UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-U7PROXS
ISED ID	6545A-U7PROXS
Equipment Under Test	U7-Pro-XGS
Test Report Serial Number	TR9751_02
Date of Test(s)	20, 23 December 2024; 6, 16, January; 5 February 2025
Report Issue Date	6 February 2025

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.

NVLAP TESTING ilac-MRA

NVLAP LAB CODE 600241-0

Certification of Engineering Report

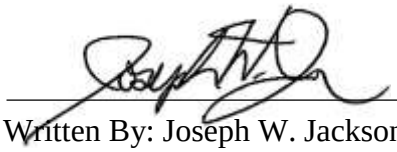
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested with the specifications provided by the manufacturer.

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	U7-Pro-XGS
FCC ID	SWX-U7PROXS
ISED ID	6545A-U7PROXS

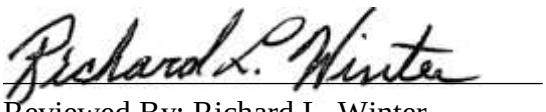
On this 6th day of February 2025, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith. Unified Compliance laboratory is not responsible for incorrect information provided by the manufacturer.

Although NVLAP has accredited the Unified Compliance Laboratory testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. federal government.

Unified Compliance Laboratory



Written By: Joseph W. Jackson



Reviewed By: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	6 February 2025
02	Amend FCC ID on Title Page	17 February 2025

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1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UBIQUITI
Model Number	U7-Pro-XGS
Serial Number	DA65B3
Dimensions (cm)	21.5 x 21.5 x 3.3

2.2 Description of EUT

The U7-Pro-XGS is a WiFi7 access point with 2.4 GHz, 6 GHz 2x2 and 5 GHz 4x4 transmitters. The U7-Pro-XGS has an aggregate throughput rate of 15.1 Gbps. The U7-Pro-XGS is powered by an 802.3at PoE power adapter.

Band	WiFi Mode	Modulation Bandwidth	Modulation Type	Frequency (MHz)
UNII-1	a	20 MHz	OFDM	5180, 5200, 5210, 5240
	ax	20 MHz	HE	5180, 5200, 5210, 5240
	ax	40 MHz	HE	5190, 5230
	ax	80 MHz	HE	5210

This report covers the circuitry of the device subject to FCC Part 15, Subpart E. The circuitry of the device subject to FCC Part 15 Subpart B was found to be compliant and is covered under a separate Unified Compliance Laboratory test report.

2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: UBIQUITI MN: U7-Pro-XGS (Note 1) SN: DA65B3	Wireless Access Point	See Section 2.4
BN: UBIQUITI MN: U-POE-at SN: N/A	PoE Injector	PoE Output / Shielded Cat 5E/ unshielded Cat 5E to AE
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	LAN Port / Un-shielded Cat 5e cable (Note 2)

Notes: (1) EUT

(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

2.4 Interface Ports on EUT

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
PoE Input	1	7m Shielded Cat 5E
PoE Output (PoE Injector)	1	7m Shielded Cat 5E to U7-Pro-XGS PoE Input
LAN (PoE Injector)	1	unshielded Cat 5E to Laptop PC
AC (PoE Injector)	1	3 Conductor power cord to AC mains/80cm

2.5 Operating Environment

Power Supply	120 Volts AC to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.0 – 23.6 °C
Humidity	22.1 – 28.7 %
Barometric Pressure	1012 mBar

2.6 Operating Modes

The U7-Pro-XGS was tested using test software in order to enable a constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 a/ax were investigated. All measurements are reported with the worst-case mode (802.11ax) unless otherwise stated.

2.7 EUT Exercise Software

EUT firmware version 1.0 was used to operate the transmitter using a constant transmit mode.

