UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-E7AD
ISED ID	6545A-E7AD
Equipment Under Test	E7-Audience
Test Report Serial Number	TR9805_02
Date of Test(s)	16 - 18 July; 25 September 2024 28 January; 24 - 26 February 2025
Report Issue Date	24 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.

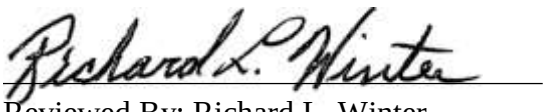
Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UBIQUITI
Model Number	E7-Audience
FCC ID	SWX-E7AD
ISED ID	6545A-E7AD

On this 24th 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	24 February 2025
02	Amended Data in Section 5.3, Added RU's PSD Data in Section 5.6 and Added Plot in Section 5.6.3	26 February 2025

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-Audience
Serial Number	FE60A0
Dimensions (cm)	47.4 x 26.5 x 9.4

2.2 Description of EUT

The E7-Audience is a WiFi 7 access point designed for high-density environments with (1) 10GbE PoE port and (1) 1GbE PoE port. The E7-Audience transmits in the 5 GHz, and 6 GHz frequency bands using integral antennas and is powered by an 802.3at PoE power adapter.

The E7-Audience has a low gain mode with the antenna gain of 11 dBm and a high gain mode with the antenna gain of 15 dBm. For Output Power (Section 5.4) and PSD (Section 5.6) both low gain and high gain antenna modes are documented. For the remaining test, the high gain mode is characterized as worst case scenario.

The E7-Audience uses Transmit Power (TP) Control protocol and is included in the power tables of Section 5.4.

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	be (EHT20)	6595, 6615, 6635, 6655, 6675, 6695	TP22
		6715, 6735, 6755, 6775, 6795, 6815, 6835, 6855	TP20
	be (EHT40)	6605, 6645, 6685	TP21
		6725, 6765, 6805	TP20
		6845	TP21
	be (EHT80)	6625, 6705	TP21
		6865	TP20
	be (EHT160)	6665	TP21

		6825	TP20
	be (EHT320)	6745	TP20

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-Audience (Note 1) SN: FE60A0	Wireless Access Point	See Section 2.4
BN: UBIQUITI MN: U-POE-at SN: N/A	PoE Injector Power Supply	Shielded or Un-shielded Cat 5e cable (Note 2)
BN: Dell MN: XPS 13 SN: N/A	Laptop Computer	Shielded or 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 E7-Audience 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 Mains to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.6 – 23.4 °C
Humidity	21.7 – 26.8 %
Barometric Pressure	1010 mBar

2.6 Operating Modes

The E7-Audience was tested using test software in order to enable to constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 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

