587.7	55.5	---	68.2	12.7	H
17788.4	---	42.6	54.0	11.4	H
17788.4	54.6	---	74.0	19.4	V
27939.7	47.7	---	68.2	20.5	V

### 1 GHz – 40 GHz, 802.11ax160, HE0, Chain A+B

### Radiated Spurious – CH15

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
4820.0	53.4	---	74.0	20.6	H
4820.0	---	48.6	54.0	5.4	H
5637.4	56.9	---	68.2	11.3	H
5792.1	57.2	---	68.2	11.0	H
17805.0	---	43.1	54.0	10.9	V
17805.0	54.7	---	74.0	19.3	H
39629.7	---	45.1	54.0	8.9	V
39629.7	56.3	---	74.0	17.7	V

### Radiated Spurious – CH111

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5125.9	54.0	---	74.0	20.0	H
5126.3	---	43.0	54.0	10.0	H
5203.9	55.7	---	68.2	12.5	H
7727.5	55.2	---	74.0	18.8	H
7727.5	---	46.6	54.0	7.4	H
17803.6	---	42.8	54.0	11.2	H
17803.6	54.9	---	74.0	19.1	H
26020.2	48.1	---	68.2	20.1	V

### Radiated Spurious – CH143

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5254.4	53.6	---	68.2	14.6	H
5332.0	55.9	---	68.2	12.3	H
7924.9	56.7	---	68.2	11.5	H
17764.8	54.2	---	74.0	19.8	V
17764.8	---	41.9	54.0	12.1	V
27497.1	49.0	---	68.2	19.2	V

### Radiated Spurious – CH207

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dB $\mu$ V/m	dB $\mu$ V/m	dB $\mu$ V/m	dB	---
5587.7	56.8	---	68.2	11.4	H
17987.2	---	43.2	54.0	10.8	V
17987.2	55.6	---	74.0	18.4	V
27957.0	49.3	---	68.2	18.9	V