2.8 Block Diagram of Test Configuration

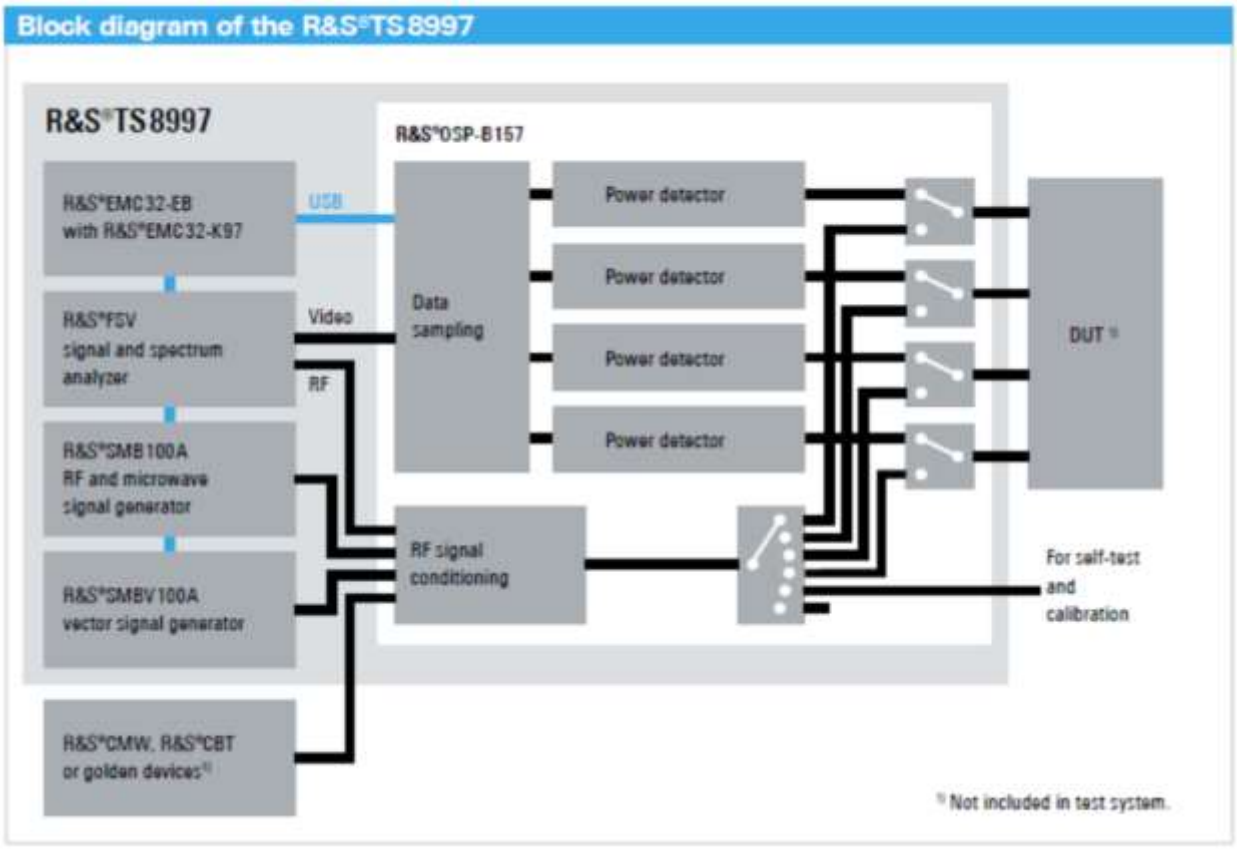


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

There were no modifications made to the EUT during testing to comply with the specification.

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

There were no deviations, opinions, additional information or interpretations from the test specification.

3 Test Specification, Method and Procedures

3.1 Test Specification

Title	47 CFR FCC Part 15, Subpart E, Section 15.407 Limits and methods of measurement of radio interference characteristics of Unlicensed National Information Infrastructure Devices
Purpose of Test	The tests were performed to demonstrate initial compliance

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.407

See test standard for details.

3.3 FCC Part 15, Subpart E

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.407(a)	N/A	Antenna requirements	Structural Requirement	Compliant
15.407(b)	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(c)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	5180 to 5210	Compliant
15.407(e)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5180 to 5210	Compliant
15.407(f)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.407(g)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(h)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5180 to 5210	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements.				

3.4 Results

In the configuration tested, the EUT complied with the requirements of the specification.

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 3-Meter and 10-Meter chambers located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2025. This site has also been registered with Innovations, Science and Economic Development (ISED) department as was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until 30 June 2025.

Unified Compliance Laboratory has been assigned Designation Number US5037 by the FCC and Conformity Assessment Number US0223 by ISED.

4 Test Equipment

4.1 Conducted Emissions at Mains Ports

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	AFJ	FFT3010	UCL-2500	8/27/2024	8/27/2025
LISN	AFJ	LS16C/10	UCL-2512	7/08/2024	7/08/2025
ISN	Teseq	ISN T800	UCL-2974	7/09/2024	7/09/2025
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	AFJ	AFJ FFT3010	UCL-3107	N/A	N/A

Table 1: List of equipment used for Conducted Emissions Testing at Mains Port

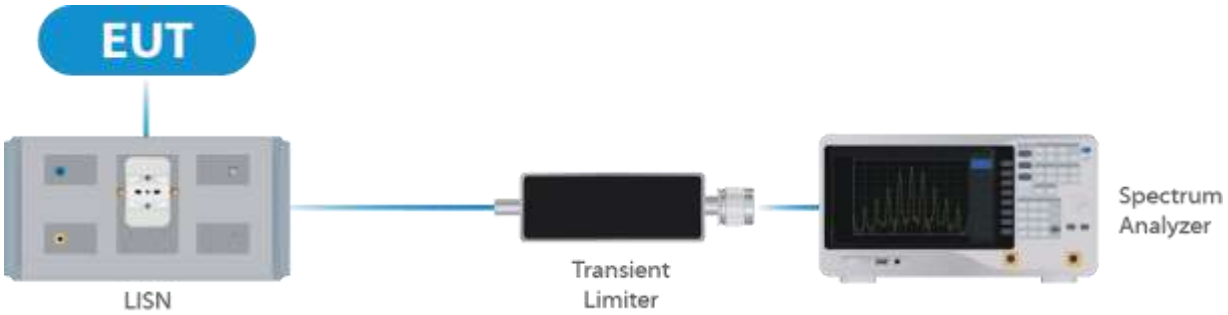


Figure 1: Conducted Emissions Test

4.2 Direct Connect at the Antenna Port Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	R&S	FSV40	UCL-2861	1/16/2025	1/16/2026
Signal Generator	R&S	SMB100A	UCL-2864	N/A	N/A
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Switch Extension	R&S	OSP-B157WX	UCL-2867	4/12/2024	4/19/2025
Switch Extension	R&S	OSP-150W	UCL-2870	4/12/2024	4/19/2025
Test Software	R&S	EMC32	UCL-9442	-	-

