UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-U7PROW
IC ID	6545A-U7PROW
Equipment Under Test	U7-Pro-Wall
Test Report Serial Number	TR8614_01
Date of Test(s)	25 – 26; 30 – 31 October and 8 November 2023
Report Issue Date	8 November 2023

Test Specification	Applicant
47 CFR FCC Part 15, Subpart C	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

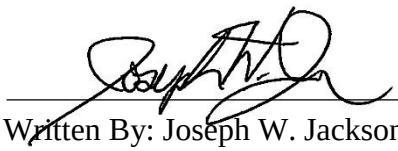
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart C. This report may be reproduced in full. Partial reproduction of this report may only be made with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

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	U7-Pro-Wall
FCC ID	SWX-U7PROW
IC ID	6545A-U7PROW

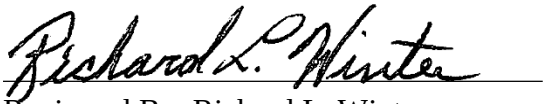
On this 8th day of November 2023, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

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	8 November 2023

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	U7-Pro-Wall
Serial Number	05BF1C
Dimensions (cm)	15.0 x 10.3 x 3.6

2.2 Description of EUT

The U7-Pro-Wall is WiFi 7 access point that represents the next generation of competitively priced, prosumer wireless technology for home and enterprise users. The U7-Pro-Wall provides high aggregate throughput speeds. The U7-Pro-Wall transmit in the 2.4 GHz, 5 GHz and 6 GHz frequency bands and uses integrated antennas. The U7-Pro-Wall is powered from an 802.3at power adapter.

This report covers the circuitry of the device subject to FCC Part 15, Subpart C. 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-Wall (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

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	120 Volts AC Mains to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.9 – 23.8 C
Humidity	16.9 – 28.9 %
Barometric Pressure	1012 mBar

2.6 Operating Modes

The U7-Pro-Wall was connected to a personal computer laptop and tested using test software in order to enable to constant duty cycle greater or equal to 98% of the WiFi transceiver. All emission modes of 802.11 b/g/n/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

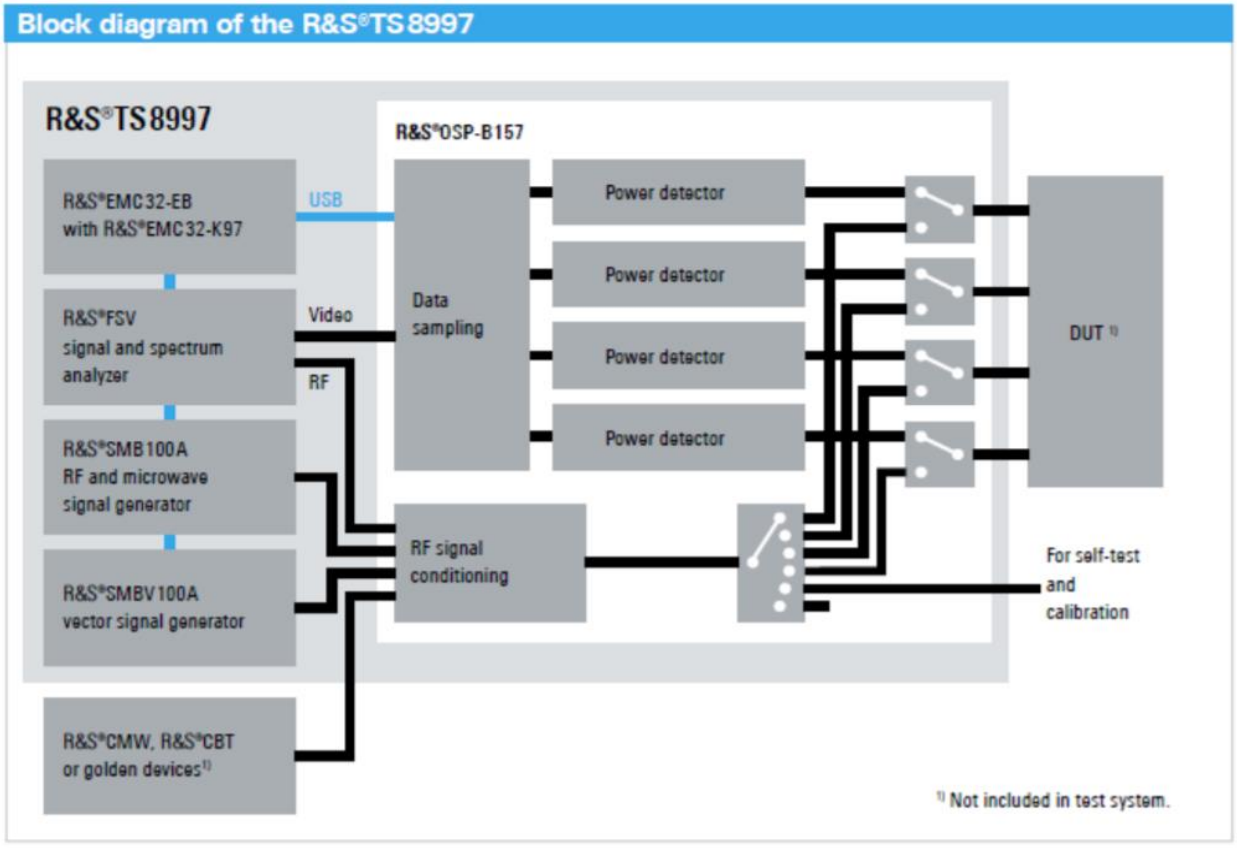


Diagram 1: Test Configuration Block Diagram

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 C 15.203, 15.207 and 15.247 Limits and methods of measurement of radio interference characteristics of radio frequency 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 15.203

See test standard for details.

3.2.2 47 CFR FCC Part 15 Section 15.207

See test standard for details.

3.2.3 47 CFR FCC Part 15 Section 15.247

See test standard for details.

3.3 FCC Part 15, Subpart C

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
15.247(a)	RSS-247 § 5.2	Bandwidth Requirement	2412 to 2462	Compliant
15.247(b)	RSS-247 § 5.4	Peak Output Power	2412 to 2462	Compliant
15.247(d)	RSS-247 § 5.4	Antenna Conducted Spurious Emissions	0.009 to 26000	N/A
15.247(d)	RSS-247 § 5.4	Radiated Spurious Emissions	0.009 to 26000	Compliant
15.247(e)	RSS-247 § 5.2	Peak Power Spectral Density	2412 to 2462	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 558074 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 2024. This site has also been registered with Innovations, Science and Economic Development (ISED) department and was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until 30 June 2024.

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	2/22/2023	2/22/2024
LISN	AFJ	LS16C/10	UCL-6749	12/6/2021	12/6/2023
ISN	Teseq	ISN T800	UCL-2974	6/27/2022	6/272024
LISN	Com-Power	LIN-120C	UCL-2612	1/24/2023	1/24/2024
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	UCL	Revision 1	UCL-3107	N/A	N/A

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

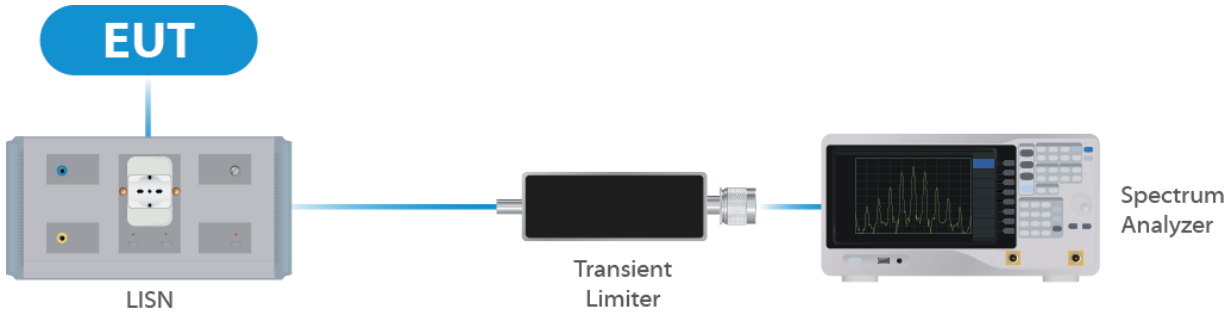


Figure 1: Conducted Emissions Test

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	11/7/2022	11/7/2023
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	2/22/2023	2/22/2024
Switch Extension	R&S	OSP-150W	UCL-2870	2/22/2023	2/22/2024

