



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-U7PROO
ISED ID	6545A-U7PROO
Equipment Under Test	U7-Pro-Outdoor
Test Report Serial Number	TR9581_02
Date of Test(s)	19 – 22 November 2024
Report Issue Date	2 December 2024

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



NVLAP LAB CODE 600241-0

Certification of Engineering Report

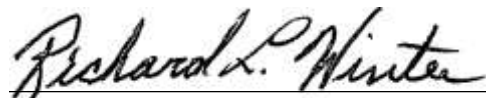
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with 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-Outdoor
FCC ID	SWX-U7PROO
ISED ID	6545A-U7PROO

On this 2nd day of December 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: Joseph W. Jackson
Reviewed By: Richard L. Winter

Revision History		
Revision	Description	Date
01	Original Report Release	2 December 2024
02	Corrected Power Limit in Section 5.1.3	17 April 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-Outdoor
Serial Number	438
Dimensions (cm)	17.0 x 20.8 x 12.2

2.2 Description of EUT

The U7-Pro-Outdoor is a WiFi7 access point with 2.4 GHz, 5GHz and 6GHz 2x2 radios. It has external SMA antenna connectors supporting 2.4/5GHz and internal antennas supporting 2.4/5/6GHz. The U7-Pro-Outdoor has an aggregate throughput rate of 9.3 Gbps and is powered by a 2.5Gbe PoE 802.3at through a single RJ45 port.

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-Outdoor (Note 1) SN: 05BF1C	WiFi Access Point	See Section 2.4
BN: UBIQUITI MN: U-POE-at SN: N/A	PoE Power Adapter	Unshielded Cat 5e cable/1 meters
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	Unshielded Cat 5e cable/1 meters
BN: WiFi Alliance MN: v2.0.65.184 SN: N/A	AFC DUT Test Harness	Unshielded Cat 5 / 1 meter

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 Mains	1	3 conductor power cord/80 cm
POE (POE Injector)	1	Unshielded Cat 5e cable/8 meters
LAN (POE Injector)	1	Unshielded Cat 5e cable/1 meters

2.5 Operating Environment

Power Supply	21 - 26 °C
AC Mains Frequency	17 - 29 %
Temperature	21.1 – 22.2 °C
Humidity	19.8 – 26.4 %
Barometric Pressure	1014 mBar

2.6 Operating Modes

The U7-Pro-Outdoor was tested using test software in order to enable to constant transmission.