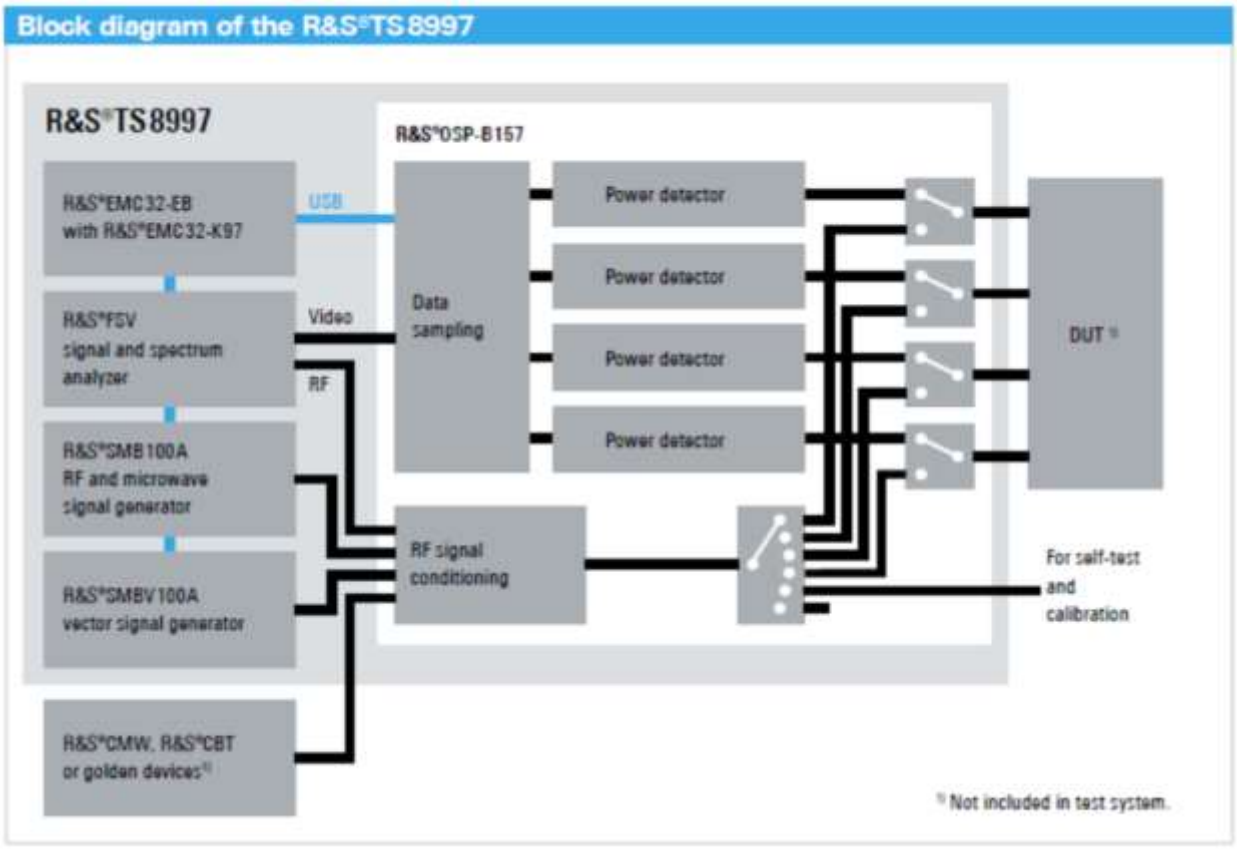


Diagram 1: Test Configuration Block Diagram

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	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(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions[1]	0.009 to 40000	N/A Note[2]
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[1]	6535 to 6865	Compliant

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.
Note [2]: 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	UCL	Revision 1	UCL-3107	N/A	N/A

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

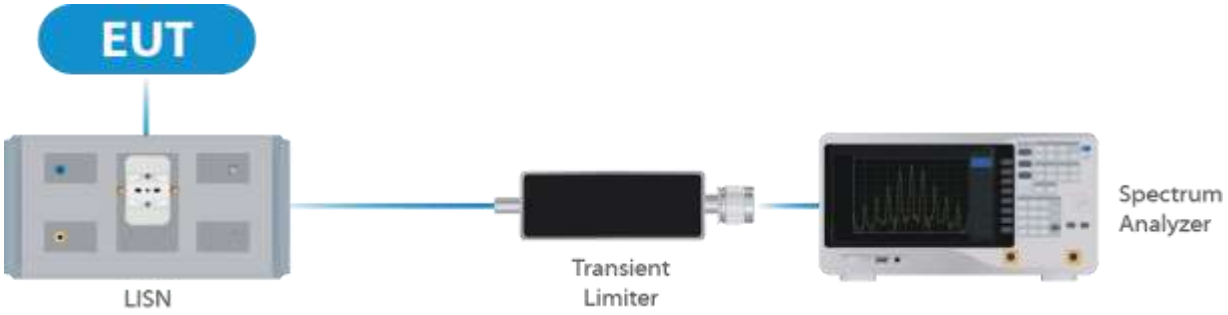


Figure 1: Conducted Emissions Test

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	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

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

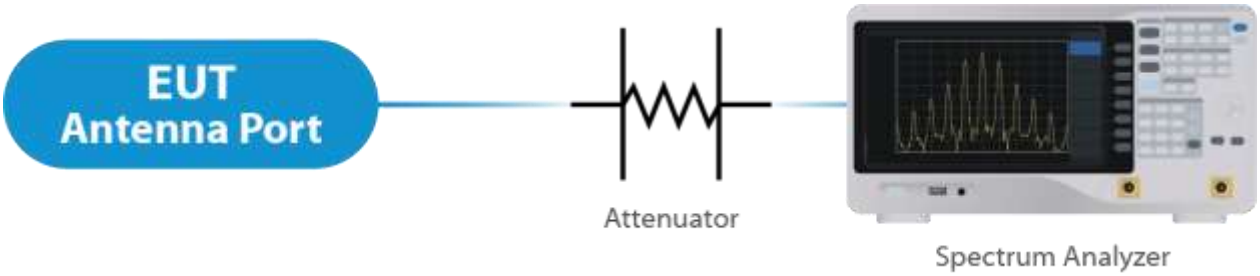


Figure 2: Direct Connect at the Antenna Port Test

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	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	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	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

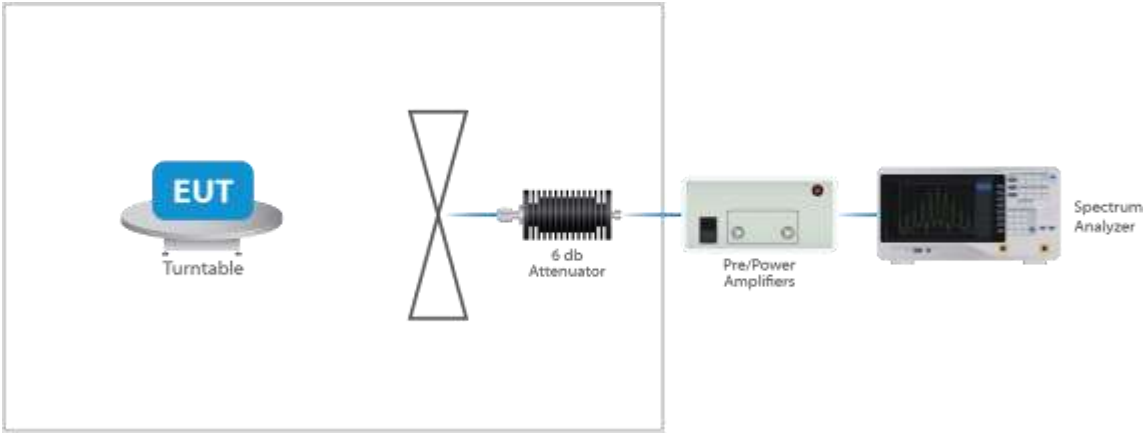


Figure 3: Radiated Emissions Test

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. Per the manufacturer, the Maximum gain of the antenna per chain is 15 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;

Low Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 11 dBi = 17.02 dBi.

