UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-E7CP
ISED ID	6545A-E7CP
Equipment Under Test	E7-Campus
Test Report Serial Number	TR9552_01
Date of Test(s)	8, 17 – 24 and 31 May 2024
Report Issue Date	26 November 2024

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.

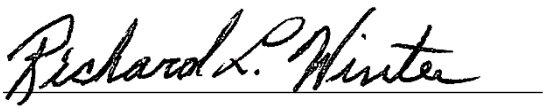
Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	E7-Campus
FCC ID	SWX-E7CP
ISED ID	6545A-E7CP

On this 26th day of November 2024, 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.

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: Clay Allred



Reviewed By: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	26 November 2024

Table of Contents

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	E7-Campus
Serial Number	F4E2C61FFB30
Dimensions (cm)	25.0 x 25.0 x 4.6

2.2 Description of EUT

The E7-Campus is a WiFi 7 access point with (1) 10GbE PoE port and (1) 1GbE PoE port. The E7-Campus transmits in the 2.4 GHz, 5 GHz, and 6 GHz frequency bands using integral antennas and is powered by an 802.3++ PoE power adapter.

This device does not support channel puncturing.

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.

The table below show the channels used within the different modulation bandwidths.

Band	Modulation Bandwidth	Frequency (MHz)	Maximum Power Setting
UNII-7	ax (HE20)	6535, 6555, 6575, 6595, 6615, 6635, 6655, 6675, 6695, 6715, 6735, 6755, 6775, 6795, 6815, 6835, 6855, 6875	TP18
	ax (HE40)	6525, 6565, 6605, 6645, 6685, 6725, 6765, 6805, 6845, 6885	TP19
	ax (HE80)	6545, 6625, 6705, 6785, 6865	TP19
	ax (HE160)	6505, 6665, 6825	TP18
	Ax (HE320)	6585	TP18

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: E7-Campus (Note 1) SN: F4E2C61FFB30	Access Point	PoE Input / Shielded Cat 5E cable
BN: UBIQUITI MN: U-POE++ SN: N/A	PoE Injector	PoE Output / Shielded Cat 5E to E7, and Ethernet / unshielded Cat 5E to PC
BN: DELL MN: XPS SN: N/A	Laptop PC	Ethernet / un-shielded Cat 5E

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 E7 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 POE 48 Volts
AC Mains Frequency	60 Hz
Temperature	21.1 – 22.3 °C
Humidity	20.8 – 26.3 %
Barometric Pressure	1012 mBar

