



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-UX7SP
ISED ID	6545A-UX7SP
Equipment Under Test	UX7-SP
Test Report Serial Number	TR10040_01
Date of Tests	19-20 March; 9-10 April 2025
Report Issue Date	11 June 2025

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



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	UX7-SP
FCC ID	SWX-UX7SP
ISED ID	6545-UX7SP

On this 11th day of June 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: Kimberly DeBole



Reviewed By: Richard L. Winter

Revision History		
Revision	Description	Date
01	Original Report Release	11 June 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	UX7-SP
Serial Number	8478487e893b
Dimensions (cm)	11.7 x 11.7 x 4.25

2.2 Description of EUT

The UX7-SP is an access point designed for wide-ranging wireless coverage while maintaining overall network capacity. The UX7-SP operates in the 2.4 GHz and 5 GHz range. The UX7-SP has a Bluetooth management radio for easy setup and administration of the wireless system. The UX7-SP is powered from a USB-C connector.

For CDD transmission, direction gain is calculated as follows.

Array Gain = $10 \log(\text{NANT}/\text{NSS})$ 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 $\text{NANT} \leq 4$;

For PSD measurements when $\text{Nss}=1$: Array Gain = $10 \log(\text{NANT}/\text{NSS})$ dB + Antenna Gain (dBi). Or 3.01 dB + 7 dBi = 10.01 dBi.

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	WiFi Mode	Modulation Bandwidth	Modulation Type	Frequency (MHz)
UNII-3	a	20 MHz	OFDM	5745, 5775, 5825
	ac	20 MHz	VHT	5745, 5775, 5825
	ac	40 MHz	VHT	5755, 5775, 5795
	ac	80 MHz	VHT	5775

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: UX7 SN: 942A6F422528	Wireless Access Point	See Section 2.4
BN: UBIQUITI MN: GP-M015-QC SN: N/A	USB C Power Adapter	2 conductor power cord/80 cm
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
AC / USB-C	1	2 conductor power cord/80 cm
LAN	1	Un-shielded Cat 5e cable/5 meter
WAN	1	Un-shielded Cat 5e cable/5 meter

2.5 Operating Environment

Power Supply	120 Volts AC Mains to USB-C Power
AC Mains Frequency	60 Hz
Temperature	22.2 – 24 °C
Humidity	24.37 – 39.5 %
Barometric Pressure	1016 mBar

2.6 Operating Modes

The UX7-SP 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/be were investigated. All measurements are reported with the worst-case mode (802.11be) 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