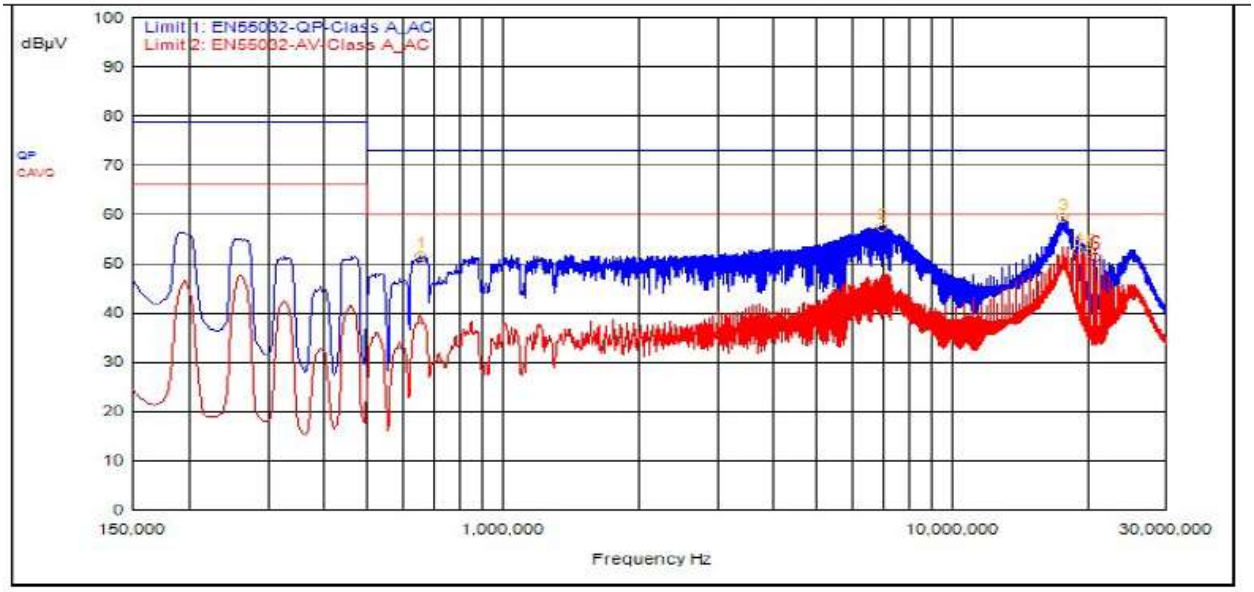
High Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 15 dBi = 21.02 dBi.

Results

The EUT complied with the specification

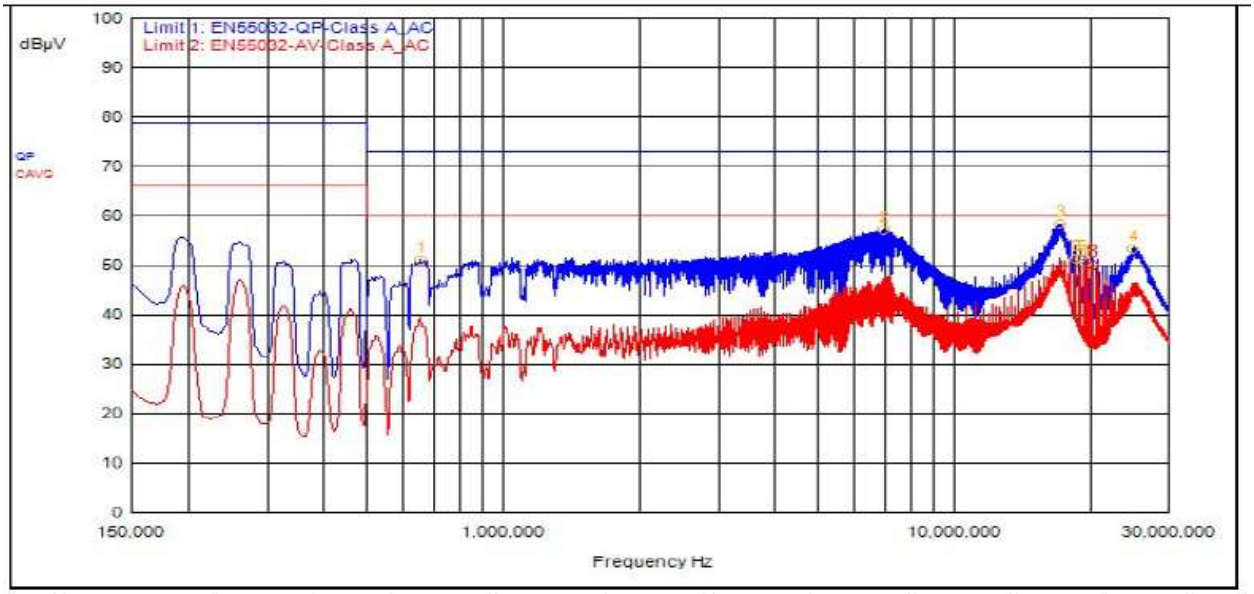
5.2 Conducted Emissions at Mains Ports Data