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

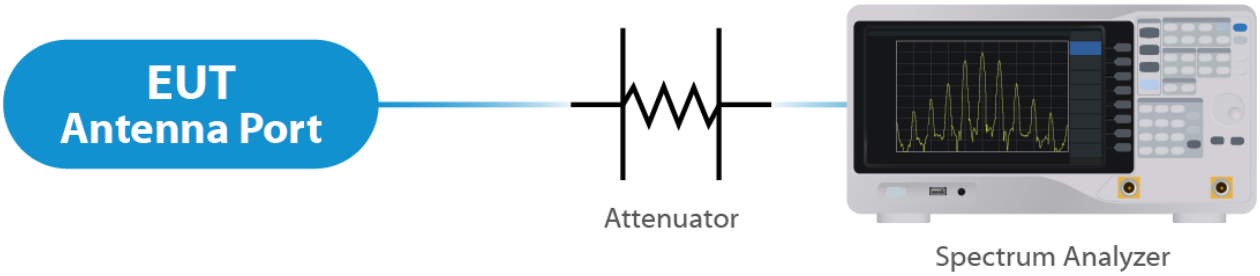


Figure 2: Direct Connect at the Antenna Port Test

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	1/27/2023	1/27/2024
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	10/7/2021	10/7/2023
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	9/22/2022	9/22/2024
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	1/27/2023	1/27/2025
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	6/09/2022	6/09/2024
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	12/9/2022	12/9/2023
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

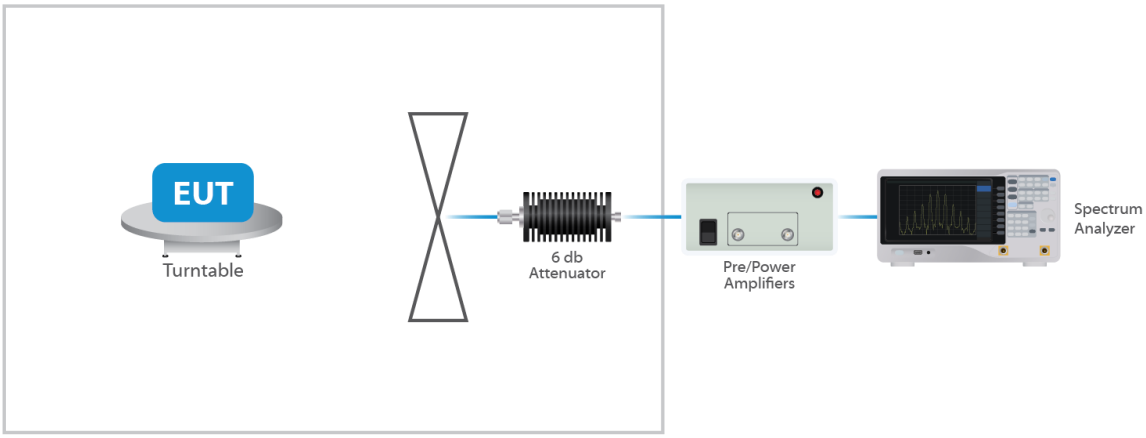


Figure 3: Radiated Emissions Test

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

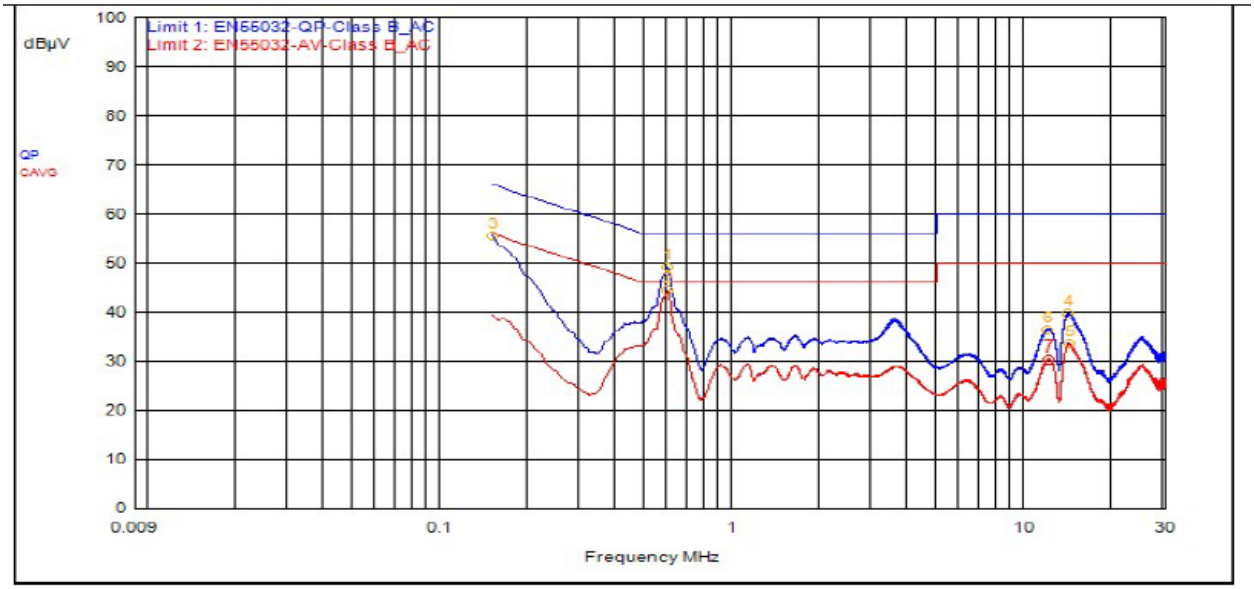
The EUT uses an internal integrated antenna. As per the manufacturer, the maximum gain of the antenna per chain is 4 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;
For PSD measurements Array Gain = 10 log(NANT/NSS) dB = 3.01dB