2.6 Operating Modes

The E7-Campus 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

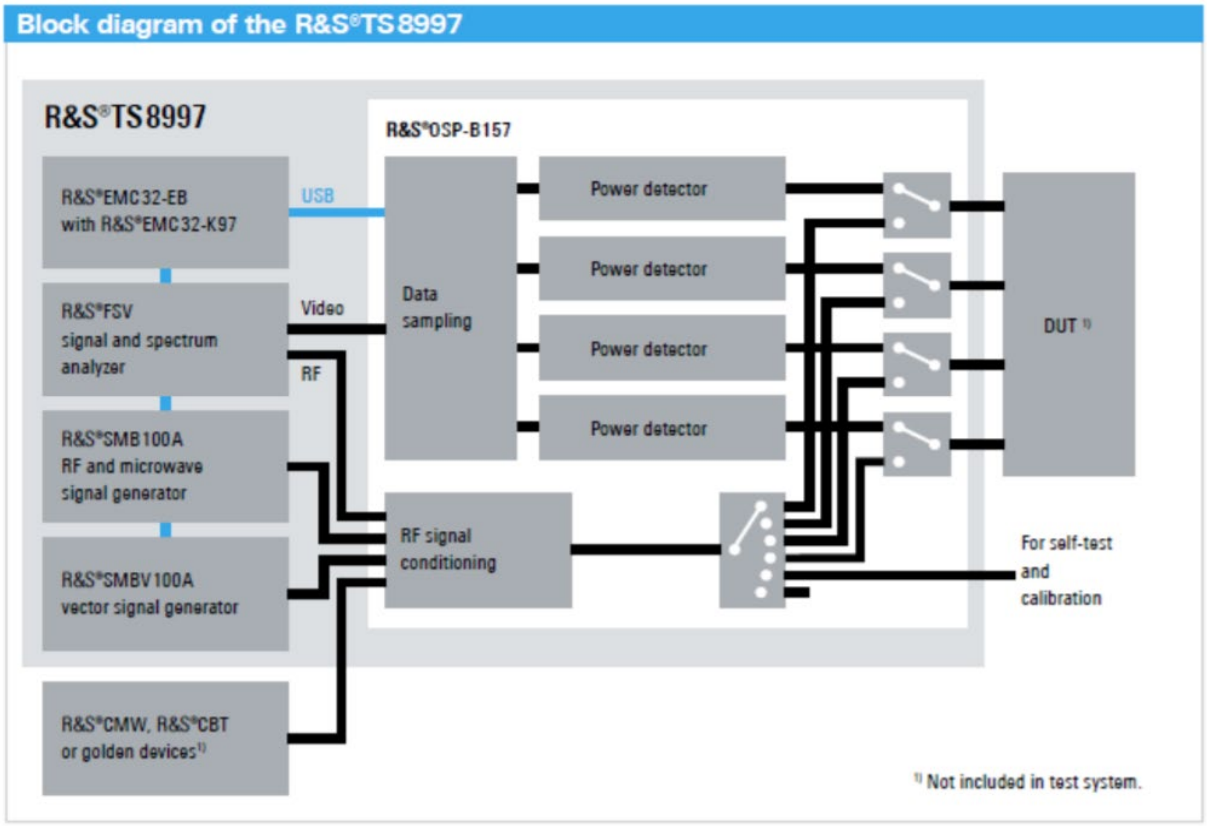


Diagram 1: Test Configuration Block Diagram

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
15.203	N/A	Antenna requirements	Structural Requirement	Compliant
15.207	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	6535 to 6865	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power[1]	6535 to 6865	Compliant
15.407(f)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions[1]	0.009 to 40000	N/A
15.407(a)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density[1]	6535 to 6865	Compliant
15.407(d)	RSS-247 §6.2.2, §6.2.3	Contention Based Protocol	6535 to 6865	N/A (outdoor device)
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033, KDB 987594 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements. Note [1]: Various RU modes were considered for RF Power, PSD, and Spurious Emissions, and the "single client" RU mode is the worst case - the results herein are "single client" RU mode.				

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 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-6754	1/23/2024	2/26/2025
LISN	AFJ	LS16C/10	UCL-2512	7/08/2024	7/08/2025
ISN	Teseq	ISN T800	UCL-2974	7/09/2024	7/09/2025
LISN	AFJ	LS16C\10	UCL-6749	1/29/2024	1/29/2025
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

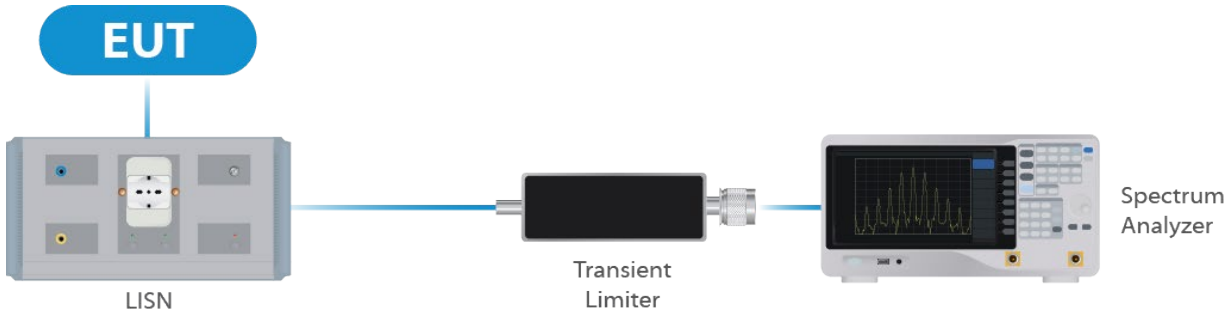


Figure 1: Conducted Emissions Test

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	11/27/2023	12/22/2024
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