Table 2: List of equipment used for Direct Connect at the Antenna Port

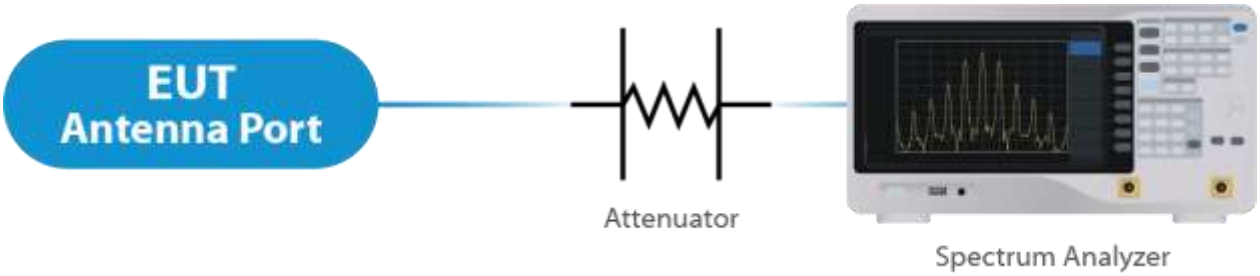


Figure 2: Direct Connect at the Antenna Port Test

Figure 3: Output Power Measurement

4.3 Radiated Emissions

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	Keysight	N9038A	UCL-2778	12/27/2024	12/27/2025
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	1/19/2024	1/19/2026
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3062	2/22/2023	2/22/2025
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	3/10/2023	3/10/2025
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	1/27/2023	1/27/2025
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	3/10/2023	3/10/2025
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	1/19/2024	1/19/2026
Test Software	Nexio	BatEMC	UCL-5253 & UCL-5249	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

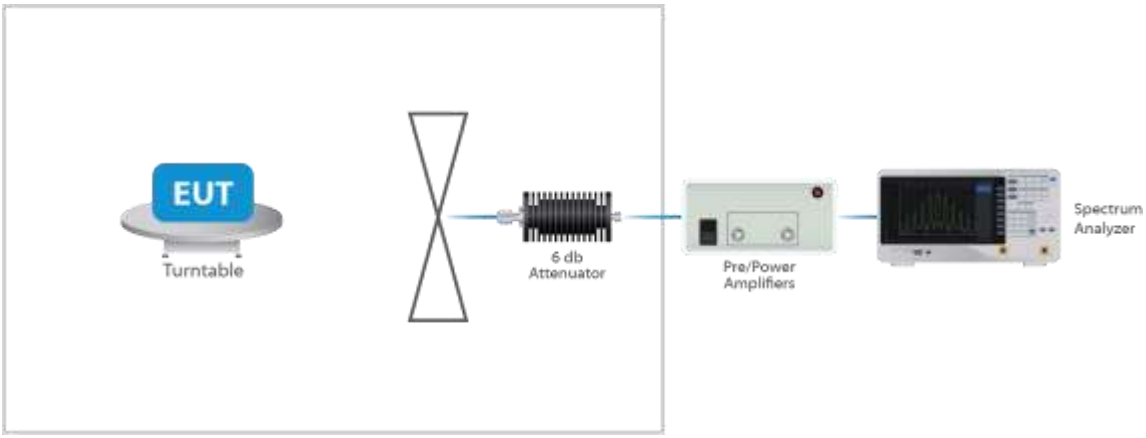


Figure 4: Radiated Emissions Test

4.4 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or Unified Compliance Laboratory personnel at intervals defined in ANSI C63.4:2014 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request.

4.5 Measurement Uncertainty

Test	Uncertainty (± dB)	Confidence (%)
Conducted Emissions	1.44	95
Radiated Emissions (9 kHz to 30 MHz)	2.50	95
Radiated Emissions (30 MHz to 1 GHz)	4.38	95
Radiated Emissions (1 GHz to 18 GHz)	4.37	95
Radiated Emissions (18 GHz to 40 GHz)	3.93	95
Direct Connect Tests	**K Factor**	**Value**
Emissions Bandwidth	2	2.0%
Output Power	2	1.0 dB
Peak Power Spectral Density	2	1.3 dB
Band Edge	2	0.8 dB
Transmitter Spurious Emissions	2	1.8 dB

5 Test Results

5.1 §15.203 Antenna Requirements

The EUT uses an internal integrated antenna. Per the manufacturer, the Maximum gain of the antenna per chain is 6 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable. For CDD transmissions, directional gain is calculated as follows.

Array Gain = 10 log(NANT/NSS) dB
NANT = number of transmit antennas and
NSS = number of spatial streams. NSS = 1 considered worst case.