Results

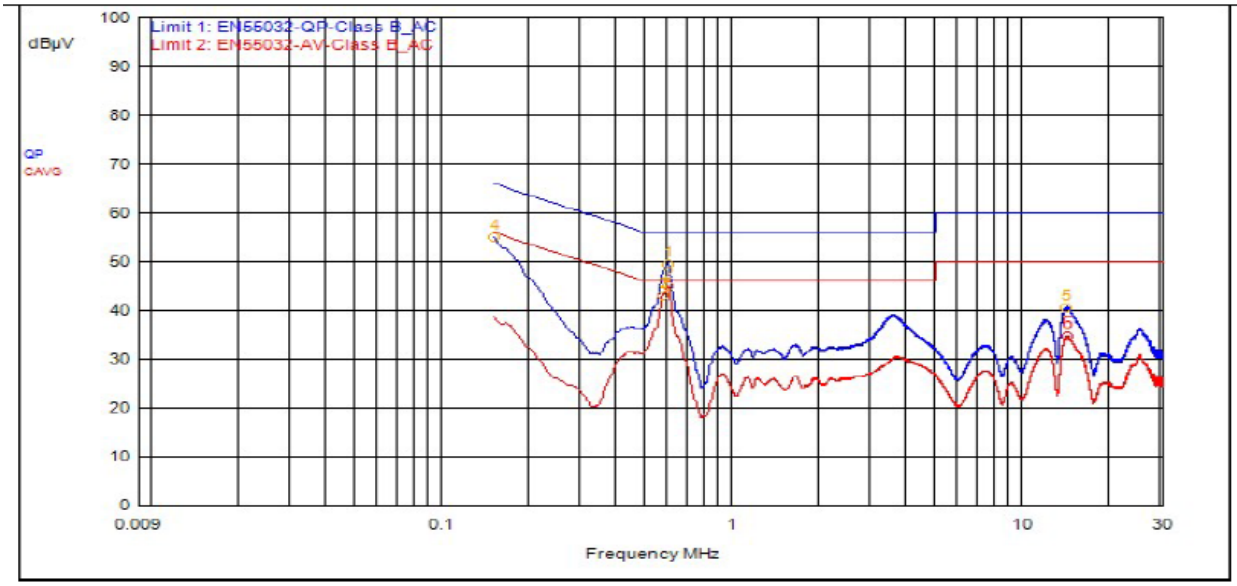
The EUT complied with the specification

5.2 Conducted Emissions at Mains Ports Data



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	594,000kHz	9.59	0.00		QPeak	39.62	49.21	56.00	-6.79			
3	150,000kHz	9.62	0.00		QPeak	45.80	55.42	66.00	-10.58			
4	13.935	9.72	0.00		QPeak	29.91	39.63	60.00	-20.37			
6	11.739	9.67	0.00		QPeak	26.82	36.49	60.00	-23.51			
2	597,000kHz	9.59	0.00		C_AVG	34.97	44.56			46.00	-1.44	
5	13.998	9.73	0.00		C_AVG	23.77	33.50			50.00	-16.50	
7	11.952	9.68	0.00		C_AVG	20.65	30.33			50.00	-19.67	

Graph 1: Conducted Emissions Plot - 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	9.50	0.00		QPeak	39.98	49.48	56.00	-6.52			
4	150,000kHz	9.49	0.00		QPeak	45.58	55.07	66.00	-10.93			
5	13.893	9.67	0.00		QPeak	30.98	40.65	60.00	-19.35			
2	594,000kHz	9.50	0.00		C_AVG	35.43	44.93			46.00	-1.07	
3	570,000kHz	9.49	0.00		C_AVG	33.65	43.14			46.00	-2.86	
6	14.019	9.67	0.00		C_AVG	25.08	34.75			50.00	-15.25	

Graph 2: Conducted Emissions Plot – Line 1

Result

The EUT complied with the specification limit.

5.3 §15.247(a)(2) Emissions Bandwidth

All chains were measured under the guidance of KDB 558074 Section 8.2. and KDB 66291 D01. Please see associated annex for details on instrument settings.

Mode	Frequency (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth (MHz)
b	2412	12.8	7.2
	2437	12.9	6.6
	2462	12.7	7.2
g	2412	16.6	15.2
	2437	16.6	12.7
	2462	16.8	15.4
n 20	2412	17.7	17.7
	2437	17.8	17.7
	2462	17.7	17.7
n 40	2422	36.3	36.4
	2437	36.5	36.2
	2452	36.3	36.4
ax 20	2412	19.0	18.7
	2437	18.9	18.6
	2462	18.9	18.2
ax 40	2422	37.8	35.7
	2437	38.0	37.0
	2452	37.8	17.1

Result

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

In the configuration tested, the 6 dB bandwidth was greater than 500 kHz; therefore, the EUT complied with the requirements of the specification (see spectrum analyzer plot within the Annex).

5.4 §15.247(b)(3) Maximum Average Output Power

All chains were measured and summed under the guidance of KDB 558074 Section 8.3.2.3. and KDB 66291 D01. Please see associated annex for details on instrument settings.

The maximum average RF conducted output power measured for this device was 27.25 dBm or 530.88 mW. The limit is 30 dBm or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 4 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
b 20	2412	Mcs0	21	23.46	27.46
	2417	Mcs0	21	23.47	24.47
	2422	Mcs0	21	23.39	27.39
	2427	Mcs0	21	23.67	27.67
	2432	Mcs0	21	23.52	27.52
	2437	Mcs0	24	26.48	30.48
	2442	Mcs0	25	27.25	31.25
	2447	Mcs0	25	27.12	31.12
	2452	Mcs0	24	26.39	30.39
	2457	Mcs0	24	26.38	30.38
	2462	Mcs0	24	26.15	30.15
g 20	2412	Mcs0	18	20.54	24.54
	2417	Mcs0	19	21.66	25.66
	2422	Mcs0	20	22.30	26.30
	2427	Mcs0	21\	23.33	27.33
	2432	Mcs0	21	23.39	27.39
	2437	Mcs0	22	24.25	28.25
	2442	Mcs0	22	24.37	28.37
	2447	Mcs0	22	24.27	28.27
	2452	Mcs0	21	23.62	27.62
	2457	Mcs0	20	22.28	26.38
	2462	Mcs0	19	21.22	25.22
n 20	2412	Mcs0	18	20.42	24.42
	2417	Mcs0	20	22.31	26.31
	2422	Mcs0	20	22.25	26.25
	2427	Mcs0	21	23.31	27.31

	2432	Mcs0	21	23.28	27.28
	2437	Mcs0	22	24.28	28.28
	2442	Mcs0	22	24.30	28.30
	2447	Mcs0	22	24.19	28.19
	2452	Mcs0	22	24.22	28.22
	2457	Mcs0	20	22.13	26.13
	2462	Mcs0	20	22.61	26.61
n 40	2422	Mcs0	16	18.62	22.62
	2437	Mcs0	17	19.81	23.81
	2452	Mcs0	17	19.83	23.83
ax 20	2412	Mcs0	15	17.79	21.79
	2417	Mcs0	17	19.68	23.68
	2422	Mcs0	20	22.30	26.30
	2427	Mcs0	20	22.29	26.29
	2432	Mcs0	21	23.37	27.37
	2437	Mcs0	22	24.30	28.30
	2442	Mcs0	22	24.36	28.36
	2447	Mcs0	21	23.59	27.59
	2452	Mcs0	21	23.65	27.65
	2457	Mcs0	19	21.39	25.39
	2462	Mcs0	19	21.21	25.21
ax 40	2422	Mcs0	15	17.60	21.60
	2437	Mcs0	16	18.83	22.83
	2452	Mcs0	17	19.84	23.84

Result

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

* Gated EIRP shown in the Annex is the conducted measurement

5.5 §15.247(d) 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 table show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown within the Annex are plot(s) with the EUT tuned to the upper and lower channels. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must be attenuated 30 dB below the highest power spectral density level measured within the authorized band as measured with a 100 kHz RBW.

Result

Conducted spurious emissions were attenuated 30 dB or more below the fundamental; therefore, the EUT complies with the specification.

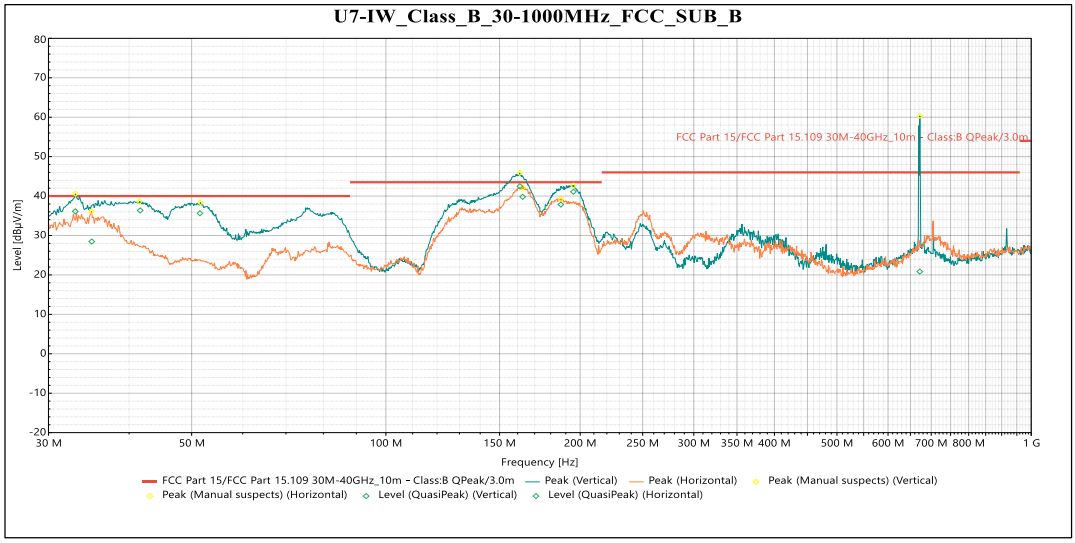
5.5.2 Radiated Spurious Emissions in the Restricted Bands of §15.205

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental emissions was investigated to measure any radiated emissions in the restricted bands. The following tables show measurements of any emissions that fell into the restricted bands of §15.205. The tables show the worst-case emissions measured from the EUT. For frequencies above 18.0 GHz, a measurement distance of 1 meter was used. The noise floor was a minimum of 6 dB below the limits. The emissions in the restricted bans must meet the limits specified in §15.209. Tabular data for each of the spurious emissions is shown below for each of the units. Plots of the band edges are also shown.