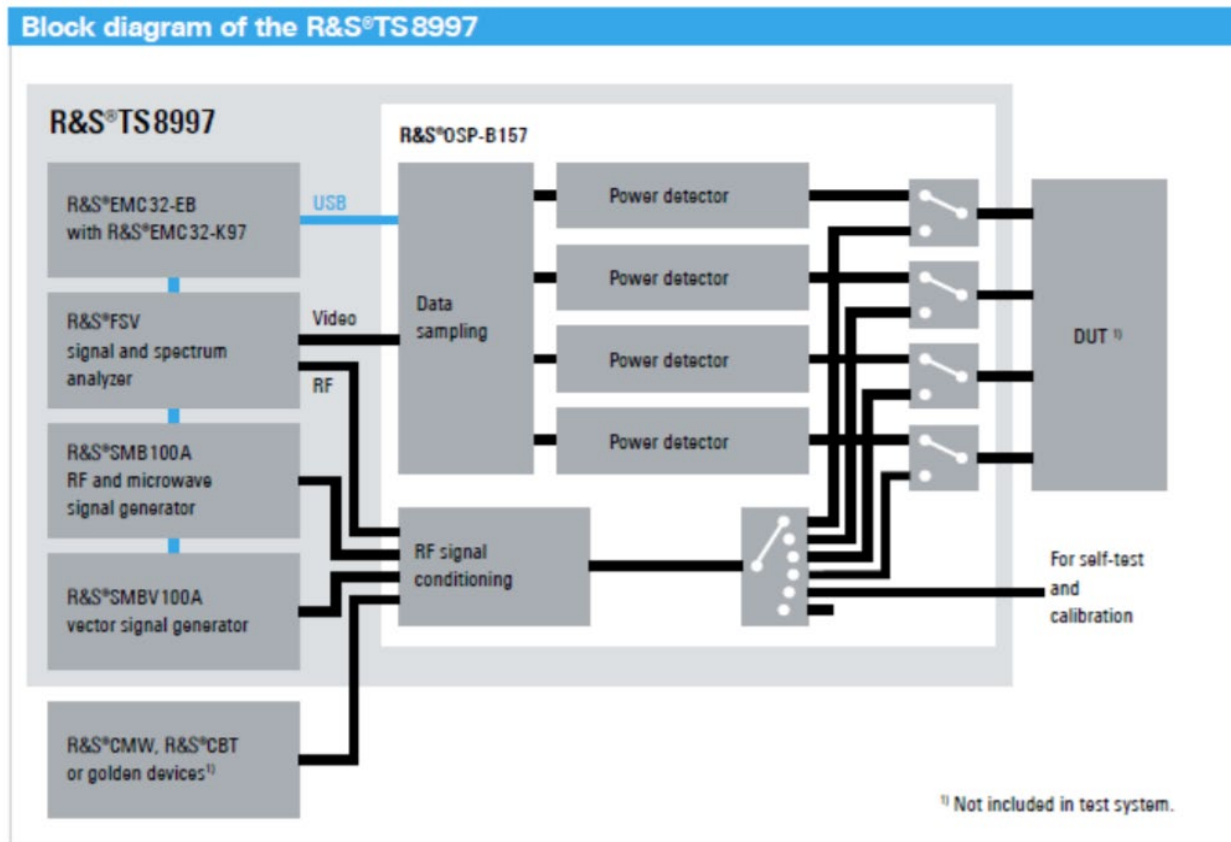


Diagram 1: Test Configuration Block Diagram

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	Bandwidth Requirement	5725 to 5850	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5725 to 5850	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A Note ¹
15.209	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	5725 to 5850	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. Note ¹ : Radiated Spurious was performed per 15.209 with the antenna unterminated.				

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

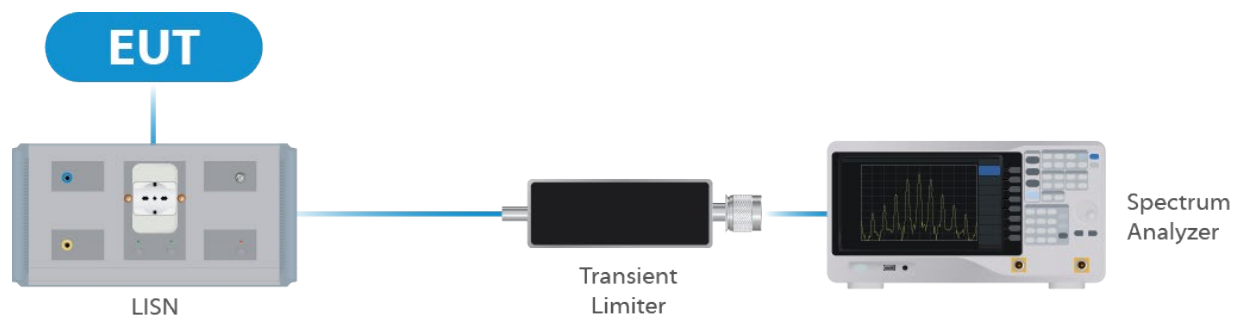


Figure 1: Conducted Emissions Test

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	4/28/2025	1/16/2026
Switch Extension	R&S	OSP-150W	UCL-2870	4/28/2025	1/16/2026
Test Software	R&S	EMC32	UCL-9442	--	--