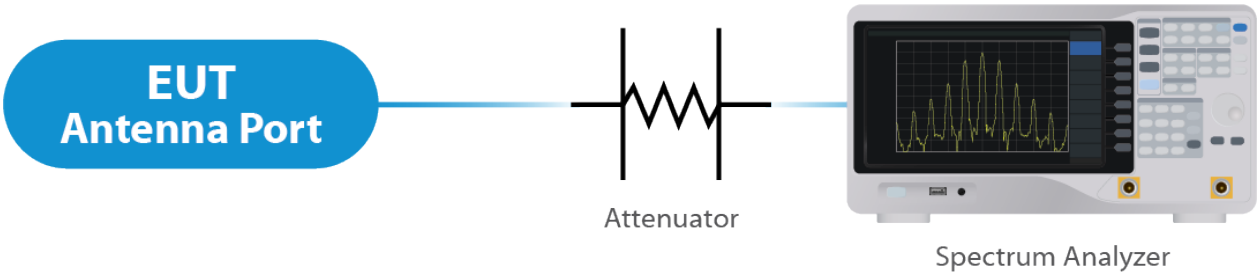


Figure 2: Direct Connect at the Antenna Port Test

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	1/25/2024	1/29/2025
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
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3071	1/11/2023	1/11/2025
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

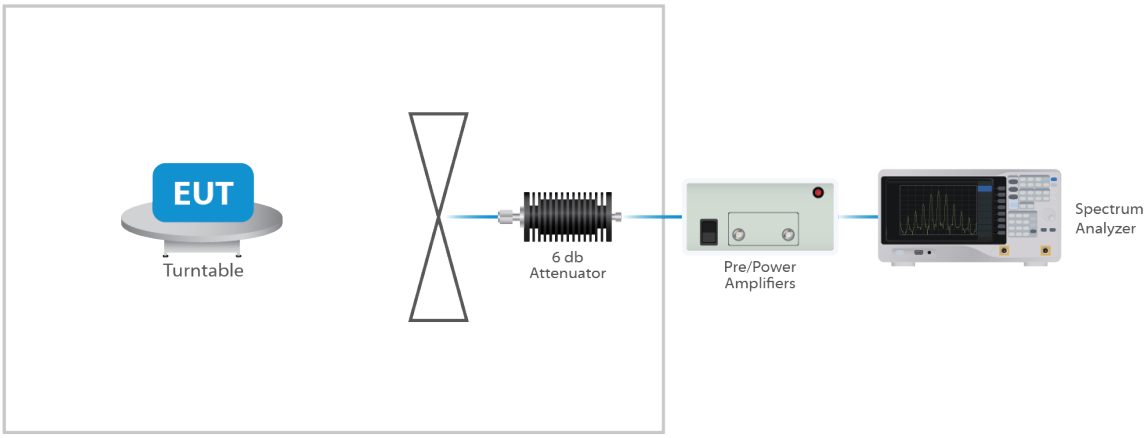


Figure 3: Radiated Emissions Test

4.4 Contention Base Protocol Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	Keysight	N9010B EXA	UCL-7069	5/3/2024	5/3/2025
Signal Generator	Keysight	MXG-B	UCL-6291	6/28/2024	6/28/2026
MIMO Test Set	Keysight	X8750A	UCL-7372	8/24/2024	10/07/2025

Table 4: List of equipment used for Direct Connect at the Antenna Port

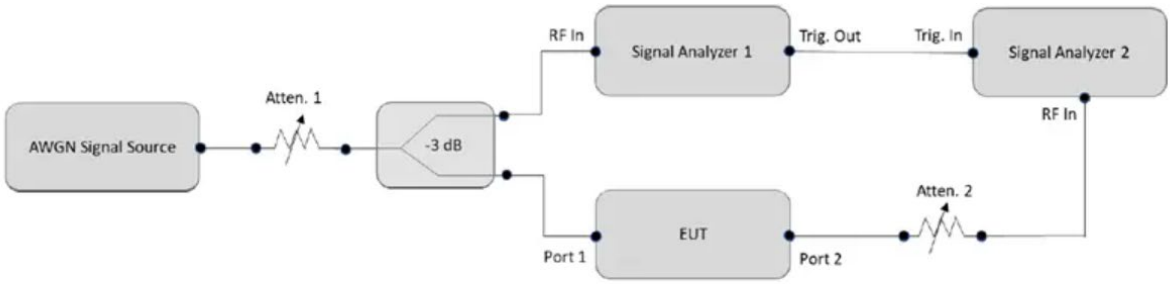


Figure 1. CBP conducted test setup diagram. Source: KDB 987594 D02 V01r01

Figure 4: Contention Base Protocol Test

4.5 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.