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
3	17.646	9.68			QPeak	49.79	59.47	73.00	-13.53			
2	6.999	9.63			QPeak	47.91	57.54	73.00	-15.46			
1	654,000kHz	9.50			QPeak	42.07	51.57	73.00	-21.43			
4	19.137	9.67			C_AVG	43.24	52.91			60.00	-7.09	
5	20.379	9.69			C_AVG	42.58	52.27			60.00	-7.73	
6	20.877	9.71			C_AVG	41.75	51.46			60.00	-8.54	

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	17.160	9.78			QPeak	48.53	58.31	73.00	-14.69			
2	6.999	9.63			QPeak	47.56	57.19	73.00	-15.81			
4	24.990	10.19			QPeak	43.15	53.34	73.00	-19.66			
1	654,000kHz	9.56			QPeak	41.62	51.18	73.00	-21.82			
5	19.146	9.82			C_AVG	41.58	51.40			60.00	-8.60	
6	18.648	9.81			C_AVG	41.56	51.37			60.00	-8.63	
7	19.644	9.82			C_AVG	40.85	50.67			60.00	-9.33	
8	20.391	9.86			C_AVG	40.15	50.01			60.00	-9.99	

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.

5.3.1 Low Gain Mode

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
EHT 20	6595	19.5	22.2
EHT 20	6715	19.3	23.0
EHT 20	6855	19.3	23.0
EHT 40	6605	38.5	43.0
EHT 40	6725	39.0	42.3
EHT 40	6845	38.5	42.5
EHT 80	6625	79.0	93.5
EHT 80	6705	79.0	91.0
EHT 80	6865	79.0	88.5
EHT 160	6665	160.0	170.0
EHT 160	6825	160.0	173.0
EHT 320	6745	317.5	347.5

5.3.2 High Gain Mode

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
EHT 20	6595	19.3	22.7
EHT 20	6715	19.3	22.7
EHT 20	6855	19.3	22.8
EHT 40	6605	38.5	43.3
EHT 40	6725	38.5	42.8
EHT 40	6845	39.0	43.5
EHT 80	6625	79.0	90.0

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
EHT 80	6705	79.0	88.0
EHT 80	6865	79.0	87.5
EHT 160	6665	162.5	169.0
EHT 160	6825	162.5	170.0
EHT 320	6745	317.5	342.5

Result

All chains were tested and the highest bandwidth per chain is reported above. For the 320 MHz emissions bandwidth the 99% bandwidth was used. Please see Annex for all bandwidth measurements.

5.4 §15.407(a)(4) Maximum 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.

Low Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 11 dBi = 17.02 dBi.

High Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 15 dBi = 21.02 dBi.

The maximum average RF conducted output power measured for this device was 24.96 dBm or 313.33 mW (Low Gain Mode). The limit is 36 dBm EIRP, or 4 Watt EIRP. The antenna has a gain of 11 dBi in the Low Gain Mode and 15 dBi in the High Gain Mode.

5.4.1 Low Gain Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	EIRP	Antenna Gain
EHT 20	6595	Mcs0_Nss4	22	24.72	35.72	11
EHT 20	6715	Mcs0_Nss4	20	24.31	35.31	11
EHT 20	6855	Mcs0_Nss4	20	24.20	35.20	11
EHT 40	6605	Mcs0_Nss4	21	24.54	35.54	11
EHT 40	6725	Mcs0_Nss4	20	24.06	35.06	11
EHT 40	6845	Mcs0_Nss4	21	24.82	35.82	11
EHT 80	6625	Mcs0_Nss4	21	24.49	35.49	11
EHT 80	6705	Mcs0_Nss4	21	24.96	35.96	11
EHT 80	6865	Mcs0_Nss4	20	23.99	34.99	11
EHT 160	6665	Mcs0_Nss4	21	24.89	35.89	11
EHT 160	6825	Mcs0_Nss4	20	24.05	35.05	11
EHT 320	6745	Mcs0_Nss4	20	24.34	35.34	11

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	EIRP	Antenna Gain
EHT 20	6595	Mcs0_Nss1	14	19.03	30.03	11
EHT 20	6715	Mcs0_Nss1	14	19.64	30.64	11
EHT 20	6855	Mcs0_Nss1	15	19.24	30.24	11
EHT 40	6605	Mcs0_Nss1	17	21.77	32.77	11
EHT 40	6725	Mcs0_Nss1	17	22.25	33.25	11
EHT 40	6845	Mcs0_Nss1	18	21.89	32.89	11
EHT 80	6625	Mcs0_Nss1	21	24.49	35.49	11
EHT 80	6705	Mcs0_Nss1	21	24.96	35.96	11
EHT 80	6865	Mcs0_Nss1	20	23.99	34.99	11
EHT 160	6665	Mcs0_Nss1	21	24.89	35.89	11
EHT 160	6825	Mcs0_Nss1	20	24.05	35.05	11
EHT 320	6745	Mcs0_Nss1	20	24.34	35.34	11