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

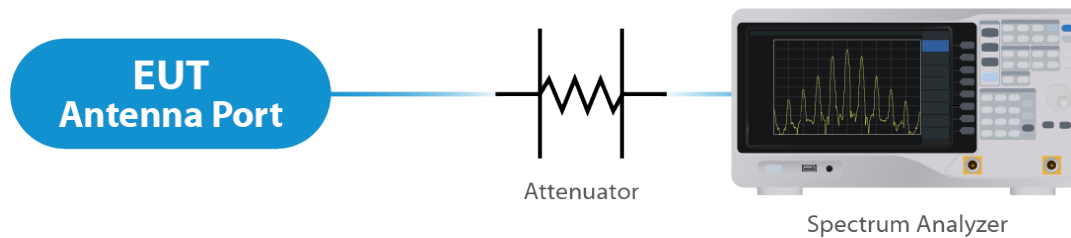


Figure 2: Direct Connect at the Antenna Port Test



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	ETS-Lindgren	3142E	UCL-9782	2/6/2025	2/6/2026
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	4/2/2025	4/2/2027
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	2/11/2025	2/4/2027
10 - 40 GHz Horn Antenna	ETS-Lindgren	3116C	UCL-7209	6/6/2024	6/6/2026
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	7/2/2024	7/2/2025
Test Software	Nexio	BatEMC	UCL-5253 & UCL- 5249	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

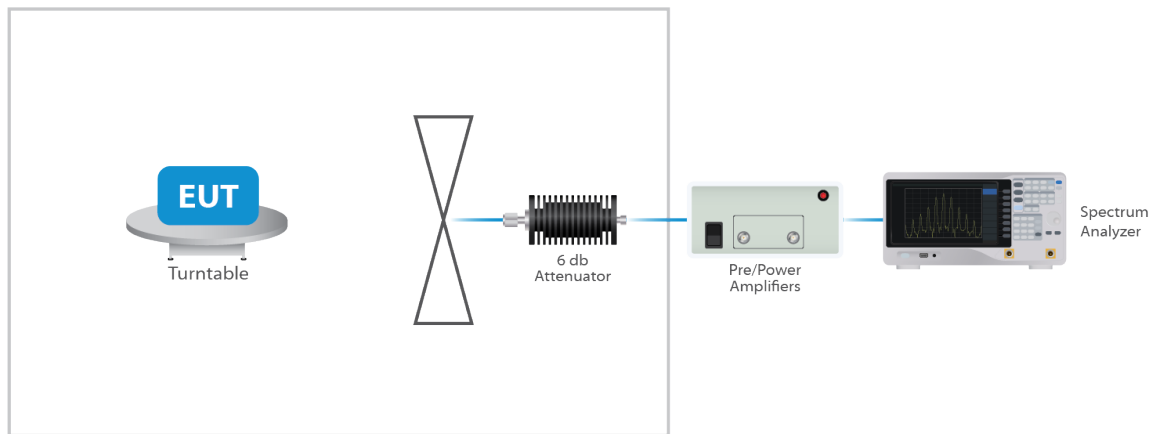


Figure 4: Radiated Emissions Test

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 ($\pm$ 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 integral antenna. Per the manufacturer, the Maximum gain of the antenna per chain is 7 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.

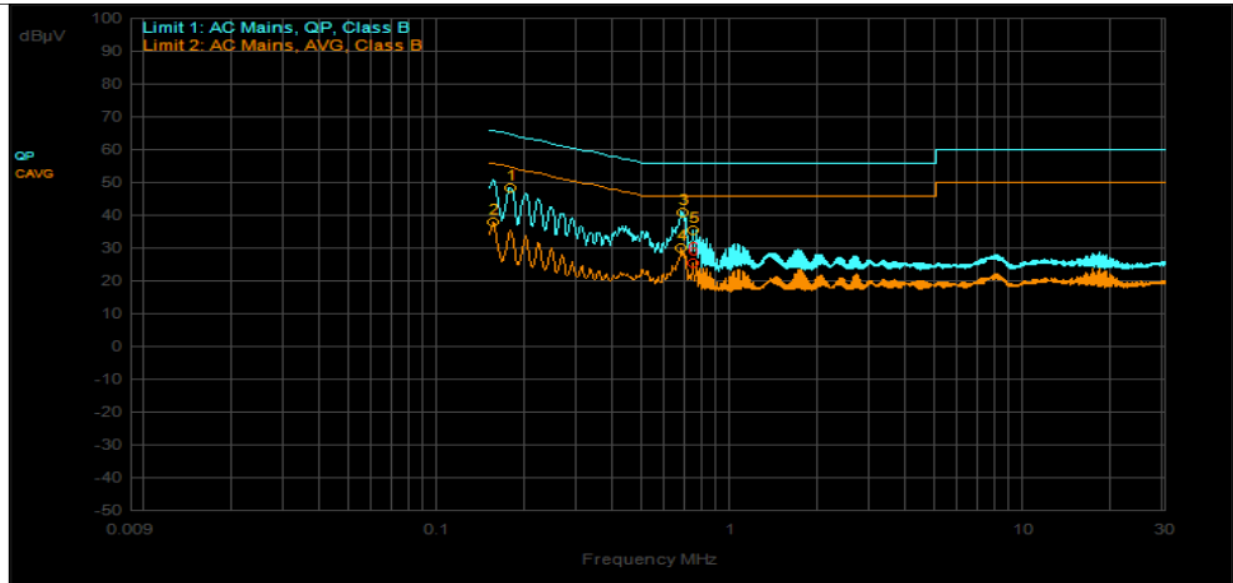
See Section 2.2 for directional gain calculation.