4.6 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 integral antenna. Per the manufacturer, the Maximum gain of the antenna per chain is 12 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.

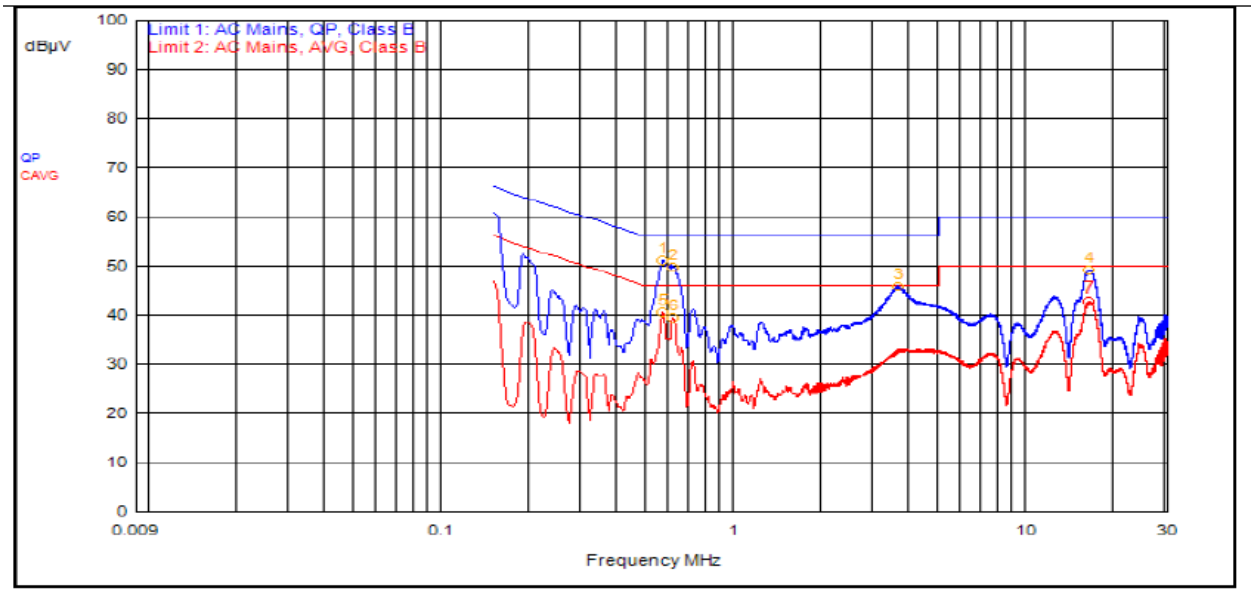
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 12 dBi = 18.02 dBi.