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

Result

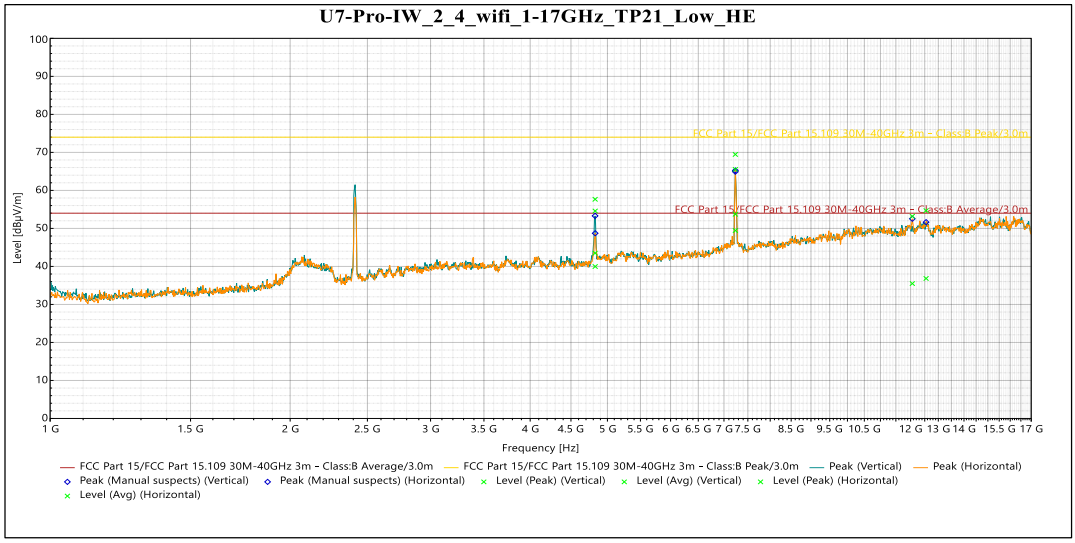
All emissions in the restricted bands of §15.205 met the limits specified in §15.209; therefore, the EUT complies with the specification.



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
33.017 MHz	36.111	40	-3.889	204	1.129	Vertical	-9.415
41.61 MHz	36.345	40	-3.655	359	1.129	Vertical	-15.523
51.502 MHz	35.629	40	-4.371	359	1.129	Vertical	-21.223
161.28 MHz	42.492	43.5	-1.008	358	1.132	Vertical	-16.039
195.23 MHz	41.094	43.5	-2.406	353	1.129	Vertical	-15.934
672.08 MHz	20.853	46	-25.147	83	1.667	Vertical	-6.922
35.016 MHz	28.469	40	-11.531	171	3.65	Horizontal	-10.579
162.92 MHz	39.812	43.5	-3.688	103	1.489	Horizontal	-16.105
186.7 MHz	37.853	43.5	-5.647	274	1.712	Horizontal	-16.813

Table 4: Radiated Emissions 30 – 1000 MHz



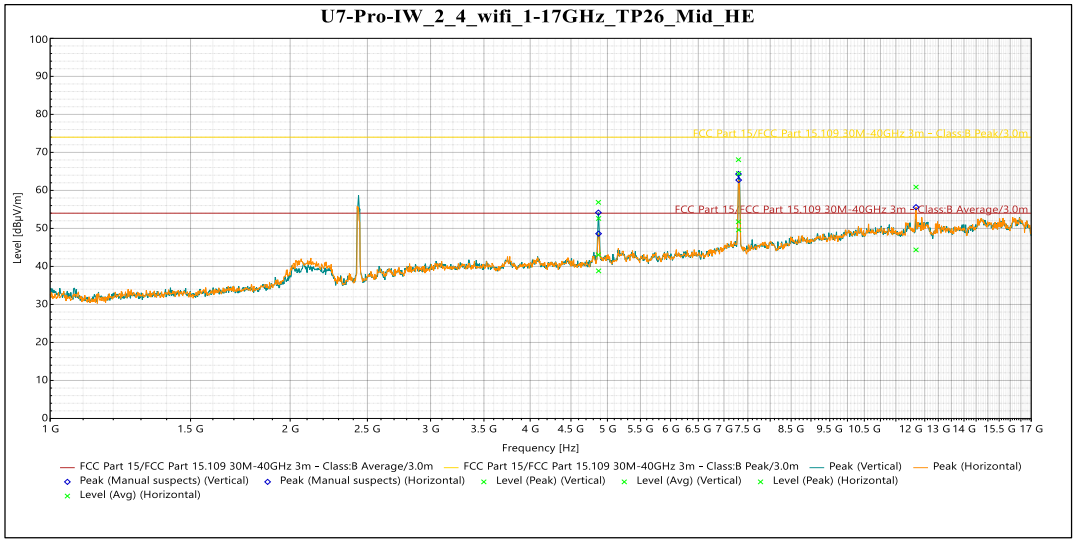
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8256 GHz	57.659	74	-16.341	33	1.63	Vertical	4.371
7.2345 GHz	69.458	74	-4.542	7	2.529	Vertical	11.198
12.55 GHz	54.67	74	-19.33	113	2.351	Vertical	16.629
4.8262 GHz	54.582	74	-19.418	33	1.811	Horizontal	4.369
7.2344 GHz	65.515	74	-8.485	50	2.531	Horizontal	11.197
12.061 GHz	53.193	74	-20.807	180	1.63	Horizontal	15.522

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8256 GHz	43.486	54	-10.514	33	1.63	Vertical	4.371
7.2345 GHz	53.72	54	-0.28	7	2.529	Vertical	11.198
12.55 GHz	36.834	54	-17.166	113	2.351	Vertical	16.629
4.8262 GHz	39.969	54	-14.031	33	1.811	Horizontal	4.369
7.2344 GHz	49.44	54	-4.56	50	2.531	Horizontal	11.197
12.061 GHz	35.484	54	-18.516	180	1.63	Horizontal	15.522