Results

The EUT complied with the specification

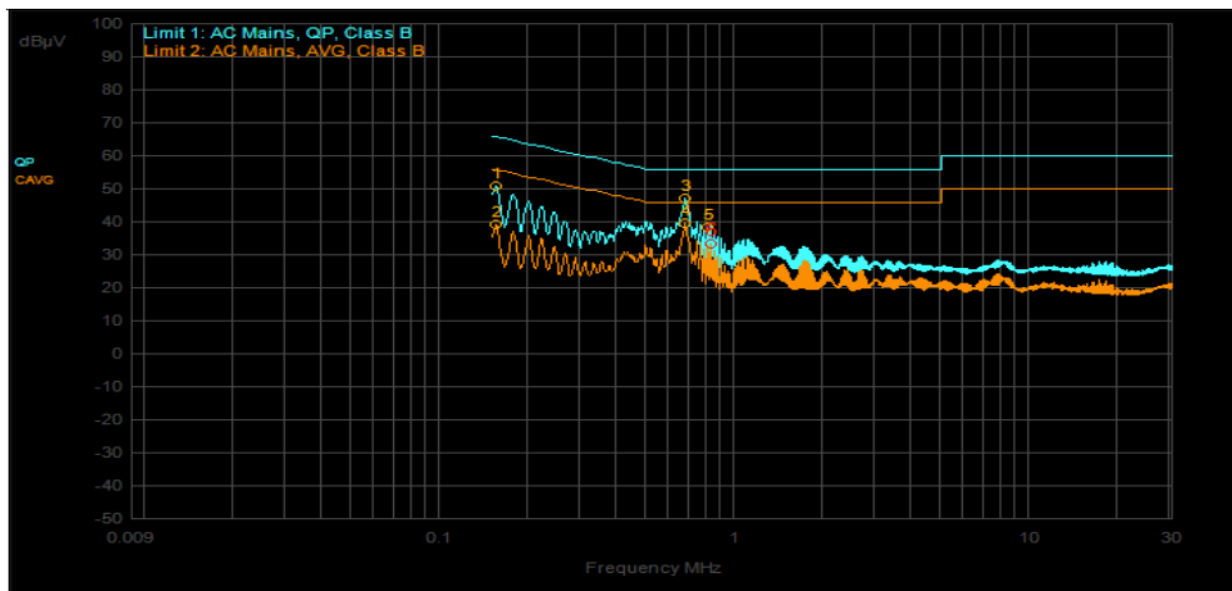
5.2 Conducted Emissions at Mains Ports Data

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
3	681,000kHz	12.39	0.00		QPeak	28.55	40.94	56.00	-15.06			
1	177,000kHz	12.38	0.00		QPeak	36.10	48.48	64.63	-16.15			
5	738,000kHz	12.39	0.00		QPeak	23.05	35.44	56.00	-20.56			
2	153,000kHz	12.41	0.00		C_AVG	25.38	37.79			55.84	-18.05	
4	672,000kHz	12.38	0.00		C_AVG	17.44	29.82			46.00	-16.18	
6	738,000kHz	12.39	0.00		C_AVG	13.16	25.55			46.00	-20.45	

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
3	672,000kHz	12.37	0.00		QPeak	34.77	47.14	56.00	-8.86			
1	153,000kHz	12.38	0.00		QPeak	38.33	50.71	65.84	-15.13			
5	804,000kHz	12.37	0.04		QPeak	25.93	38.34	56.00	-17.66			
2	153,000kHz	12.38	0.00		C_AVG	26.82	39.20			55.84	-16.64	
4	672,000kHz	12.37	0.00		C_AVG	27.26	39.63			46.00	-6.37	
6	825,000kHz	12.37	0.10		C_AVG	21.03	33.50			46.00	-12.50	

Result

The EUT complied with the specification limit.