5.4.2 High Gain Mode

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	EIRP	Antenna Gain
EHT 20	6595	Mcs0_Nss4	17	20.62	35.62	15
EHT 20	6715	Mcs0_Nss4	16	20.54	35.54	15
EHT 20	6855	Mcs0_Nss4	16	20.42	35.42	15
EHT 40	6605	Mcs0_Nss4	17	20.41	35.41	15
EHT 40	6725	Mcs0_Nss4	16	20.33	35.33	15
EHT 40	6845	Mcs0_Nss4	16	20.15	35.15	15
EHT 80	6625	Mcs0_Nss4	17	20.38	35.38	15
EHT 80	6705	Mcs0_Nss4	16	20.50	.5.50	15
EHT 80	6865	Mcs0_Nss4	16	20.83	35.83	15
EHT 160	6665	Mcs0_Nss4	16	20.01	35.01	15
EHT 160	6825	Mcs0_Nss4	16	20.49	35.49	15

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	EIRP	Antenna Gain
EHT 320	6745	Mcs0_Nss4	16	20.56	35.56	15

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	EIRP	Antenna Gain
EHT 20	6595	Mcs0_Nss1	11	14.93	29.93	15
EHT 20	6715	Mcs0_Nss1	10	14.80	29.80	15
EHT 20	6855	Mcs0_Nss1	10	14.56	29.56	15
EHT 40	6605	Mcs0_Nss1	14	17.76	32.76	15
EHT 40	6725	Mcs0_Nss1	14	17.68	32.68	15
EHT 40	6845	Mcs0_Nss1	14	18.35	33.35	15
EHT 80	6625	Mcs0_Nss1	17	20.38	35.38	15
EHT 80	6705	Mcs0_Nss1	16	20.45	35.45	15
EHT 80	6865	Mcs0_Nss1	16	20.83	35.83	15
EHT 160	6665	Mcs0_Nss1	16	20.01	35.01	15
EHT 160	6825	Mcs0_Nss1	16	20.49	35.49	15
EHT 320	6745	Mcs0_Nss1	16	20.56	35.56	15

Result

In the configuration tested, the maximum average RF outpower was less than 4 watt EIRP; therefore, the EUT compiled 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

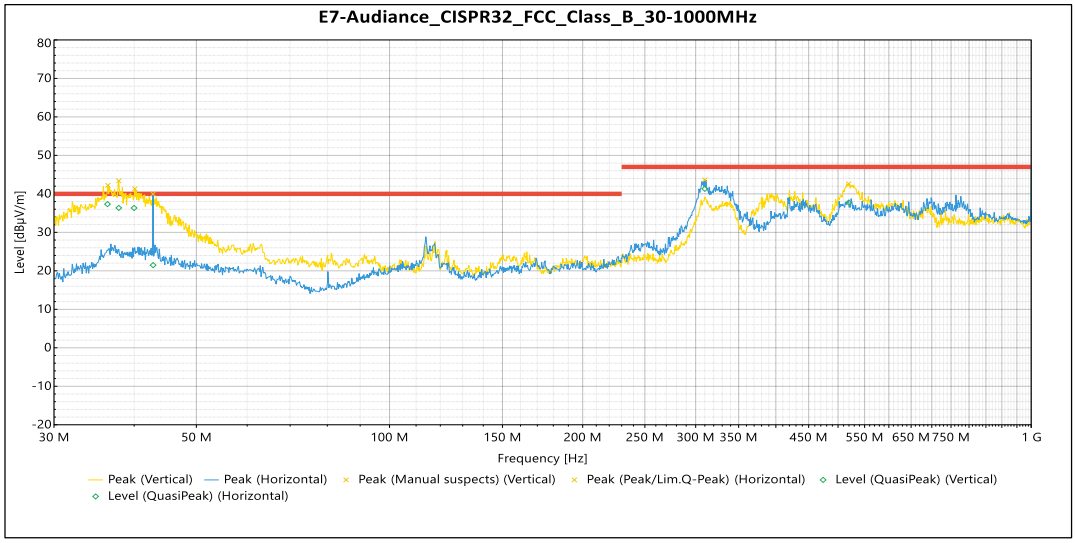
5.5.1 Radiated Spurious Emissions in the Restricted Bands of § 15.205