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

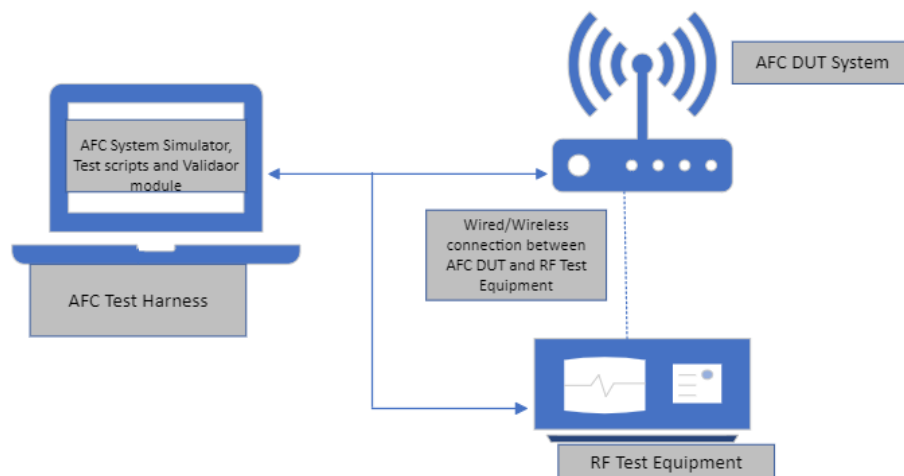


Diagram 1: AFC DUT Setup for Standard Power Access Point- Standalone

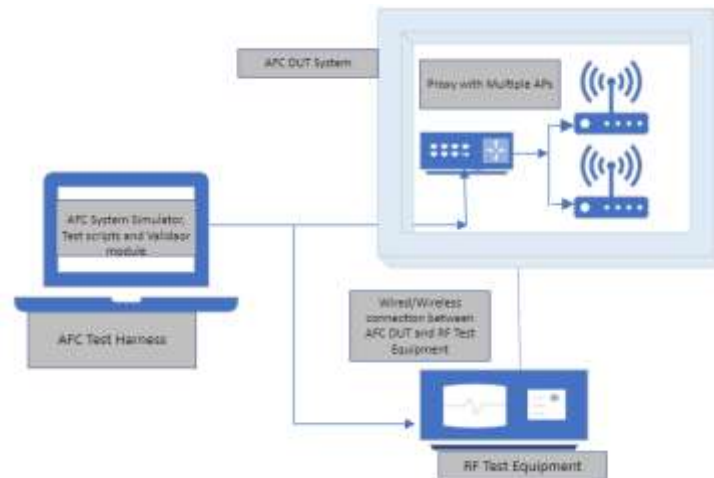


Diagram 2: AFC DUT Setup for Standard Power Access Point (non-standalone) with Proxy

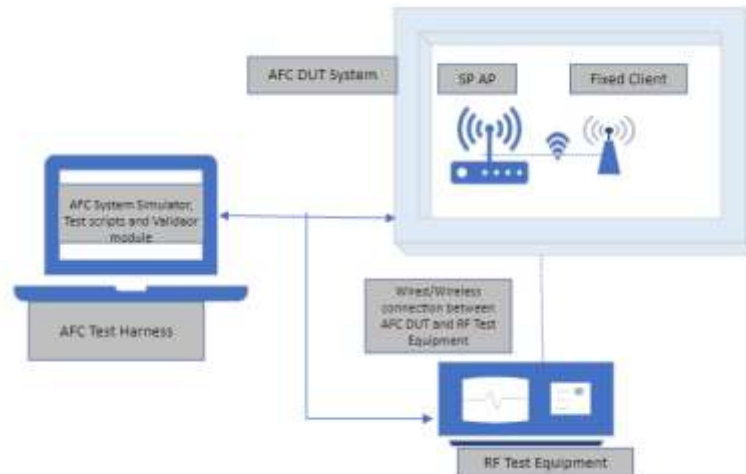


Diagram 3: AFC DUT Setup for Fixed Client

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(k)	RSS-248 Section 6	AFCDRSA31_FrequencyChannel	5955 to 6885	Compliant
15.407(k)	RSS-248 Section 6	AFCDUSA32_FrequencyChannel	5955 to 6885	Compliant
15.407(k)	RSS-248 Section 6	AFCDSAU33_FrequencyChannel	5955 to 6885	Compliant
15.407(k)	RSS-248 Section 6	AFCDUAU34_FrequencyChannel	5955 to 6885	Compliant
15.407(k)	RSS-248 Section 6	AFCDUSV35_ServerValidation	N/A	Compliant

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 10-Meter chamber 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 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	Keysight	N9010B	UCL-7069	5/1/2024	5/1/2025