5.3 §15.407(a) 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	5745	18.52	37.50
20	5775	17.75	37.50
20	5825	18.50	36.25
20	5745	19.48	30.41
20	5775	19.03	26.22
20	5825	19.03	22.77
40	5755	40.00	70.25
40	5775	39.50	63.25
40	5795	39.50	70.50
80	5775	79.00	84.50

Result

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

See Section 2.2 for directional gain calculation.

The maximum average RF conducted output power measured for this device was 28.76 dBm or 751.62 mW. The limit is 30 dBm, or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 7 dBi.

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
OFDM 20	5745	Mcs0_Nss2	28	27.07	7	34.07	36	-1.93
OFDM 20	5775	Mcs0_Nss2	28	27.68	7	34.68	36	-1.32
OFDM 20	5825	Mcs0_Nss2	28	27.58	7	34.58	36	-1.42
EHT 20	5745	Mcs0_Nss2	28	28.47	7	35.47	36	-0.53
EHT 20	5775	Mcs0_Nss2	28	28.59	7	35.59	36	-0.41
EHT 20	5825	Mcs0_Nss2	28	28.76	7	35.76	36	-0.24
EHT 40	5755	Mcs0_Nss2	28	28.46	7	35.46	36	-0.54
EHT 40	5775	Mcs0_Nss2	28	28.59	7	35.59	36	-0.41
EHT 40	5795	Mcs0_Nss2	28	28.48	7	35.48	36	-0.52
EHT 80	5775	Mcs0_Nss2	23	23.75	7	30.75	36	-5.25

Result

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

* Gated EIRP shown in the Annex is the conducted measurement.

5.5 §15.407(b)(7) Spurious Emissions

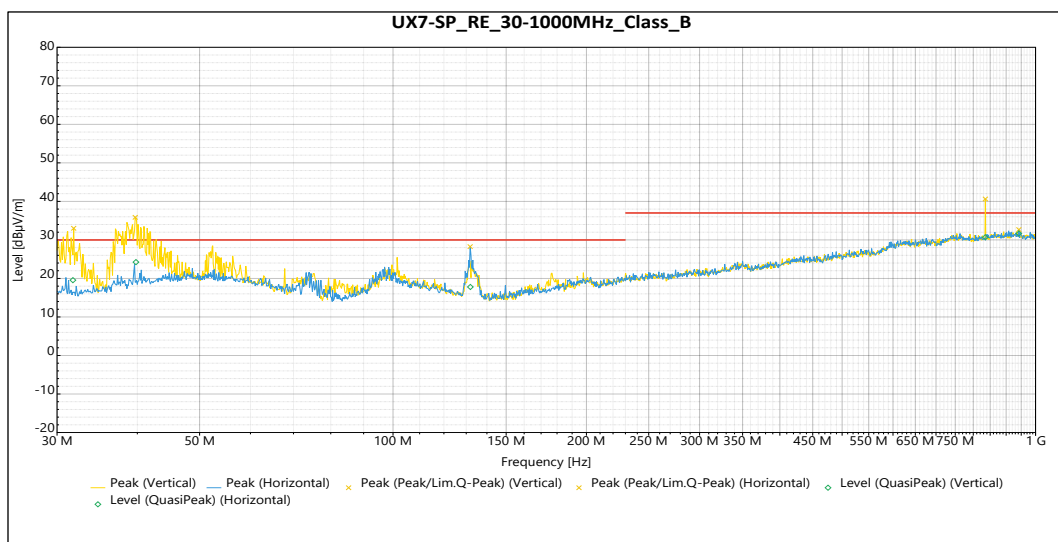
5.5.1 Radiated Spurious Emissions in the Restricted Bands of § 15.205

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.