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

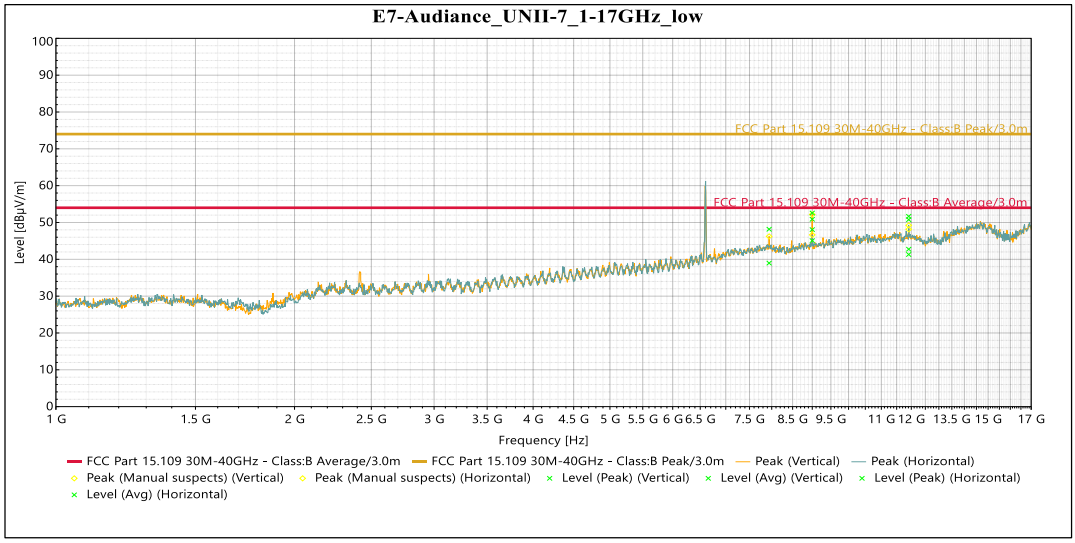
All emissions in the restricted bands of § 15.205 met the limits specified in § 15.209; therefore, the EUT complies with the specification.



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
36.35 MHz	37.33	30	-2.67	43	1.129	Vertical	-9.91
37.85 MHz	36.35	30	-3.65	88	1.306	Vertical	-9.42
39.99 MHz	36.33	30	-3.67	80	1.126	Vertical	-8.84
519.77 MHz	37.74	30	-9.26	117	1.489	Vertical	-2.52
42.81 MHz	21.48	30	-18.52	143	1.897	Horizontal	-8.30
310.01 MHz	41.31	30	-5.69	334	1.131	Horizontal	-7.04

Table 4: Radiated Emissions 30 – 1000 MHz



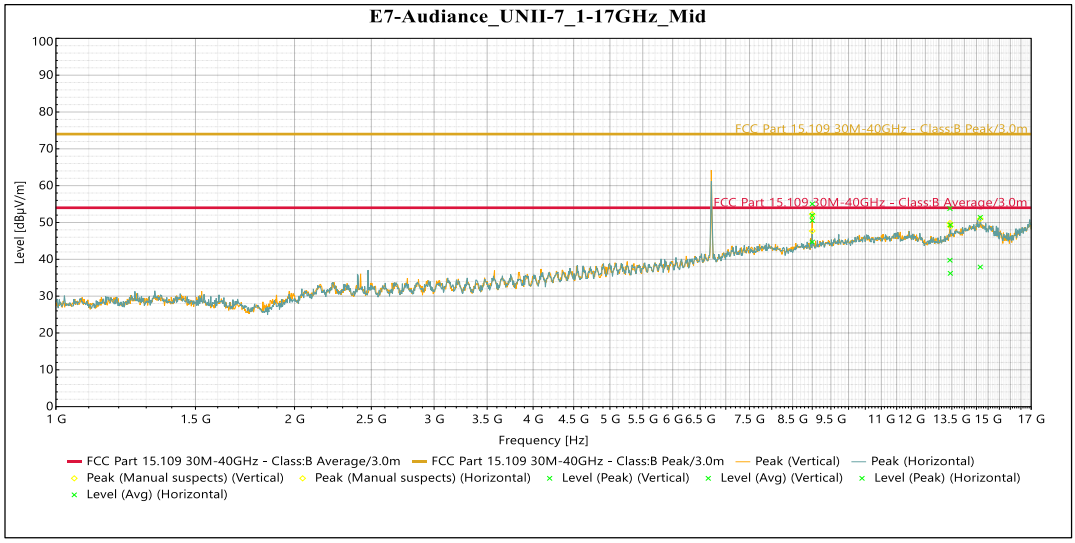
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
7.94 GHz	48.17	74.0	-25.83	185	3.39	Vertical	7.88
9.00 GHz	52.58	74.0	-21.42	205	1.993	Vertical	9.43
11.91 GHz	51.67	74.0	-22.33	205	1.5	Vertical	12.11
9.00 GHz	50.87	74.0	-23.13	145	1.5	Horizontal	9.43
11.91 GHz	50.77	74.0	-23.23	234	1.5	Horizontal	12.11

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
7.94 GHz	38.97	54.0	-15.03	185	3.39	Vertical	7.88
9.00 GHz	48.06	54.0	-5.94	205	1.993	Vertical	9.43
11.91 GHz	42.74	54.0	-11.26	205	1.5	Vertical	12.11
9.00 GHz	45.08	54.0	-8.92	145	1.5	Horizontal	9.43
11.91 GHz	41.31	54.0	-12.69	234	1.5	Horizontal	12.11