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



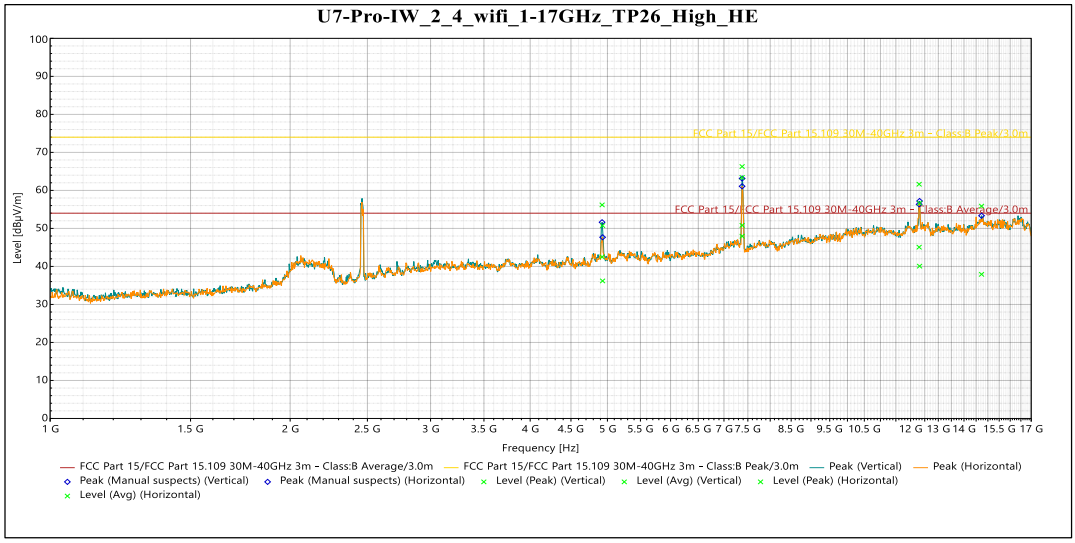
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8711 GHz	56.858	74	-17.142	22	1.633	Vertical	4.337
7.3 GHz	68.065	74	-5.935	54	2.35	Vertical	11.067
4.8741 GHz	52.613	74	-21.387	17	2.347	Horizontal	4.341
7.3038 GHz	64.452	74	-9.548	305	1.627	Horizontal	11.025
12.19 GHz	60.872	74	-13.128	60	1.989	Horizontal	15.546

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8711 GHz	43.052	54	-10.948	22	1.633	Vertical	4.337
7.3 GHz	51.741	54	-2.259	54	2.35	Vertical	11.067
4.8741 GHz	38.82	54	-15.18	17	2.347	Horizontal	4.341
7.3038 GHz	49.597	54	-4.403	305	1.627	Horizontal	11.025
12.19 GHz	44.354	54	-9.646	60	1.989	Horizontal	15.546

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



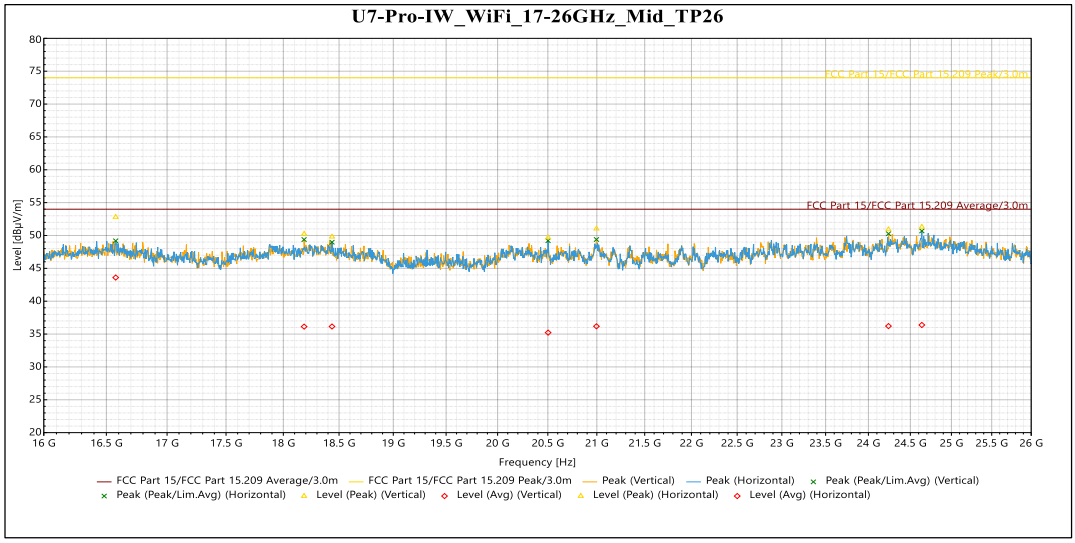
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.9238 GHz	56.176	74	-17.824	30	1.5	Vertical	4.555
7.3771 GHz	66.266	74	-7.734	54	2.709	Vertical	10.108
12.315 GHz	56.642	74	-17.358	345	3.808	Vertical	16.705
14.729 GHz	55.858	74	-18.142	74	1.63	Vertical	17.2
4.9304 GHz	50.744	74	-23.256	359	2.17	Horizontal	4.604
7.377 GHz	63.399	74	-10.601	58	3.79	Horizontal	10.11
12.3 GHz	61.62	74	-12.38	329	1.632	Horizontal	16.775

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.9238 GHz	42.495	54	-11.505	30	1.5	Vertical	4.555
7.3771 GHz	50.804	54	-3.196	54	2.709	Vertical	10.108
12.315 GHz	40.066	54	-13.934	345	3.808	Vertical	16.705
14.729 GHz	37.922	54	-16.078	74	1.63	Vertical	17.2
4.9304 GHz	36.176	54	-17.824	359	2.17	Horizontal	4.604
7.377 GHz	47.955	54	-6.045	58	3.79	Horizontal	10.11
12.3 GHz	45.06	54	-8.94	329	1.632	Horizontal	16.775

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



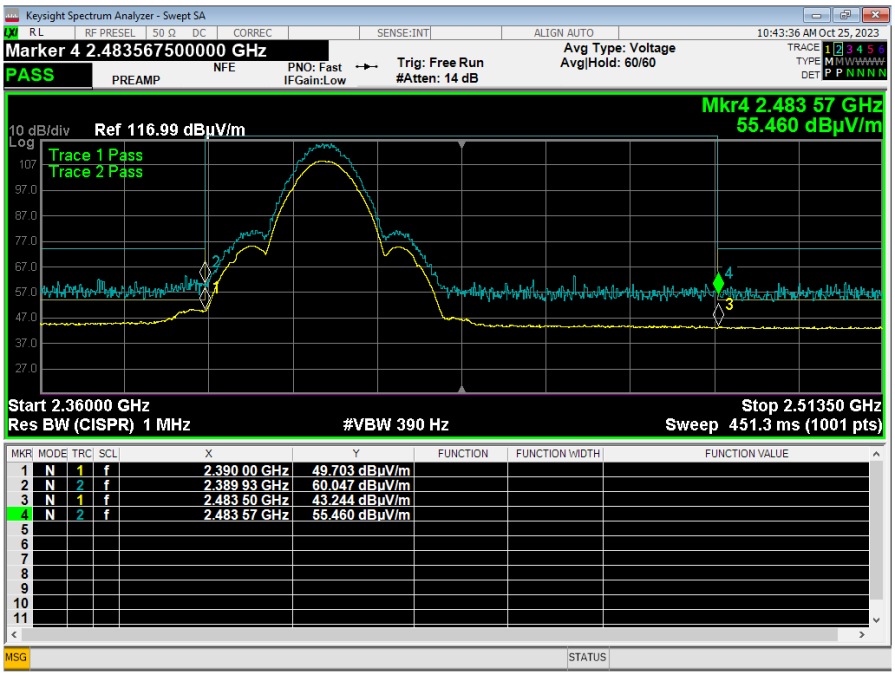
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
18.185 GHz	50.226	74	-23.774	237	Vertical	-0.527
20.996 GHz	51.03	74	-22.97	282	Vertical	0.815
24.238 GHz	50.922	74	-23.078	168	Vertical	1.21
16.576 GHz	52.81	74	-21.19	10	Horizontal	0.051
18.436 GHz	49.801	74	-24.199	336	Horizontal	-0.273
20.503 GHz	49.691	74	-24.309	323	Horizontal	0.382
24.639 GHz	51.3	74	-22.7	63	Horizontal	1.444