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

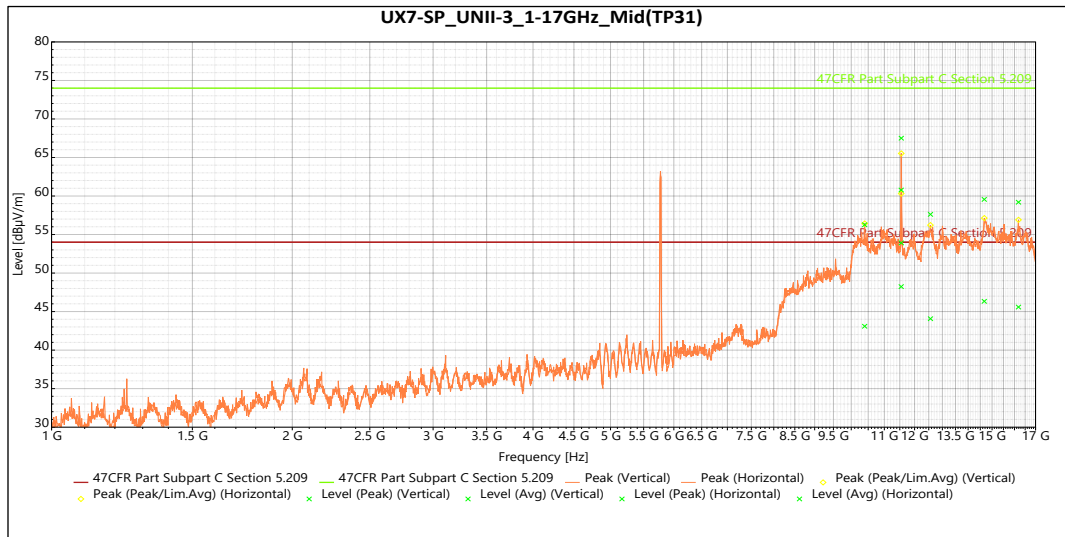
Result

All emissions in the restricted bands of § 15.205 met the limits specified in § 15.209; therefore, the EUT complies with the specification. See Annex for Conducted Band edge plots.



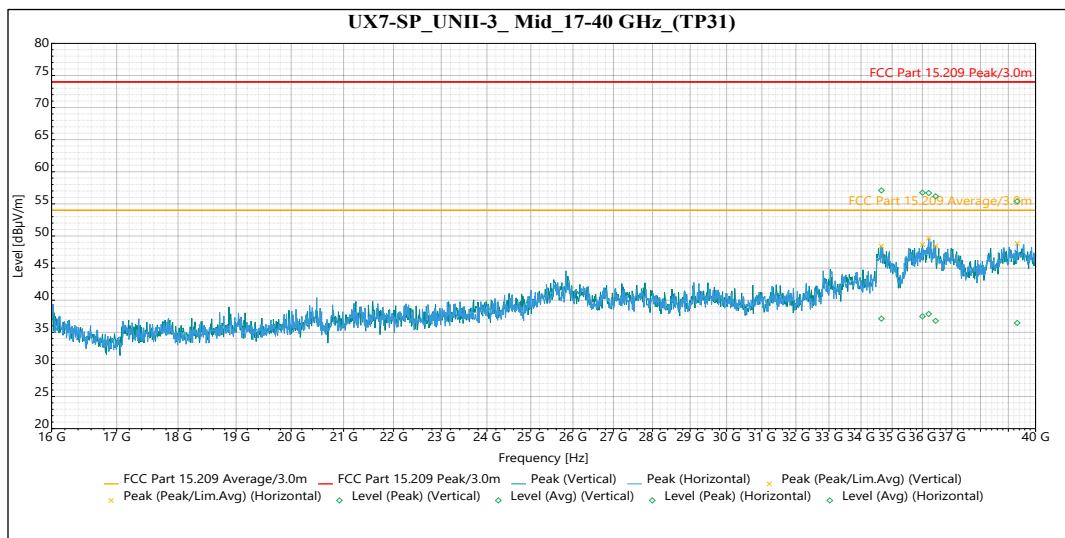
Frequency	SR #	Level (dBμV/m)	Limit (dBμV/m)	Margin	Azimuth (°)	Height	Pol.	Meas. Time	Correction (dB)
31.756 MHz	QP	19.552	30	-10.448	210	1.85	Vertical	15	-11.819
39.805 MHz	QP	24.238	30	-5.762	226	1.05	Vertical	15	-9.23
835.4 MHz	QP	30.694	37	-6.306	159	1.9	Vertical	15	0.43
131.94 MHz	QP	17.787	30	-12.213	322	3.97	Horizontal	15	-13.114
941.95 MHz	QP	31.668	37	-5.332	307	3.12	Horizontal	15	1.812