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



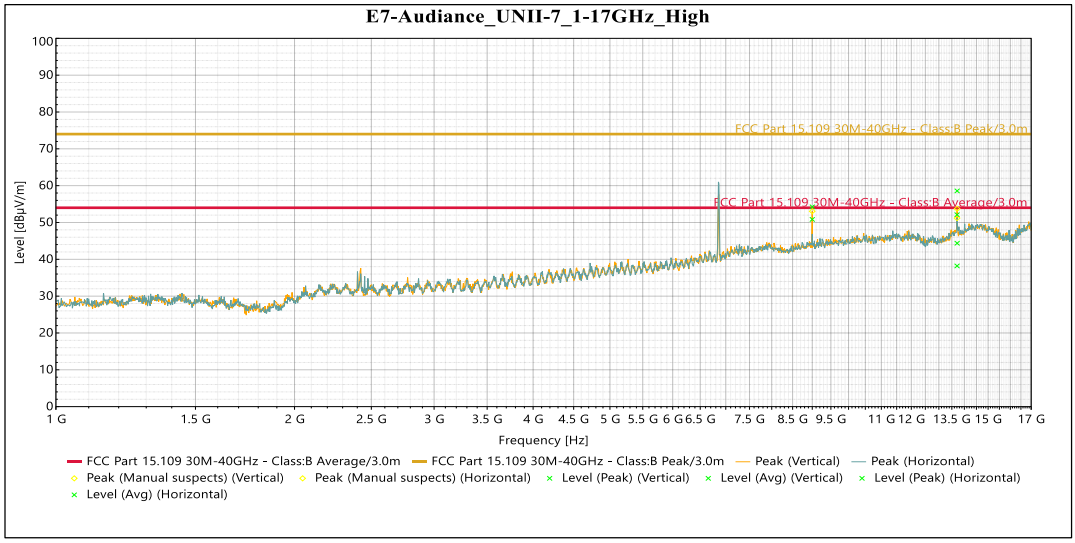
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.00 GHz	55.04	74.0	-18.96	214	2.256	Vertical	9.43
13.43 GHz	53.79	74.0	-20.21	205	1.5	Vertical	12.82
9.00 GHz	50.53	74.0	-23.47	142	1.5	Horizontal	9.43
13.44 GHz	49.34	74.0	-24.66	234	3.497	Horizontal	12.90
14.66 GHz	51.39	74.0	-22.61	360	1.5	Horizontal	14.86

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.00 GHz	51.93	54.0	-2.07	214	2.256	Vertical	9.43
13.43 GHz	39.76	54.0	-14.24	205	1.5	Vertical	12.82
9.00 GHz	44.69	54.0	-9.31	142	1.5	Horizontal	9.43
13.44 GHz	36.19	54.0	-17.81	234	3.497	Horizontal	12.90
14.66 GHz	37.91	54.0	-16.09	360	1.5	Horizontal	14.86

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



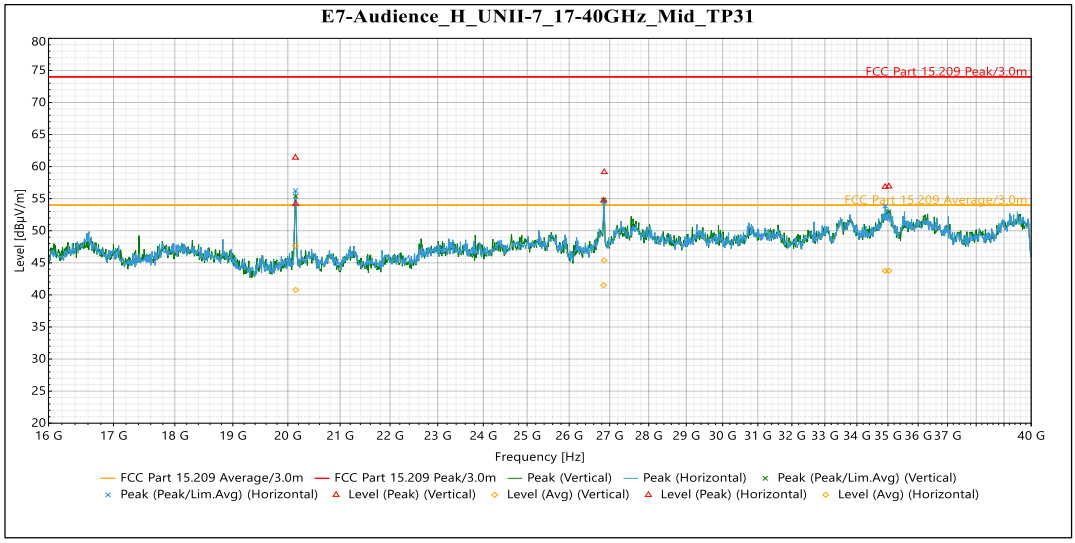
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.00 GHz	24.25	74.0	-19.75	215	2.256	Vertical	9.43
13.71 GHz	58.58	74.0	-15.42	205	1.5	Vertical	13.77
13.71 GHz	52.11	74.0	-21.89	145	3.387	Horizontal	13.76