Table 1: List of equipment used for Direct Connect at the Antenna Port

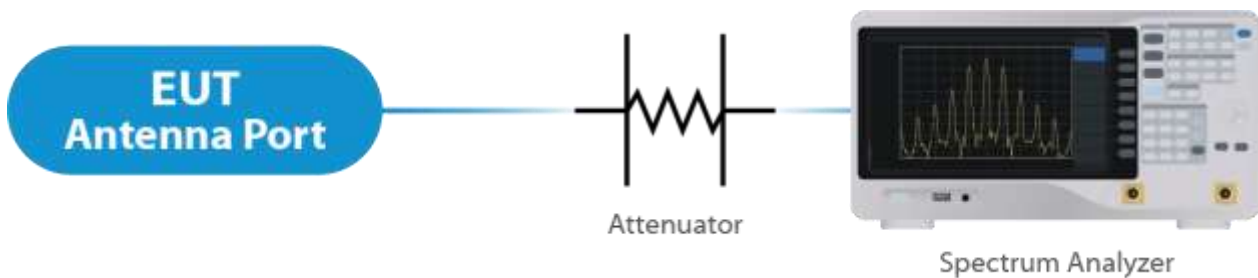


Figure 1: Direct Connect at the Antenna Port Test

4.2 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.

4.3 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 §15.407 Successful Registration and Spectrum Access Request

5.1.1 20 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 20	5995	LPI	1.93	3.65	15.88	30
EHT 20	5995	SP	10.05	11.78	24.01	26.3
EHT 20	6695	SP	8.38	10.2	22.39	25.3

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 20	5995	LPI	-11.08	-9.36	2.87	5
EHT 20	5995	SP	-2.96	-1.23	11.00	13.3
EHT 20	6695	SP	-4.63	-2.81	9.38	12.3



Plot 1: Power and PSD for Low-Power Indoor – 5995 MHz



Plot 2: Power and PSD for Standard Power – 5995 MHz



Plot 3: Power and PSD for Standard Power – 6695 MHz

5.1.2 40 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 40	6045	LPI	2.41	4.87	16.82	30
EHT 40	6045	SP	9.67	10.15	22.93	26.2
EHT 40	6765	SP	8.13	9.14	21.67	30.2

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 40	6045	LPI	-13.61	-11.15	0.80	5
EHT 40	6045	SP	-6.35	-5.87	6.66	10.2
EHT 40	6765	SP	-7.89	-6.88	5.65	14.2