Table 4: Radiated Emissions within 30 MHz to 1 GHz



Frequency	SR #	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.394 GHz	Peak	56.269	74	-17.731	91	2.816	Vertical	11.698
11.547 GHz	Peak	60.778	74	-13.222	267	2.816	Vertical	11.005
14.668 GHz	Peak	59.564	74	-14.436	223	1.5	Vertical	14.623
10.394 GHz	Avg	43.099	54	-10.901	91	2.816	Vertical	11.698
11.547 GHz	Avg	48.243	54	-5.757	267	2.816	Vertical	11.005
14.668 GHz	Avg	46.336	54	-7.664	223	1.5	Vertical	14.623
11.55 GHz	Peak	67.507	74	-6.493	180	1.643	Horizontal	10.994
12.562 GHz	Peak	57.62	74	-16.38	189	3.153	Horizontal	13.077
16.186 GHz	Peak	59.198	74	-14.802	109	2.325	Horizontal	14.72
11.55 GHz	Avg	53.918	54	-0.082	180	1.643	Horizontal	10.994
12.562 GHz	Avg	44.077	54	-9.923	189	3.153	Horizontal	13.077
16.186 GHz	Avg	45.59	54	-8.41	109	2.325	Horizontal	14.72

Table 5: Radiated emission within 1-17GHz Transmitting on Middle Frequency 5775 MHz



Frequency	SR #	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
34.6516668 GHz	Peak	57.104	74	-16.896	284	Vertical	10.387
36.0021166 GHz	Peak	56.754	74	-17.246	44	Vertical	9.702
36.4469878 GHz	Peak	56.188	74	-17.812	51	Vertical	9.772
34.6516668 GHz	Avg	37.126	54	-16.874	284	Vertical	10.387
36.0021166 GHz	Avg	37.488	54	-16.512	44	Vertical	9.702
36.4469878 GHz	Avg	36.792	54	-17.208	51	Vertical	9.772
36.2128972 GHz	Peak	56.697	74	-17.303	337	Horizontal	10.393
39.3235964 GHz	Peak	55.414	74	-18.586	299	Horizontal	8.511
36.2128972 GHz	Avg	37.867	54	-16.133	337	Horizontal	10.393
39.3235964 GHz	Avg	36.461	54	-17.539	299	Horizontal	8.511

Table 6: Radiated Emissions within 17-40GHz Transmitting on Middle Frequency 5775 MHz

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 29 dBm in any 500 kHz band during any time interval of continuous transmission.

See Section 2.2 for directional gain calculation.

Results of this testing are summarized.

Nss>1

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
OFDM 20	5745	Mcs0_Nss2	28	13.00	7	29	-16
OFDM 20	5775	Mcs0_Nss2	28	12.72	7	29	-16.28
OFDM 20	5825	Mcs0_Nss2	28	12.78	7	29	-16.22
EHT 20	5745	Mcs0_Nss2	28	14.90	7	29	-14.1
EHT 20	5775	Mcs0_Nss2	28	15.03	7	29	-13.97
EHT 20	5825	Mcs0_Nss2	28	15.03	7	29	-13.97
EHT 40	5755	Mcs0_Nss2	28	12.16	7	29	-16.84
EHT 40	5775	Mcs0_Nss2	28	12.46	7	29	-16.54
EHT 40	5795	Mcs0_Nss2	28	12.30	7	29	-16.7
EHT 80	5775	Mcs0_Nss2	23	4.85	7	29	-24.15

Result

The maximum summed average power spectral density was less than the limit of 29 dBm; therefore, the EUT complies with the specification.

-- End of Test Report --