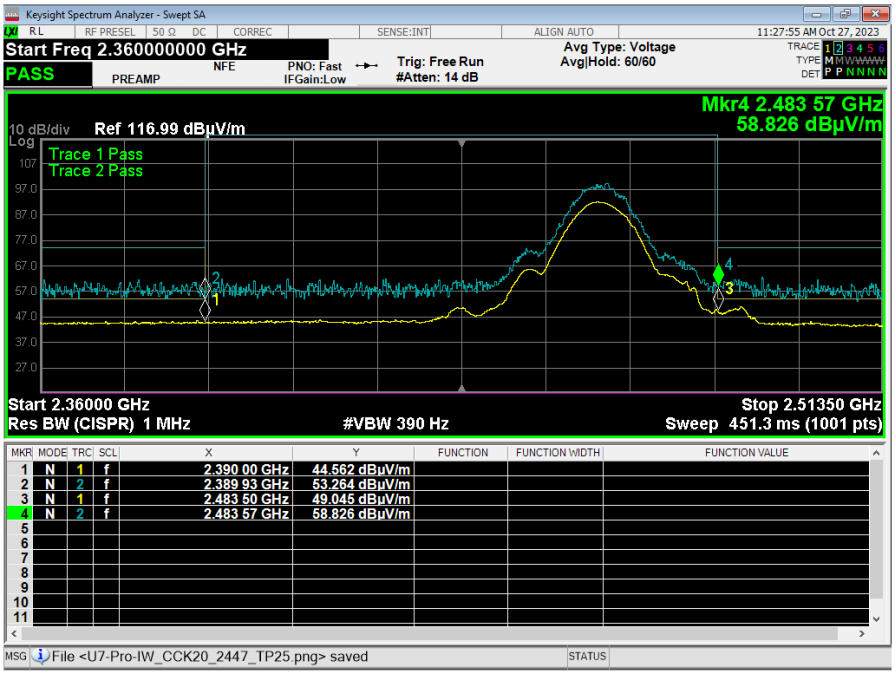
Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
18.185 GHz	36.134	54	-17.866	237	Vertical	-0.527
20.996 GHz	36.178	54	-17.822	282	Vertical	0.815
24.238 GHz	36.211	54	-17.789	168	Vertical	1.21
16.576 GHz	43.599	54	-10.401	10	Horizontal	0.051
18.436 GHz	36.151	54	-17.849	336	Horizontal	-0.273
20.503 GHz	35.217	54	-18.783	323	Horizontal	0.382
24.639 GHz	36.383	54	-17.617	63	Horizontal	1.444

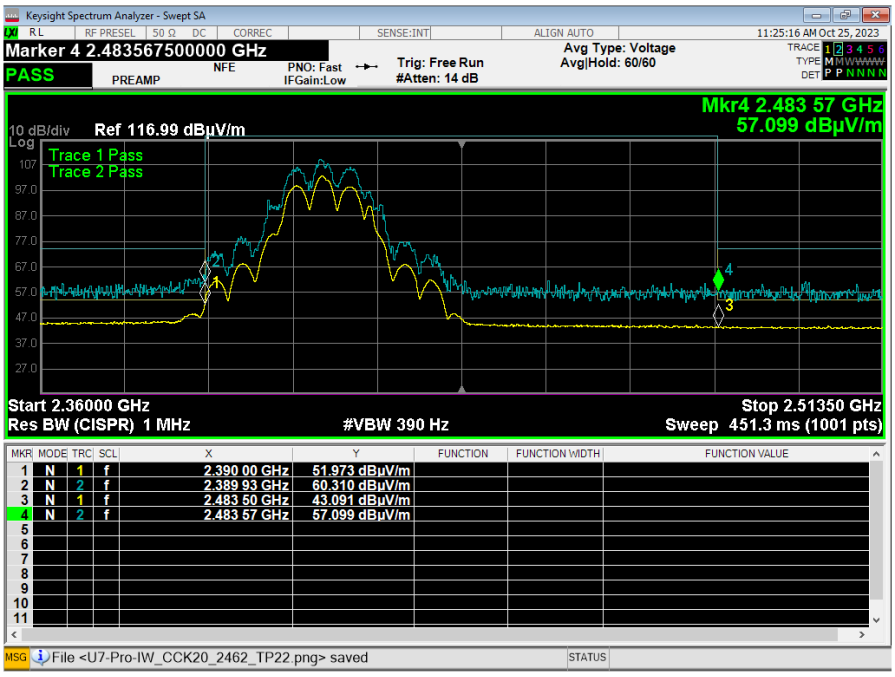
Table 8: Radiated Emissions 17 – 26 GHz at the Middle Frequency (worse case)



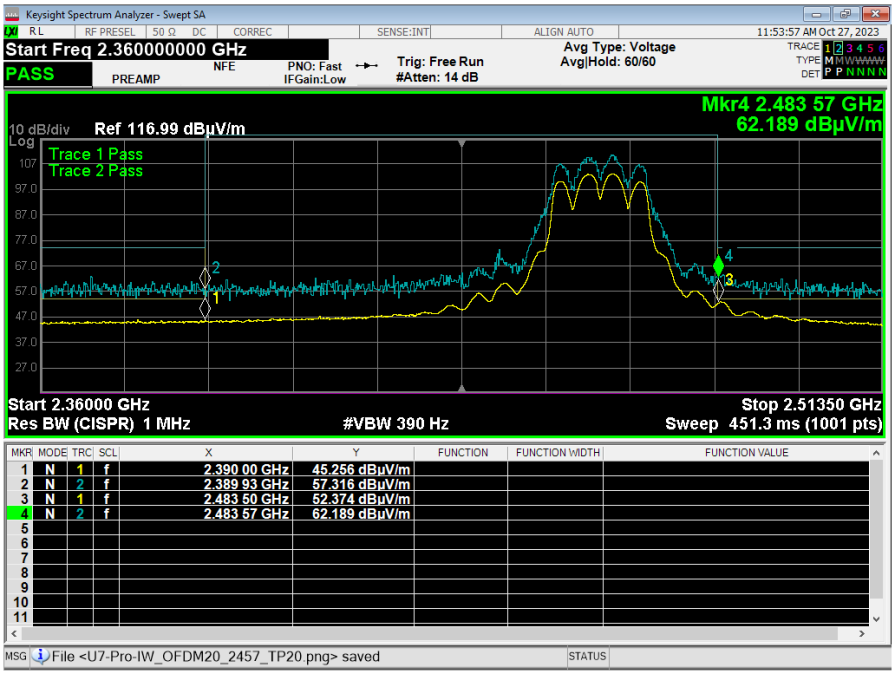
Graph 3: Radiated Lower Band Edge Plot b Mode 20 MHz



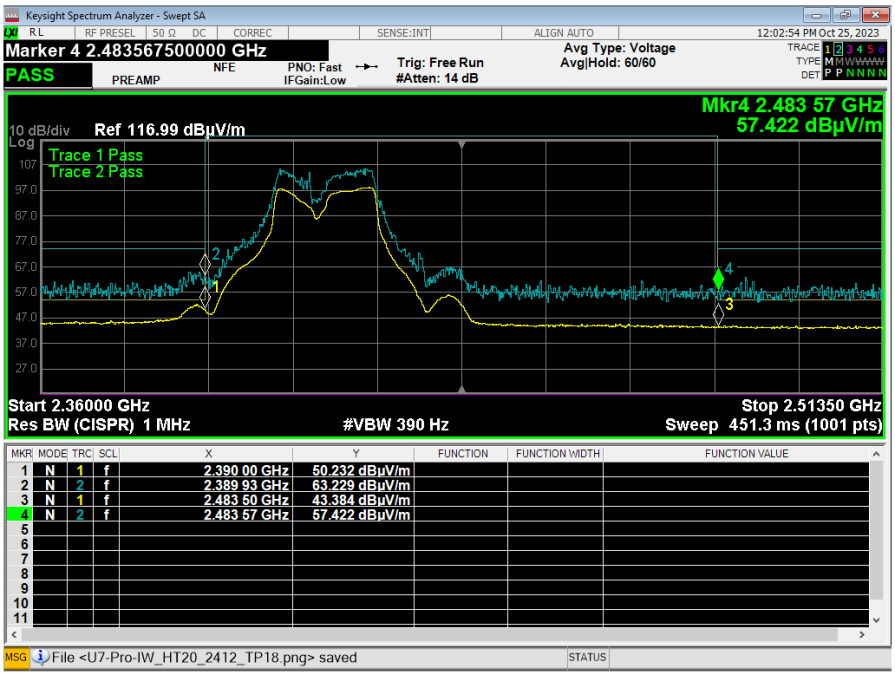
Graph 4: Radiated Upper Band Edge Plot b Mode 20 MHz