Plot 4: Power and PSD for Low-Power Indoor – 6045 MHz



Plot 5: Power and PSD for Standard Power – 6045 MHz

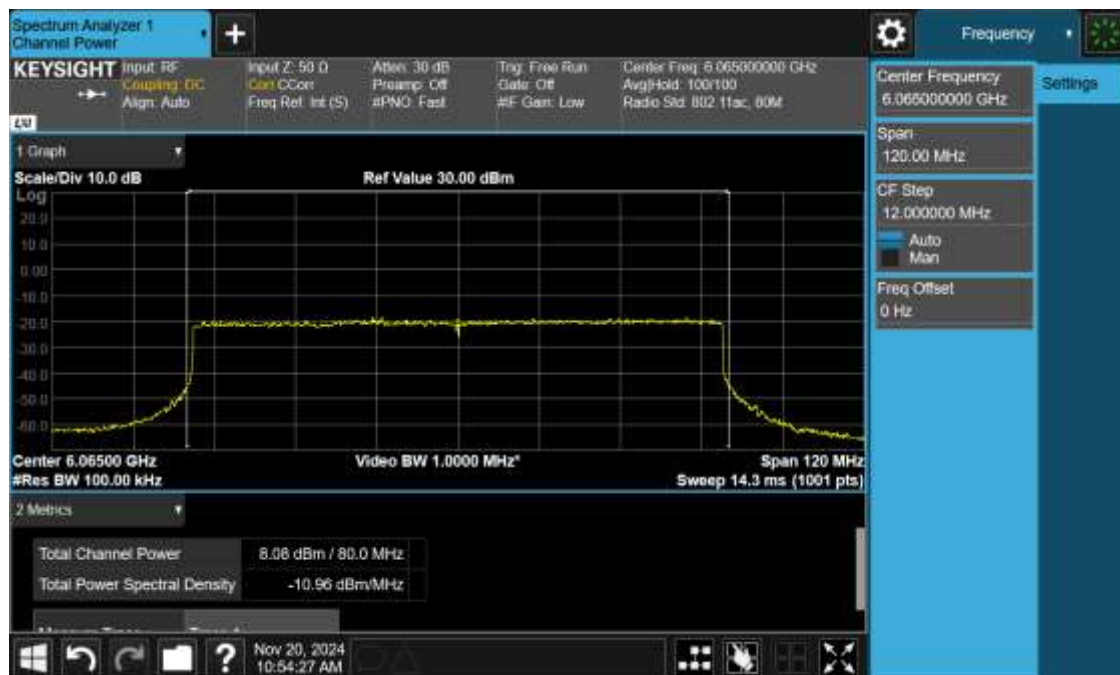


Plot 6: Power and PSD for Standard Power – 6765 MHz

5.1.3 80 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 80	6065	LPI	6.72	8.08	20.46	30
EHT 80	6065	SP	10.95	11.18	24.08	27.4
EHT 80	6705	SP	11.76	14.31	26.23	30.3

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 80	6065	LPI	-12.31	-10.96	1.43	5
EHT 80	6065	SP	-8.08	-7.85	5.05	8.4
EHT 80	6705	SP	-7.27	-4.72	7.20	11.3



Plot 7: Power and PSD for Low-Power Indoor – 6065 MHz



Plot 8: Power and PSD for Standard Power – 6065 MHz



Plot 9: Power and PSD for Standard Power – 6705 MHz

5.1.4 160 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 160	6025	LPI	9.47	9.9	22.70	30
EHT 160	6185	SP	11.7	13.37	25.63	30.4
EHT 160	6665	SP	10.79	13.62	25.44	30

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 160	6025	LPI	-12.57	-12.14	0.66	5
EHT 160	6185	SP	-10.34	-8.67	3.59	8.4
EHT 160	6665	SP	-11.22	-8.43	3.41	8