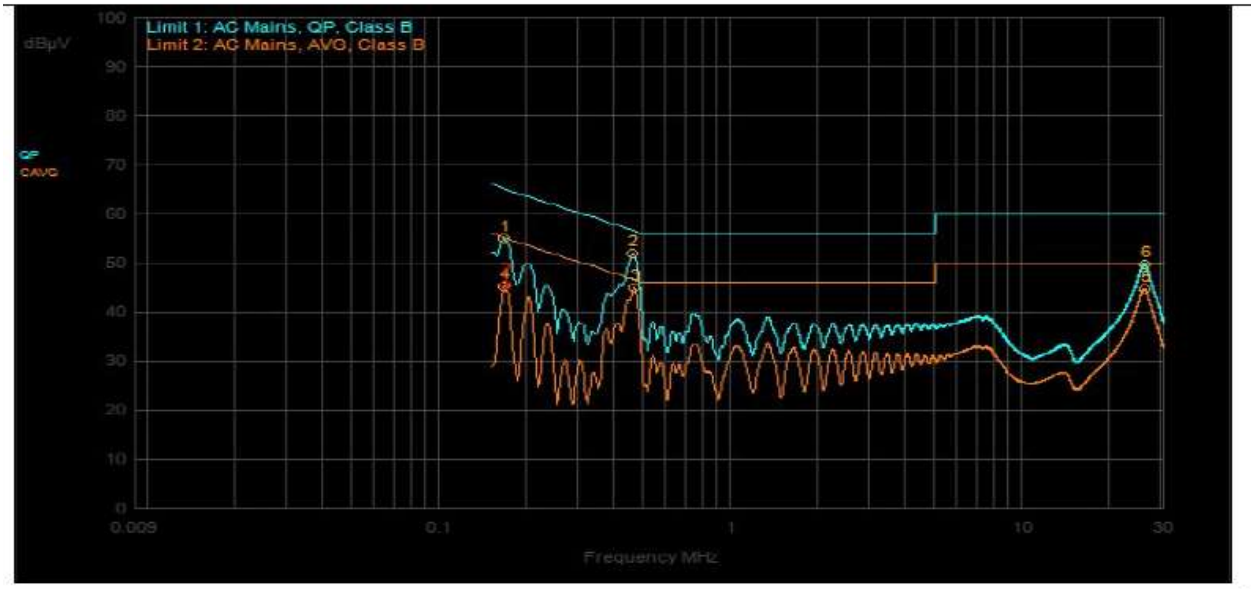
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 6 dBi = 12.02 dBi.

Results

The EUT complied with the specification

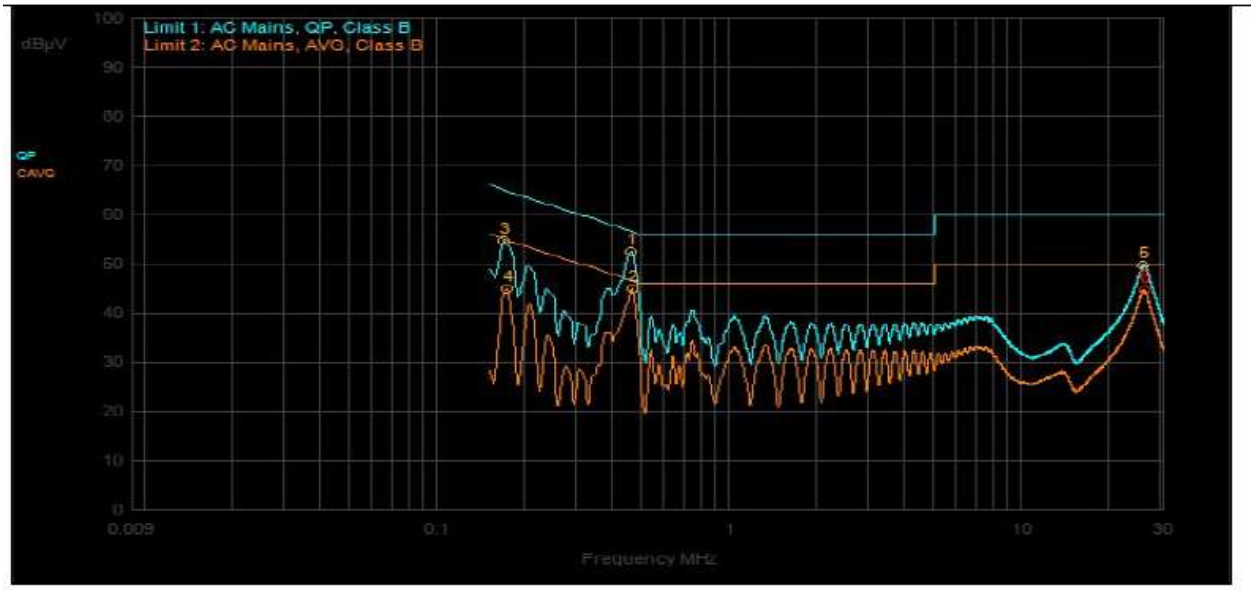
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBµV	dBµV	dBµV	dB	dBµV	dB	P/F
2	456,000kHz	9.84	0.00		QPeak	42.22	52.06	56.77	-4.70			
6	25.899	10.33	0.27		QPeak	39.15	49.75	60.00	-10.25			
1	165,000kHz	10.43	0.00		QPeak	44.49	54.92	65.21	-10.29			
3	462,000kHz	9.83	0.00		C_AVG	35.13	44.96			46.66	-1.70	
4	165,000kHz	10.43	0.00		C_AVG	34.91	45.34			55.21	-9.86	
5	25.797	10.32	0.27		C_AVG	34.18	44.77			50.00	-5.23	
7	168,000kHz	10.41	0.00		C_AVG	35.05	45.46			55.06	-9.60	

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBµV	dBµV	dBµV	dB	dBµV	dB	P/F
1	456,000kHz	9.84	0.00		QPeak	42.67	52.51	56.77	-4.26			
5	25.671	10.21	0.27		QPeak	39.29	49.77	60.00	-10.23			
3	168,000kHz	10.41	0.00		QPeak	44.25	54.66	65.06	-10.40			
2	459,000kHz	9.84	0.00		C_AVG	35.24	45.08			46.71	-1.63	
4	171,000kHz	10.38	0.00		C_AVG	34.54	44.92			54.91	-9.99	
6	25.782	10.21	0.27		C_AVG	34.20	44.68			50.00	-5.32	

Result

The EUT complied with the specification limit.