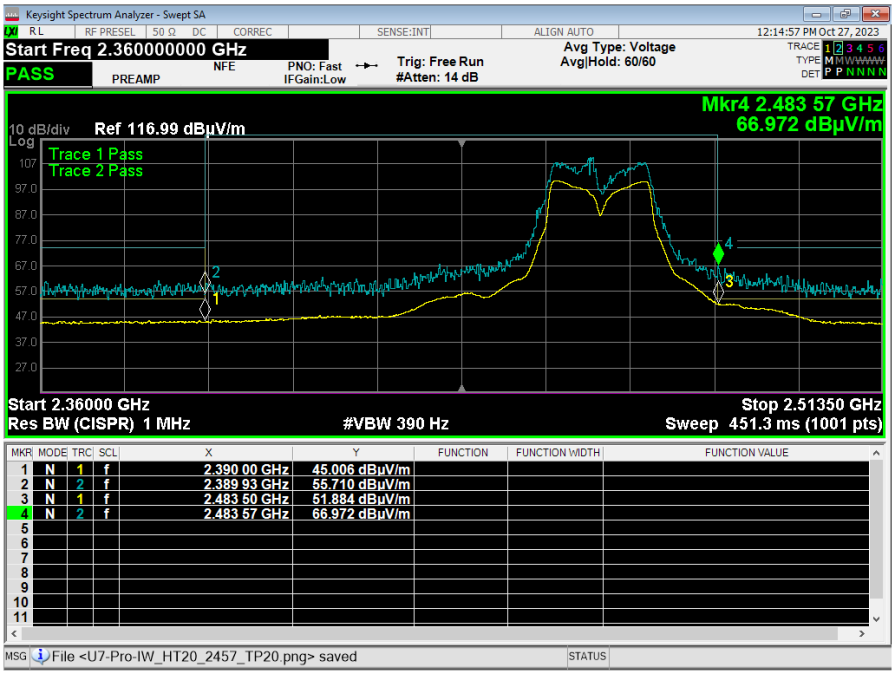
Graph 5: Radiated Lower Band Edge Plot g Mode 20 MHz



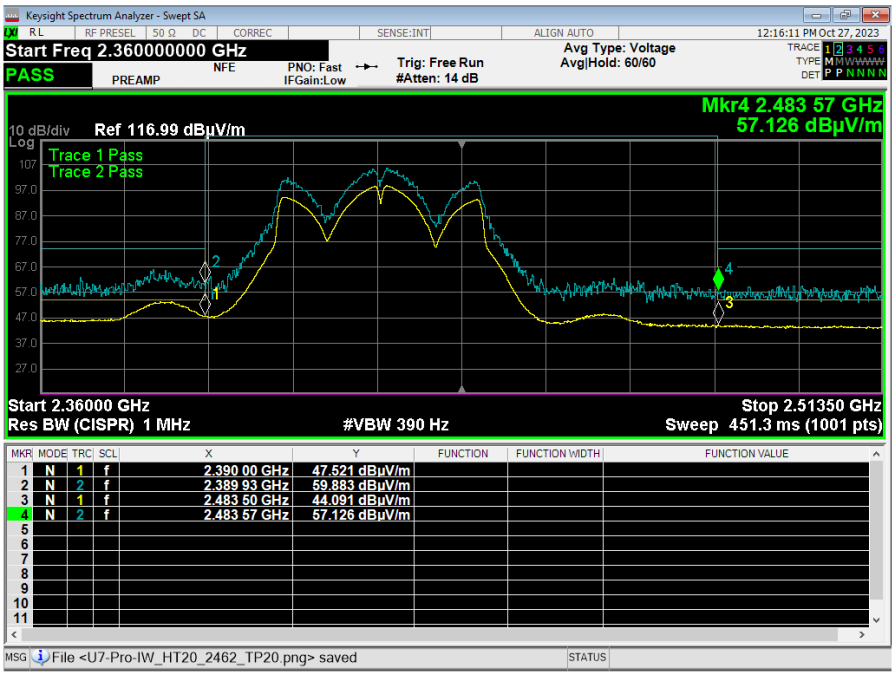
Graph 6: Radiated Upper Band Edge Plot g Mode 20 MHz



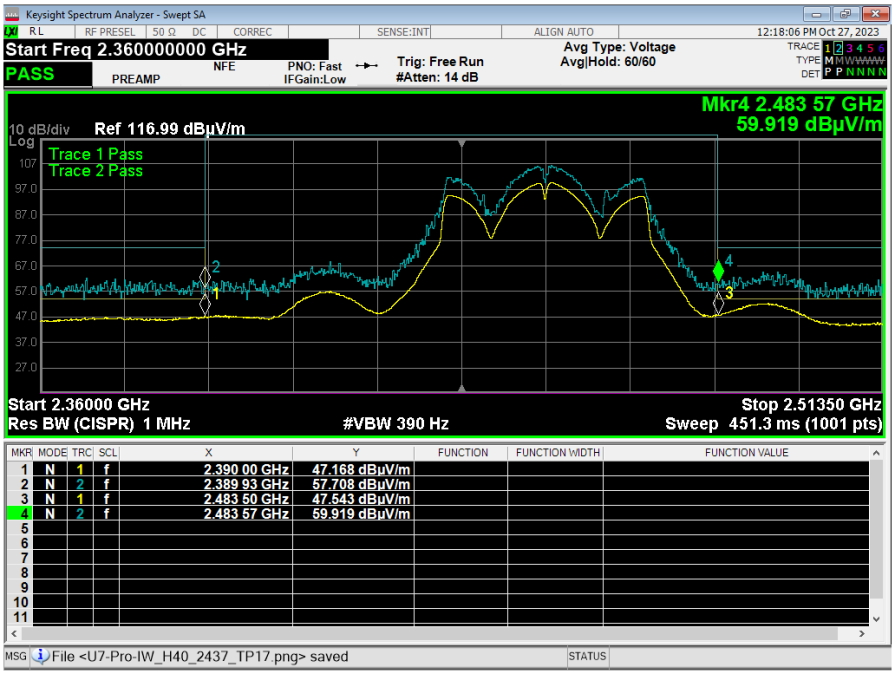
Graph 7: Radiated Lower Band Edge Plot n Mode 20 MHz



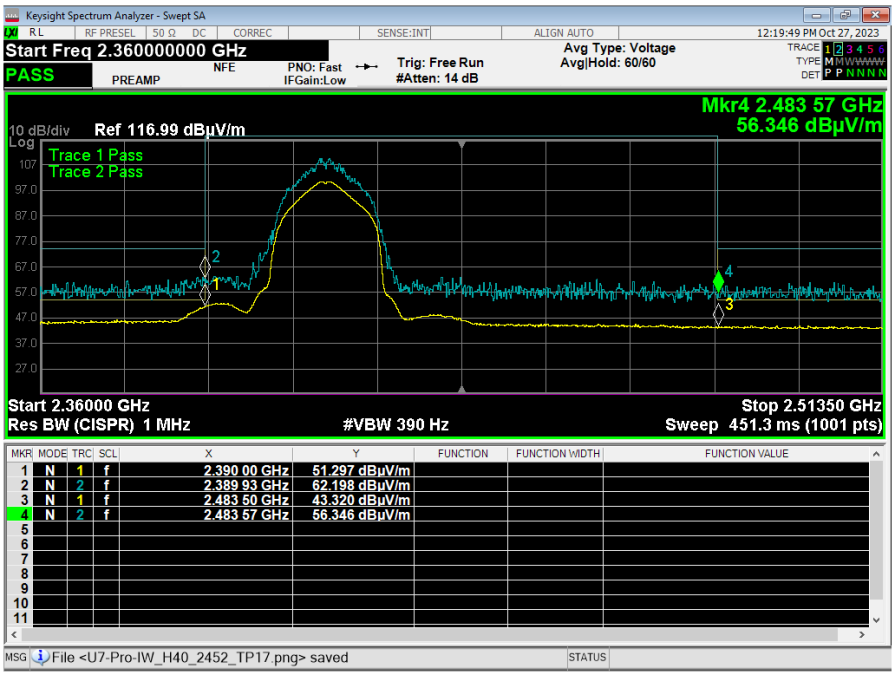
Graph 8: Radiated Upper Band Edge Plot n Mode 20 MHz