Results

The EUT complied with the specification

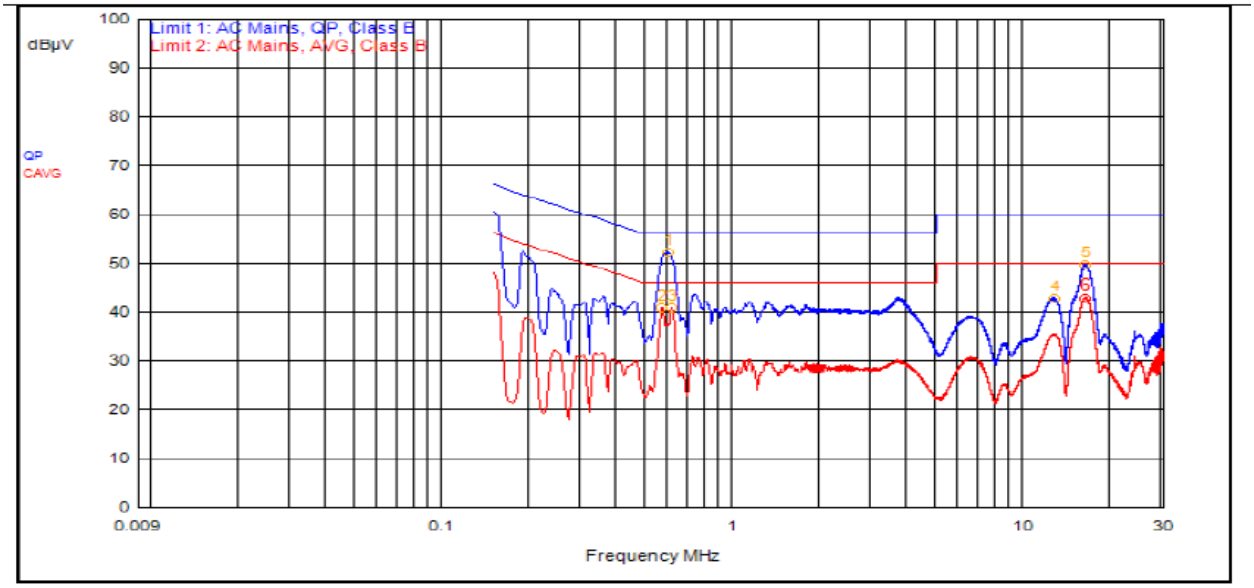
5.2 Conducted Emissions at Mains Ports Data

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
1	567,000kHz	12.40	0.00		QPeak	38.61	51.01	56.00	-4.99			
2	615,000kHz	12.38	0.00		QPeak	37.44	49.82	56.00	-6.18			
3	3.594	12.29	0.10		QPeak	33.37	45.76	56.00	-10.24			
4	16.206	12.40	0.20		QPeak	36.61	49.21	60.00	-10.79			
5	567,000kHz	12.40	0.00		C_AVG	28.23	40.63			46.00	-5.37	
6	609,000kHz	12.38	0.00		C_AVG	27.16	39.54			46.00	-6.46	
7	16.206	12.40	0.20		C_AVG	30.08	42.68			50.00	-7.32	

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	591,000kHz	12.40	0.00		QPeak	39.70	52.10	56.00	-3.90			
5	16.143	12.43	0.20		QPeak	37.04	49.67	60.00	-10.33			
4	12.678	12.40	0.20		QPeak	30.24	42.84	60.00	-17.16			
2	567,000kHz	12.41	0.00		C_AVG	28.53	40.94			46.00	-5.06	
3	612,000kHz	12.40	0.00		C_AVG	28.43	40.83			46.00	-5.17	
6	16.155	12.43	0.20		C_AVG	30.17	42.80			50.00	-7.20	

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)	26 dB Bandwidth (MHz)
20	6535	19.25	22.9
20	6695	19.25	22.2
20	6875	19.25	22.9
40	6525	38.5	43.08
40	6685	39.0	43.53
40	6885	38.5	42.63
80	6545	79.0	86.5
80	6705	79.0	87.0
80	6865	79.0	88.0
160	6505	162.5	170.0
160	6665	162.5	167.0
160	6825	160.0	168.0
320	6585	325.0	340.23

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)(3) 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 23.99 dBm or 247.17 mW. The limit is 30 dBm EIRP, or 1 watt EIRP. The antenna has a gain of 12 dBi. For NSS-1 the Array Gain = 18.02 dBi (See section 5.1).

NSS-4 Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	EIRP
HE20	6535	Mcs0_Nss4	18	22.94	34.94
HE20	6695	Mcs0_Nss4	18	23.91	35.91
HE20	6875	Mcs0_Nss4	18	22.98	34.98
HE40	6525	Mcs0_Nss4	19	23.53	35.53
HE40	6685	Mcs0_Nss4	18	23.86	35.86
HE40	6885	Mcs0_Nss4	18	23.15	35.15
HE80	6545	Mcs0_Nss4	19	23.60	35.60
HE80	6705	Mcs0_Nss4	18	23.85	35.85
HE80	6865	Mcs0_Nss4	19	23.93	35.93
HE160	6505	Mcs0_Nss4	18	23.09	35.09
HE160	6665	Mcs0_Nss4	18	23.74	35.74
HE160	6825	Mcs0_Nss4	18	23.14	35.14
HE320	6585	Mcs0_Nss4	18	23.74	35.74