5.3 §15.403(i) 26 dB Emissions Bandwidth

All chains were measured under the guidance of KDB 789033 Section II.C. and KDB 662911 D01. Please see associated annex for details on instrument settings.

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
OFDM 20	5180	17.3	20.1
OFDM 20	5210	17.3	20.7
OFDM 20	5240	17.5	24.5
HE 20	5180	19.5	22.5
HE 20	5210	19.8	39.0
HE 20	5240	19.8	37.7
HE 40	5190	38.5	43.4
HE 40	5230	38.5	43.8
HE 80	5210	79.0	93.5

Result

All chains were tested and the highest bandwidth per chain is reported above.

The 26 dB bandwidths are reported for information purposes. Please see Annex for all bandwidth measurements.

5.4 §15.407(a)(2) Maximum Average Output Power

All chains were measured and summed under the guidance of KDB 789033 Section II. E.2. and KDB 662911 D01. Please see associated annex for details on instrument settings.
The maximum average RF conducted output power measured for this device was 29.31 dBm or 853.10 mW. The limit is 30 dBm, or 1 Watt when using an antenna with 23 dBi (Fixed point to point) or 6 dBi (indoor/outdoor access point) or less gain. The antenna has a gain of 6 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured EIRP	Measured PSD
OFDM 20	5180	Mcs0_Nss4	19	24.27	30.27	12.30
OFDM 20	5210	Mcs0_Nss4	21	26.26	32.26	16.79
OFDM 20	5240	Mcs0_Nss4	23	27.86	33.86	16.59
HE 20	5180	Mcs0_Nss4	20	24.98	30.98	12.41
HE 20	5210	Mcs0_Nss4	25	29.31	35.31	16.79
HE 20	5240	Mcs0_Nss4	26	29.17	35.17	16.59
HE 40	5190	Mcs0_Nss4	19	23.80	29.80	8.33
HE 40	5230	Mcs0_Nss4	22	26.79	32.79	11.40
HE 80	5210	Mcs0_Nss4	20	24.63	30.63	6.04

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured EIRP	Measured PSD
OFDM 20	5180	Mcs0_Nss1	17	22.27	28.27	10.30
OFDM 20	5210	Mcs0_Nss1	15	20.26	26.26	10.79
OFDM 20	5240	Mcs0_Nss1	17	21.86	27.86	10.59
HE 20	5180	Mcs0_Nss1	18	22.98	28.98	10.41
HE 20	5210	Mcs0_Nss1	19	23.31	29.31	10.79
HE 20	5240	Mcs0_Nss1	20	23.17	29.17	10.59
HE 40	5190	Mcs0_Nss1	19	23.80	29.80	8.33
HE 40	5230	Mcs0_Nss1	21	25.79	31.79	10.40
HE 80	5210	Mcs0_Nss1	20	24.63	30.63	6.04

CANADA (Indoor Use Only)

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured EIRP	Measured PSD
OFDM 20	5180	Mcs0-Nss4	10	15.42	21.42	3.26
OFDM 20	5210	Mcs0-Nss4	11	16.25	22.25	3.80
OFDM 20	5240	Mcs0-Nss4	11	16.05	22.05	3.55
HE 20	5180	Mcs0-Nss4	11	16.46	22.46	3.33
HE 20	5210	Mcs0-Nss4	11	16.33	22.33	3.20
HE 20	5240	Mcs0-Nss4	11	16.15	22.15	3.01
HE 40	5190	Mcs0-Nss4	11	16.28	22.28	0.07
HE 40	5230	Mcs0-Nss4	11	16.21	22.21	0.06
HE 80	5210	Mcs0-Nss4	11	16.10	22.10	-3.05

Result

In the configuration tested, the maximum summed average RF output power was less than 1 watt; therefore, the EUT compiled with the requirements of the specification (see spectrum analyzer plots in attached Annex).

5.5 §15.407(b) Spurious Emissions

5.5.1 Conducted Spurious Emissions

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental frequency was investigated to measure any antenna-conducted emissions. The graphs show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown below are plots with the EUT turned to the upper and lower channels with the antenna gain of 6 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must be remain below -27 dBm EIRP.

Result

Conducted spurious emissions were below -27 dBm; therefore, the EUT complies with the specification.

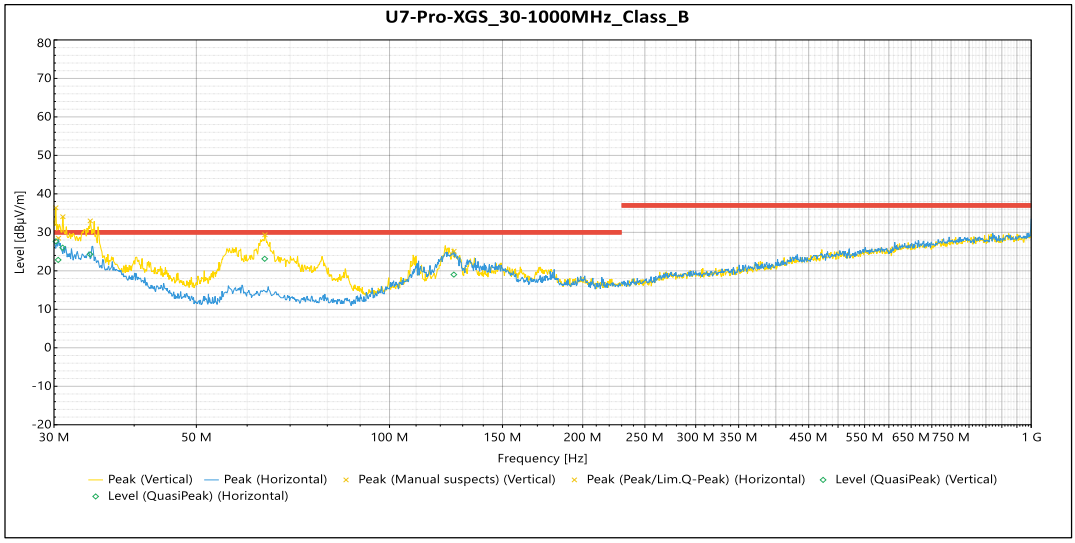
5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205