Plot 10: Power and PSD for Low-Power Indoor – 6025 MHz



Plot 11: Power and PSD for Standard Power – 6185 MHz

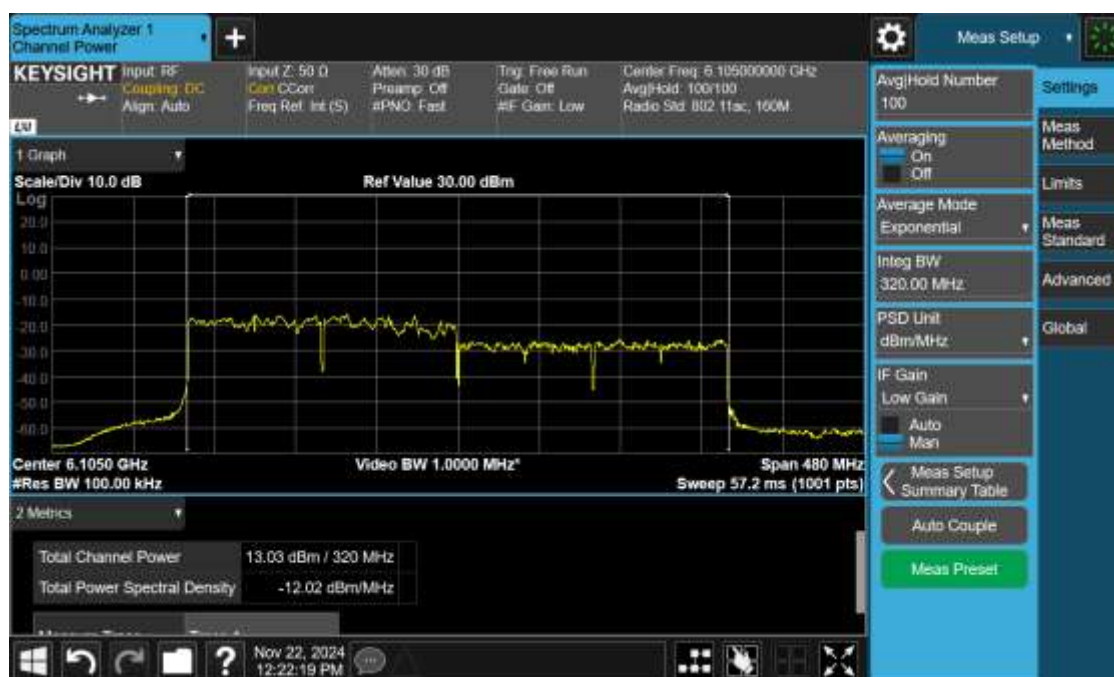


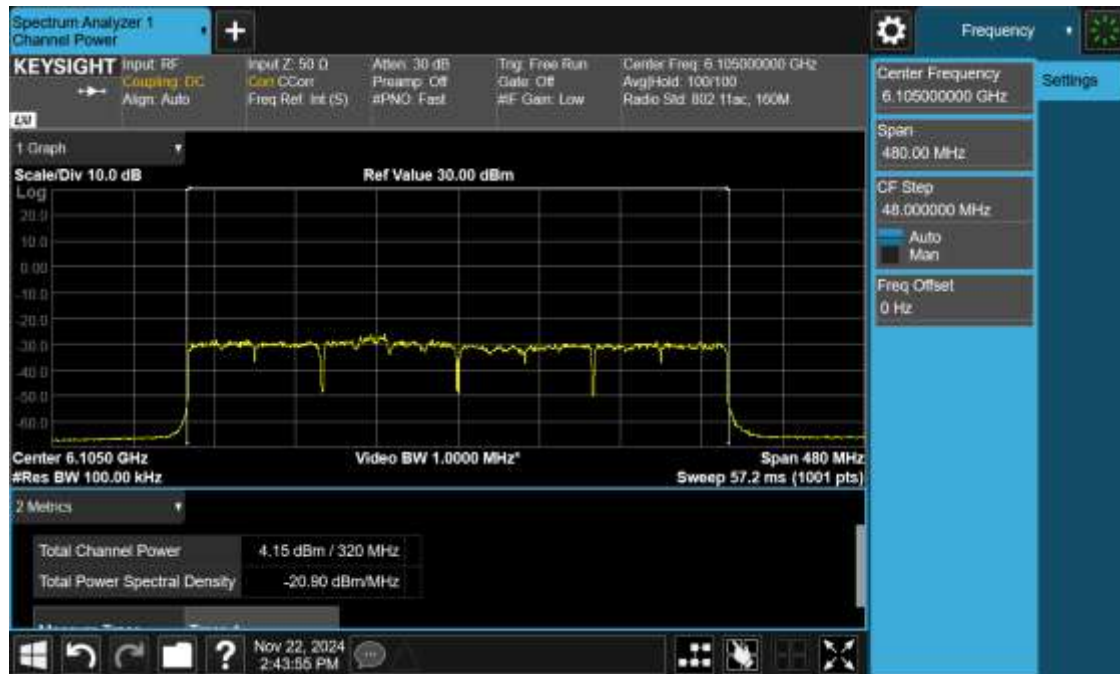
Plot 12: Power and PSD for Standard Power – 6665 MHz

5.1.5 320 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 320	6105	LPI	12.72	13.03	25.89	30
EHT 320	6265	SP	12.45	12.06	25.27	31.2
EHT 320	6105	SP	4.45	4.15	17.31	22.2

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 320	6105	LPI	-12.34	-12.02	0.83	5
EHT 320	6265	SP	-12.61	-12.99	0.21	6.1
EHT 320	6105	SP	-20.60	-20.90	-7.74	-2.9





Plot 14: Power and PSD for Standard Power – 6265 MHz



Plot 15: Power and PSD for Standard Power – 6105 MHz

Result

The EUT complied with the specification limit.