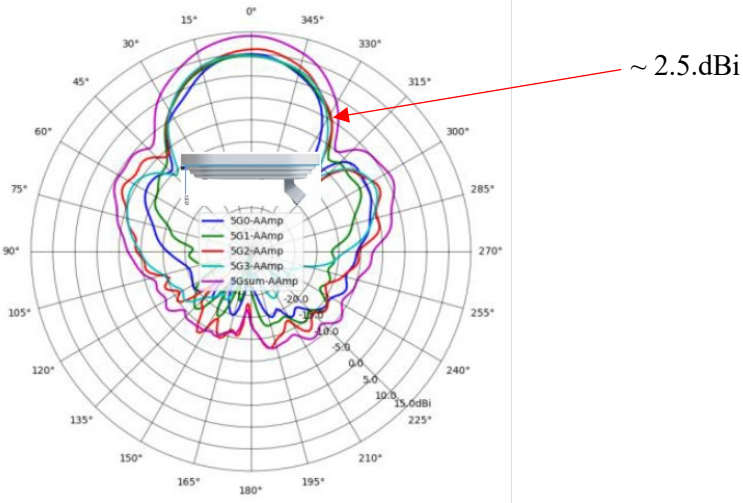
NSS-1 Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	EIRP
HE20	6535	Mcs0_Nss1	13	18.10	30.10
HE20	6695	Mcs0_Nss1	12	18.32	30.32
HE20	6875	Mcs0_Nss1	12	17.38	29.38
HE40	6525	Mcs0_Nss1	16	20.87	32.87
HE40	6685	Mcs0_Nss1	15	21.14	33.14
HE40	6885	Mcs0_Nss1	15	20.48	32.48
HE80	6545	Mcs0_Nss1	19	23.60	35.60
HE80	6705	Mcs0_Nss1	18	23.85	35.85
HE80	6865	Mcs0_Nss1	19	23.93	35.93
HE160	6505	Mcs0_Nss1	18	23.09	35.09
HE160	6665	Mcs0_Nss1	18	23.74	35.74
HE160	6825	Mcs0_Nss1	18	23.14	35.14
HE320	6585	Mcs0_Nss1	18	23.74	35.74

5.4.1 30 Degree Elevation Gain

The information in this section regarding elevation gain applies to the US (FCC) market only. At 30-degree elevation the antenna gain is approximately 2.5 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	EIRP
HE20	6535	Mcs0_Nss1	11	16.17	20.17
HE20	6695	Mcs0_Nss1	10	16.31	20.31
HE20	6875	Mcs0_Nss1	11	16.38	20.38
HE40	6525	Mcs0_Nss1	12	16.86	20.86
HE40	6685	Mcs0_Nss1	10	16.20	20.20
HE40	6885	Mcs0_Nss1	11	16.49	20.49
HE80	6545	Mcs0_Nss1	11	15.99	19.99
HE80	6705	Mcs0_Nss1	10	16.28	20.28
HE80	6865	Mcs0_Nss1	11	16.29	20.29
HE160	6505	Mcs0_Nss1	11	16.41	20.41
HE160	6665	Mcs0_Nss1	11	16.92	20.92
HE160	6825	Mcs0_Nss1	11	16.53	20.53
HE320	6585	Mcs0_Nss1	11	16.94	20.94



The antenna gain is circular and at 30 degrees it is approximately 2.5 dBi.

Figure 1: Internal Antenna Elevation Plot Greater Then 30-Degrees from Horizon

Result

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

5.5 §15.407(b)(7) 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 12 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must be remaining below -27 dBm EIRP.

Result

Conducted spurious emissions were attenuated below the limit; therefore, the EUT complies with the specification. See Annex for Conducted Band edge plots.

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 TP19.