The EUT uses various power settings based on the channel in use. In order to reduce test time, the radiated spurious emissions at the lowest, middle, and highest channel were measured at the maximum power of TP31, as this setting was found to be worst case for spurious emissions. Power was subsequently reduced during in-band and band edge testing. The band edge at the restricted band ending at 5180 MHz was measured using radiated measurement or conducted at the antenna port methods. All emissions modes were tested, and the worst-case measurement are shown below. For frequencies above 1 GHz, a measurement of 3 meters was used. For frequencies below 1 GHz, a measurement distance of 10 meters was used.

Correction Factor = Antenna Factor (dBi) + Cable Loss (dB) - Pre-Amplifier Gain (dB), and is added to the Receiver reading.

Result

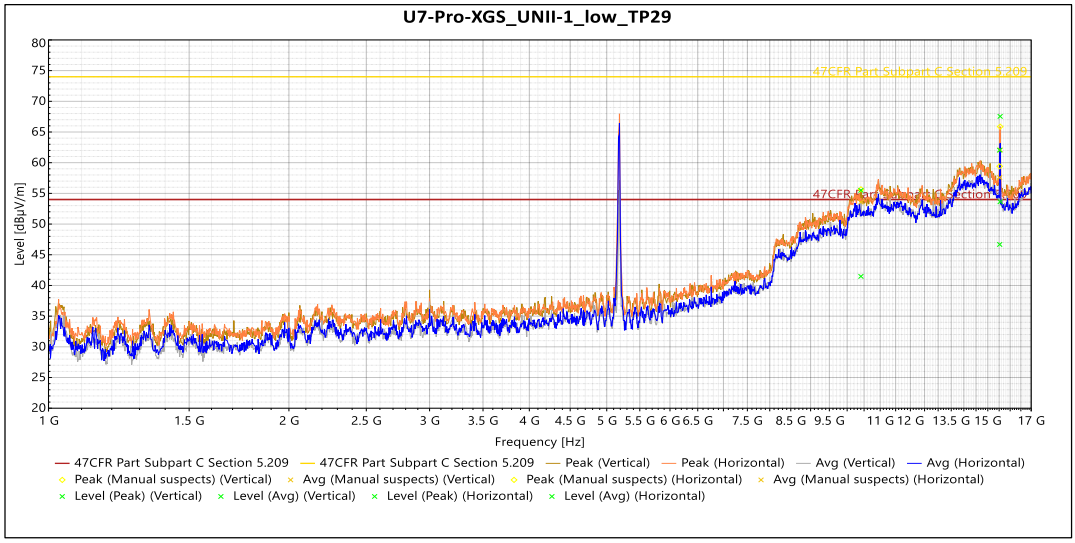
All emissions in the restricted bands of § 15.205 met the limits specified in § 15.209; therefore, the EUT complies with the specification. All emissions me the limits specified in § 15.407(b). Representative band edge plots are included in this report. See Annex for Conducted Band edge plots.



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
30.21 MHz	27.67	30	-2.33	263	1.58	Vertical	-3.67
30.95 MHz	26.01	30	-3.99	276	1.05	Vertical	-4.26
34.15 MHz	24.29	30	-5.71	166	2.23	Vertical	-5.96
63.90 MHz	23.12	30	-6.88	60	2.04	Vertical	-16.06
30.45 MHz	22.84	30	-7.16	320	1.99	Horizontal	-3.86
125.97 MHz	19.02	30	-10.98	176	3.95	Horizontal	-9.94