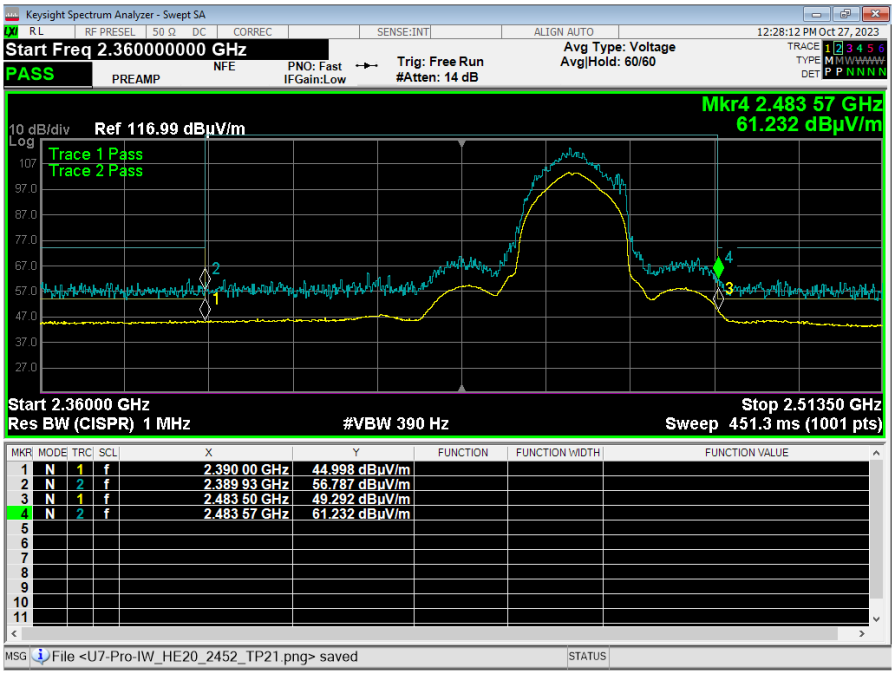
Graph 9: Radiated Lower Band Edge Plot n Mode 40 MHz



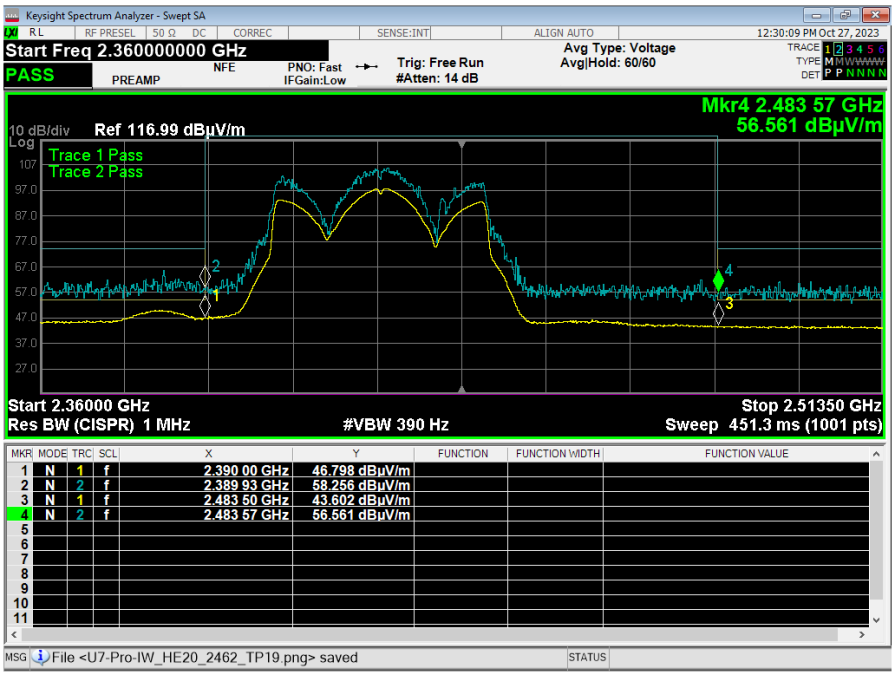
Graph 10: Radiated Upper Band Edge Plot n Mode 40 MHz



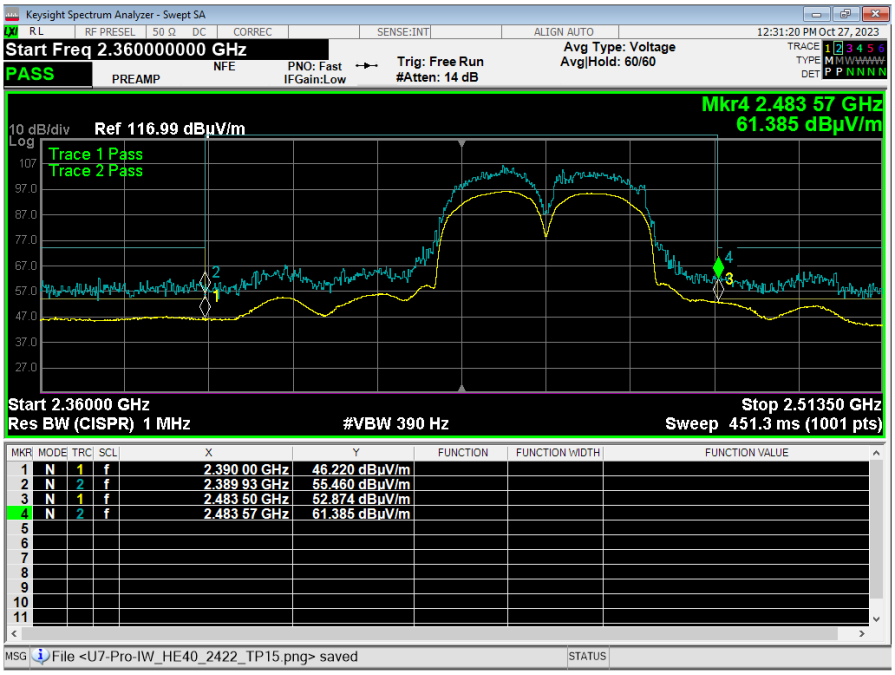
Graph 11: Radiated Lower Band Edge Plot ax Mode 20 MHz



Graph 12: Radiated Upper Band Edge Plot ax Mode 20 MHz



Graph 13: Radiated Lower Band Edge Plot ax Mode 40 MHz



Graph 14: Radiated Upper Band Edge Plot ax Mode 40 MHz

5.6 §15.247(e) Maximum Average Power Spectral Density

All chains were measured and summed under the guidance of KDB 558074 Section 8.4. and KDB 66291 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 8 dBm in any 3 kHz band during any time interval of continuous transmission. The antenna gain is 4 dBi + Array gain of 3.01 dB which is a total of 7.01 dBi.

Mode	Frequency (MHz)	Measurement (dBm)	Criteria (dBm)
b	2412	-1.20	8.0
	2437	1.65	8.0
	2462	1.34	8.0
g	2412	-11.26	8.0
	2437	-7.44	8.0
	2462	-10.65	8.0
n 20	2412	-12.71	8.0
	2437	-8.91	8.0
	2462	-10.69	8.0
n 40	2422	-17.94	8.0
	2437	-16.31	8.0
	2452	-16.77	8.0
ax 20	2412	-15.66	8.0
	2437	-9.28	8.0
	2462	-12.72	8.0
ax 40	2422	-17.84	8.0
	2437	-16.95	8.0
	2452	-16.89	8.0

Result

The maximum average power spectral density was less than the limit of 8 dBm; therefore, the EUT complies with the specification.

-- End of Test Report --