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

Frequency	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
26.14 GHz	Pk	57.325	74	-16.675	349	1.5	Vertical	1 M	0.773
32.691 GHz	Pk	55.658	74	-18.342	26	1.5	Vertical	1 M	1.778
37.089 GHz	Pk	54.49	74	-19.51	15	1.5	Vertical	1 M	4.245
39.445 GHz	Pk	53.156	74	-20.844	178	1.5	Vertical	1 M	2.663
26.14 GHz	Av	50.369	54	-3.631	349	1.5	Vertical	1 M	0.773
32.691 GHz	Av	39.833	54	-14.167	26	1.5	Vertical	1 M	1.778
37.089 GHz	Av	36.845	54	-17.155	15	1.5	Vertical	1 M	4.245
39.445 GHz	Av	37.246	54	-16.754	178	1.5	Vertical	1 M	2.663
19.594 GHz	Pk	54.332	74	-19.668	279	1.5	Horizontal	1 M	-0.586
20.96 GHz	Pk	53.413	74	-20.587	40	1.5	Horizontal	1 M	0.342
26.14 GHz	Pk	56.111	74	-17.889	298	1.5	Horizontal	1 M	0.773
32.67 GHz	Pk	52.624	74	-21.376	347	1.5	Horizontal	1 M	1.977
19.594 GHz	Av	54.332	74	-19.668	279	1.5	Horizontal	1 M	-0.586
20.96 GHz	Av	53.413	74	-20.587	40	1.5	Horizontal	1 M	0.342
26.14 GHz	Av	56.111	74	-17.889	298	1.5	Horizontal	1 M	0.773
32.67 GHz	Av	52.624	74	-21.376	347	1.5	Horizontal	1 M	1.977

Table 5: Transmitting on the Lowest Frequency 6535 MHz

Frequency	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
20.088 GHz	Pk	56.566	74	-17.434	1	1.5	Vertical	1 M	0.376
20.96 GHz	Pk	53.893	74	-20.107	344	1.5	Vertical	1 M	0.342
26.78 GHz	Pk	52.316	74	-21.684	335	1.5	Vertical	1 M	0.289
33.473 GHz	Pk	55.146	74	-18.854	359	1.5	Vertical	1 M	2.309
20.088 GHz	Av	41.858	54	-12.142	1	1.5	Vertical	1 M	0.376
20.96 GHz	Av	46.228	54	-7.772	344	1.5	Vertical	1 M	0.342
26.78 GHz	Av	40.308	54	-13.692	335	1.5	Vertical	1 M	0.289
33.473 GHz	Av	41.234	54	-12.766	359	1.5	Vertical	1 M	2.309
20.073 GHz	Pk	53.718	74	-20.282	302	1.5	Horizontal	1 M	0.299
20.959 GHz	Pk	49.598	74	-24.402	34	1.5	Horizontal	1 M	0.325
26.78 GHz	Pk	56.288	74	-17.712	302	1.5	Horizontal	1 M	0.289
33.473 GHz	Pk	56.418	74	-17.582	359	1.5	Horizontal	1 M	2.309
20.073 GHz	Av	39.798	54	-14.202	302	1.5	Horizontal	1 M	0.299
20.959 GHz	Av	36.27	54	-17.73	34	1.5	Horizontal	1 M	0.325
26.78 GHz	Av	46.488	54	-7.512	302	1.5	Horizontal	1 M	0.289
33.473 GHz	Av	41.652	54	-12.348	359	1.5	Horizontal	1 M	2.309