Table 4: Radiated Emissions 30 – 1000 MHz



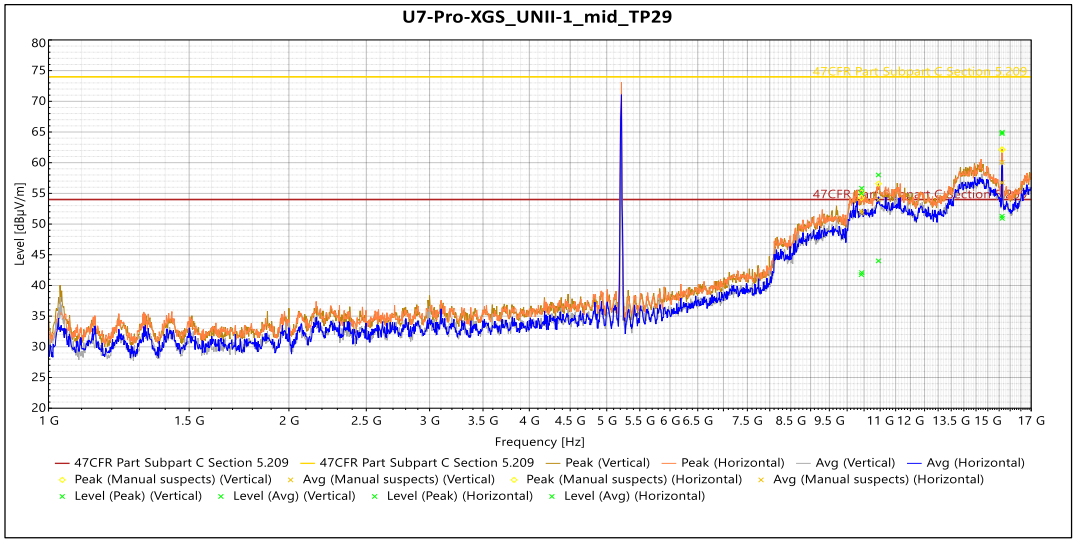
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.41 GHz	55.49	74.0	-18.51	188	1.632	Vertical	9.70
15.52 GHz	62.04	74.0	-11.96	57	1.63	Vertical	12.21
15.55 GHz	67.54	74.0	-6.46	64	1.628	Horizontal	12.02

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.41 GHz	41.48	54.0	-12.52	188	1.632	Vertical	9.70
15.52 GHz	46.68	54.0	-7.32	57	1.63	Vertical	12.21
15.55 GHz	53.64	54.0	-0.36	64	1.628	Horizontal	12.02

Table 5: Radiated Emissions 1 – 17 GHz at the Lowest Frequency



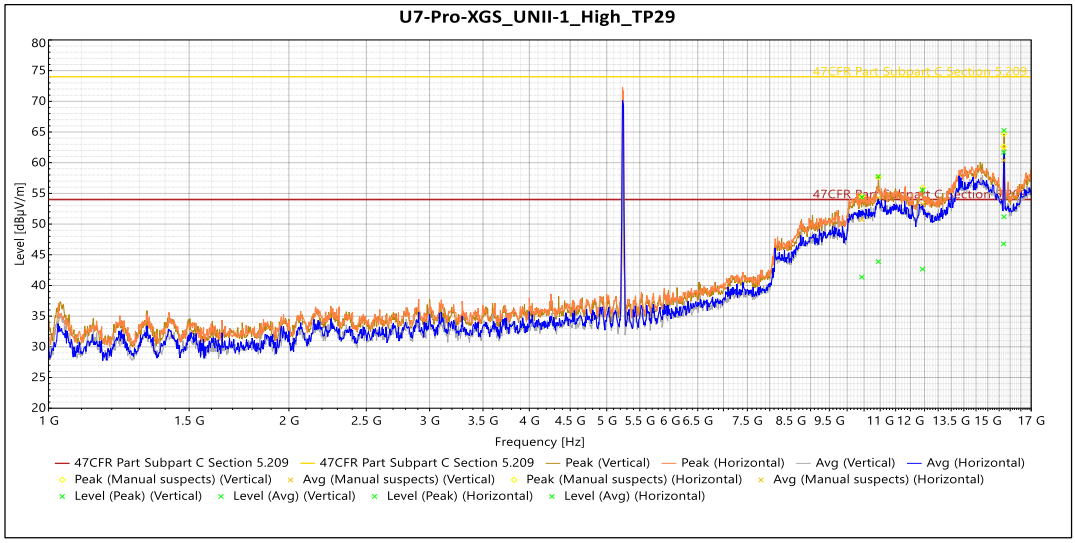
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.42 GHz	55.02	74.0	-18.98	16	3.81	Vertical	9.72
10.94 GHz	58.00	74.0	-16.00	40	3.317	Vertical	12.02
15.63 GHz	64.73	74.0	-9.27	67	1.632	Vertical	11.32
10.43 GHz	55.83	74.0	-18.17	90	3.645	Horizontal	9.74
15.64 GHz	64.96	74.0	-9.04	67	1.631	Horizontal	11.28

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.42 GHz	41.76	54.0	-12.24	16	3.81	Vertical	9.72
10.94 GHz	44.00	54.0	-10.00	40	3.317	Vertical	12.02
15.63 GHz	51.28	54.0	-2.72	67	1.632	Vertical	11.32
10.43 GHz	42.09	54.0	-11.91	90	3.645	Horizontal	9.74
15.64 GHz	50.93	54.0	-3.07	67	1.631	Horizontal	11.28