5.2 Unsuccessful Spectrum Access Request

5.2.1 20 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 20	6055	LPI	1.26	2.31	14.83	30

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 20	6055	LPI	-11.75	-10.70	1.82	5



Plot 16: Power and PSD for Low-Power Indoor – 6055 MHz

Result

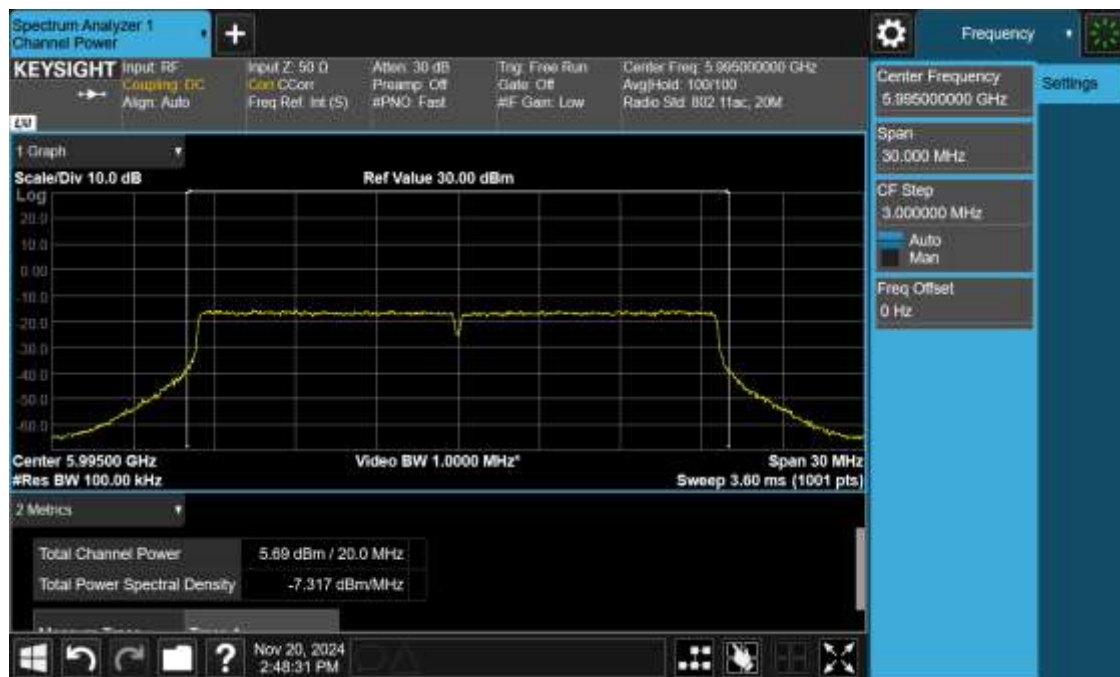
The EUT complied with the specification limit.

5.3 Successful Spectrum Access Update

5.3.1 20 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 20	5995	SP	5.50	5.69	18.61	21.5
EHT 20	6055	SP	12.24	10.76	24.57	28.6

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 20	5995	SP	-7.514	-7.317	5.60	8.50
EHT 20	6055	SP	-0.774	-2.246	11.56	16.6



Plot 17: Power and PSD for Standard Power – 5995 MHz



Plot 18: Power and PSD for Standard Power – 6055 MHz

Result

The EUT complied with the specification limit.

5.4 Unsuccessful Spectrum Access Update

5.4.1 20 MHz Bandwidth

Modulation (BW)	Frequency (MHz)	Power Mode	Power Chain 0	Power Chain 1	Power EIRP	Power Limit
EHT 20	6055	LPI	0.79	2.13	14.54	30

Modulation (BW)	Frequency (MHz)	Power Mode	PSD Chain 0	PSD Chain 1	PSD EIRP	PSD Limit
EHT 20	6055	LPI	-12.22	-10.88	1.51	5



Plot 19: Power and PSD for Low-Power Indoor – 5995 MHz

Result

The EUT complied with the specification limit.

5.5 Unsuccessful Server Validation

See associated Annex for Unsuccessful Server Validation reports.

-- End of Test Report --