Table 6: Transmitting on the Middle Frequency 6695 MHz

Frequency	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
20.96 GHz	Pk	52.48	74	-21.52	339	1.5	Vertical	1 M	0.342
27.5 GHz	Pk	54.591	74	-19.409	335	1.5	Vertical	1 M	0.872
37.88 GHz	Pk	53.311	74	-20.689	198	1.5	Vertical	1 M	3.71
39.869 GHz	Pk	53.181	74	-20.819	271	1.5	Vertical	1 M	3.339
20.96 GHz	Av	43.185	54	-10.815	339	1.5	Vertical	1 M	0.342
27.5 GHz	Av	40.667	54	-13.333	335	1.5	Vertical	1 M	0.872
37.88 GHz	Av	37.34	54	-16.66	198	1.5	Vertical	1 M	3.71
39.869 GHz	Av	37.791	54	-16.209	271	1.5	Vertical	1 M	3.339
20.637 GHz	Pk	53.534	74	-20.466	320	1.5	Horizontal	1 M	0.069
20.96 GHz	Pk	52.924	74	-21.076	353	1.5	Horizontal	1 M	0.342
27.5 GHz	Pk	52.351	74	-21.649	331	1.5	Horizontal	1 M	0.872
39.852 GHz	Pk	54.06	74	-19.94	214	1.5	Horizontal	1 M	3.234
20.637 GHz	Av	39.589	54	-14.411	320	1.5	Horizontal	1 M	0.069
20.96 GHz	Av	44.892	54	-9.108	353	1.5	Horizontal	1 M	0.342
27.5 GHz	Av	37.798	54	-16.202	331	1.5	Horizontal	1 M	0.872
39.852 GHz	Av	37.185	54	-16.815	214	1.5	Horizontal	1 M	3.234

Table 7: Transmitting on the Highest Frequency 6875 MHz

5.6 §15.407(a) Maximum Power Spectral Density

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 11 dBm EIRP in any 1 MHz band during any time interval of continuous transmission for NSS-4 and 4.98 dBm EIRP for NSS-1 Mode. Results of this testing are summarized. The antenna has a gain of 12 dBi. For NSS-1 the Array Gain = 18.02 dBi (See section 5.1).

NSS-4 Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	PSD
HE20	6535	Mcs0_Nss4	18	9.18
HE20	6695	Mcs0_Nss4	18	10.41
HE20	6875	Mcs0_Nss4	18	9.49
HE40	6525	Mcs0_Nss4	19	6.89
HE40	6685	Mcs0_Nss4	18	7.42
HE40	6885	Mcs0_Nss4	18	6.88
HE80	6545	Mcs0_Nss4	19	4.10
HE80	6705	Mcs0_Nss4	18	4.43
HE80	6865	Mcs0_Nss4	19	4.66
HE160	6505	Mcs0_Nss4	18	0.60
HE160	6665	Mcs0_Nss4	18	1.39
HE160	6825	Mcs0_Nss4	18	1.07
HE320	6585	Mcs0_Nss4	18	-1.44

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 4.98 dBm EIRP in any 1 MHz band during any time interval of continuous transmission. Results of this testing are summarized.

NSS-1 Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	PSD
HE20	6535	Mcs0_Nss1	13	4.56
HE20	6695	Mcs0_Nss1	12	4.89
HE20	6875	Mcs0_Nss1	12	4.03
HE40	6525	Mcs0_Nss1	16	4.35
HE40	6685	Mcs0_Nss1	15	4.79
HE40	6885	Mcs0_Nss1	15	4.26
HE80	6545	Mcs0_Nss1	19	4.10
HE80	6705	Mcs0_Nss1	18	4.43
HE80	6865	Mcs0_Nss1	19	4.66
HE160	6505	Mcs0_Nss1	18	0.60
HE160	6665	Mcs0_Nss1	18	1.39
HE160	6825	Mcs0_Nss1	18	1.07
HE320	6585	Mcs0_Nss1	18	-1.44

30 degree Elevatation Angle

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	PSD
HE20	6535	Mcs0_Nss4	11	2.54
HE20	6695	Mcs0_Nss4	10	3.01
HE20	6875	Mcs0_Nss4	11	3.06
HE40	6525	Mcs0_Nss4	12	0.36
HE40	6685	Mcs0_Nss4	10	-0.08
HE40	6885	Mcs0_Nss4	11	0.27
HE80	6545	Mcs0_Nss4	11	-3.42
HE80	6705	Mcs0_Nss4	10	-2.95
HE80	6865	Mcs0_Nss4	11	-2.88
HE160	6505	Mcs0_Nss4	11	-5.97
HE160	6665	Mcs0_Nss4	11	-5.24
HE160	6825	Mcs0_Nss4	11	-5.39
HE320	6585	Mcs0_Nss4	11	-8.32

Result

The maximum average power spectral density was less than the limit of 11 dB for NSS-4 and 4.98 dB for NSS-1; therefore, the EUT complies with the specification.

-- End of Test Report --