Table 6: Radiated Emissions 1 – 17 GHz at the Middle Frequency



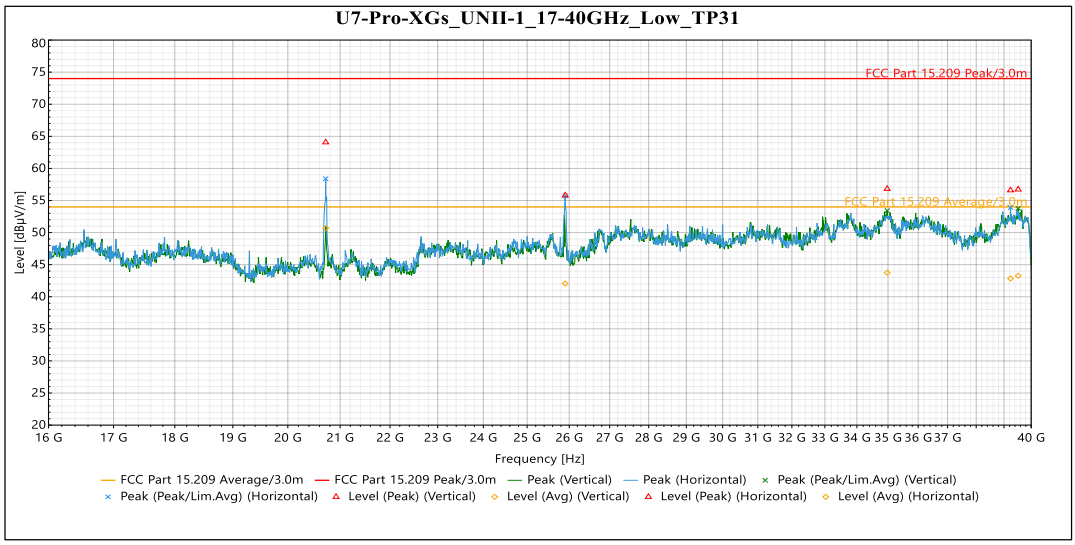
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.43 GHz	54.40	74.0	-19.60	3	2.827	Vertical	9.74
10.94 GHz	57.74	74.0	-16.26	163	3.809	Vertical	12.07
12.43 GHz	55.55	74.0	-18.45	348	3.14	Vertical	11.15
15.72 GHz	65.24	74.0	-8.76	68	1.632	Vertical	11.06
15.70 GHz	61.69	74.0	-12.31	66	2.134	Horizontal	11.05

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.43 GHz	41.36	54.0	-12.64	3	2.827	Vertical	9.74
10.94 GHz	43.88	54.0	-10.12	163	3.809	Vertical	12.07
12.43 GHz	42.65	54.0	-11.35	348	3.14	Vertical	11.15
15.72 GHz	51.20	54.0	-2.80	68	1.632	Vertical	11.06
15.70 GHz	46.78	54.0	-7.22	66	2.134	Horizontal	11.05

Table 7: Radiated Emissions 1 – 17 GHz at the Highest Frequency



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
34.97 GHz	56.82	74.0	-17.18	258	Vertical	5.08
39.52 GHz	56.72	74.0	-17.28	284	Vertical	3.37
20.72 GHz	64.07	74.0	-9.93	345	Horizontal	-0.92
25.90 GHz	55.80	74.0	-18.20	8	Horizontal	1.93
39.24 GHz	56.59	74.0	-17.41	30	Horizontal	3.12

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
34.97 GHz	43.74	54.0	-10.26	258	Vertical	5.08
39.52 GHz	43.27	54.0	-10.73	284	Vertical	3.37
20.72 GHz	50.69	54.0	-3.31	345	Horizontal	-0.92
25.90 GHz	42.07	54.0	-11.93	8	Horizontal	1.93
39.24 GHz	42.85	54.0	-11.15	30	Horizontal	3.12

Table 8: Radiated Emissions 17 – 40 GHz at the Lowest Frequency (worse case)

Plot 1: Band Edge OFDM 20 5180MHz

Plot 2: Band Edge OFDM 20 5210MHz

Plot 3: Band Edge OFDM 20 5240MHz

Plot 4: Band Edge HE 20 5180MHz

Plot 5: Band Edge HE 20 5210MHz

Plot 6: Band Edge HE 20 5240MHz

Plot 7: Band Edge HE 40 5190MHz

Plot 8: Band Edge HE 40 5230MHz

Plot 9: Band Edge HE 80 5210MHz

5.6 §15.407(a) Maximum Power Spectral Density

All chains were measured and summed under the guidance of KDB 789033 Section II. F. and KDB 662911 D01. Please see associated annex for details on instrument settings.

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 17 dBm in any 1 MHz band during any time interval of continuous transmission.

As per KDB 662911, When the EUT is using spatial-multiplexing in HE modes, there is not additional array gain to accommodate. When the EUT uses Nss=1 data rates, the antenna gain is 6 dBi + Array gain of 6.02 dB which is a total of 12.02 dBi.

Results of this testing are summarized.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5180	Mcs0_Nss4	19	24.27	12.30
OFDM 20	5210	Mcs0_Nss4	21	26.26	16.79
OFDM 20	5240	Mcs0_Nss4	23	27.86	16.59
HE 20	5180	Mcs0_Nss4	20	24.98	12.41
HE 20	5210	Mcs0_Nss4	25	29.31	16.79
HE 20	5240	Mcs0_Nss4	26	29.17	16.59
HE 40	5190	Mcs0_Nss4	19	23.80	8.33
HE 40	5230	Mcs0_Nss4	22	26.79	11.40
HE 80	5210	Mcs0_Nss4	20	24.63	6.04

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5180	Mcs0_Nss1	17	22.27	10.30
OFDM 20	5210	Mcs0_Nss1	15	20.26	10.79
OFDM 20	5240	Mcs0_Nss1	17	21.86	10.59
HE 20	5180	Mcs0_Nss1	18	22.98	10.41
HE 20	5210	Mcs0_Nss1	19	23.31	10.79
HE 20	5240	Mcs0_Nss1	20	23.17	10.59
HE 40	5190	Mcs0_Nss1	19	23.80	8.33
HE 40	5230	Mcs0_Nss1	21	25.79	10.40

HE 80	5210	Mcs0_Nss1	20	24.63	6.04

Result

The maximum summed average power spectral density was less than the limit of 17dBm (adjusted limit of 10.98 dBm for Nss1); therefore, the EUT complies with the specification.

-- End of Test Report --