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.00 GHz	50.84	54.0	-3.16	215	2.256	Vertical	9.43
13.71 GHz	44.37	54.0	-9.63	205	1.5	Vertical	13.77
13.71 GHz	38.20	54.0	-15.80	145	3.387	Horizontal	13.76

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)
20.15 GHz	54.21	74.0	-19.79	60	Vertical	-0.35
26.85 GHz	54.72	74.0	-19.28	60	Vertical	2.52
35.06 GHz	56.92	74.0	-17.08	76	Vertical	6.25
20.14 GHz	61.40	74.0	-12.60	323	Horizontal	-0.35
26.86 GHz	59.15	74.0	-14.85	259	Horizontal	2.18
34.91 GHz	56.85	74.0	-17.15	144	Horizontal	6.23

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
20.15 GHz	40.78	54.0	-13.22	60	Vertical	-0.35
26.85 GHz	41.50	54.0	-12.50	60	Vertical	2.52
35.06 GHz	43.76	54.0	-10.24	76	Vertical	6.25
20.14 GHz	47.66	54.0	-6.34	323	Horizontal	-0.35
26.86 GHz	45.39	54.0	-8.61	259	Horizontal	2.18
34.91 GHz	43.75	54.0	-10.25	144	Horizontal	6.23

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

5.6 §15.407(a)(4) 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 23 dBm EIRP 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.

Low Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 11 dBi = 17.02 dBi.

High Gain Mode
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB + Antenna Gain (dBi). Or 6.02 dB + 15 dBi = 21.02 dBi.
Results of this testing are summarized.

5.6.1 Low Gain Mode

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss4	22	11.15	11	23	-11.85
EHT 20	6715	Mcs0_Nss4	20	10.86	11	23	-12.14
EHT 20	6855	Mcs0_Nss4	20	10.71	11	23	-12.29
EHT 40	6605	Mcs0_Nss4	21	7.86	11	23	-15.14
EHT 40	6425	Mcs0_Nss4	20	7.62	11	23	-15.38
EHT 40	6845	Mcs0_Nss4	21	8.37	11	23	-14.63
EHT 80	6625	Mcs0_Nss4	21	5.12	11	23	-17.88
EHT 80	6705	Mcs0_Nss4	21	5.61	11	23	-17.39
EHT 80	6865	Mcs0_Nss4	20	4.47	11	23	-18.53
EHT 160	6665	Mcs0_Nss4	21	2.9	11	23	-20.1
EHT 160	6825	Mcs0_Nss4	20	1.76	11	23	-21.24
EHT 320	6745	Mcs0_Nss4	20	-0.62	11	23	-23.62

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss1	14	5.52	11	5.98	-6.46
EHT 20	6715	Mcs0_Nss1	14	5.89	11	5.98	-6.09
EHT 20	6855	Mcs0_Nss1	15	5.55	11	5.98	-6.43
EHT 40	6605	Mcs0_Nss1	17	4.98	11	5.98	-7
EHT 40	6425	Mcs0_Nss1	17	7.76	11	5.98	-4.22
EHT 40	6845	Mcs0_Nss1	18	5.31	11	5.98	-6.67
EHT 80	6625	Mcs0_Nss1	21	5.12	11	5.98	-6.86
EHT 80	6705	Mcs0_Nss1	21	5.61	11	5.98	-6.37
EHT 80	6865	Mcs0_Nss1	20	4.47	11	5.98	-7.51
EHT 160	6665	Mcs0_Nss1	21	2.9	11	5.98	-9.08
EHT 160	6825	Mcs0_Nss1	20	1.76	11	5.98	-10.22
EHT 320	6745	Mcs0_Nss1	20	-0.62	11	5.98	-12.6

RU PSD

Modulation (BW)	Freq. (MHz)	TP Setting	RU PSD Edge EIRP (dBm)	RU PSD Center EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin Edge (dBm)	Margin Center (dBm)
EHT20	6715	20	14.99	15.85	11	23	-8.01	-7.15
EHT40	6725	20	10.91	11.74	11	23	-12.09	-11.26
EHT80	6705	21	11.62	12.59	11	23	-11.38	-10.41
EHT160	6665	21	11.16	12.55	11	23	-11.84	-10.45
EHT 320	6745	20	9.48	9.61	11	23	-13.52	-13.39

5.6.2 High Gain Mode

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss4	17	7.15	15	23	-15.85
EHT 20	6715	Mcs0_Nss4	16	7.18	15	23	-15.82
EHT 20	6855	Mcs0_Nss4	16	7	15	23	-16
EHT 40	6605	Mcs0_Nss4	17	3.91	15	23	-19.09
EHT 40	6425	Mcs0_Nss4	16	4.02	15	23	-18.98
EHT 40	6845	Mcs0_Nss4	16	3.66	15	23	-19.34
EHT 80	6625	Mcs0_Nss4	17	1.24	15	23	-21.76
EHT 80	6705	Mcs0_Nss4	16	2.13	15	23	-20.87
EHT 80	6865	Mcs0_Nss4	16	1.82	15	23	-21.18
EHT 160	6665	Mcs0_Nss4	16	-1.52	15	23	-24.52
EHT 160	6825	Mcs0_Nss4	16	-1.62	15	23	-24.62
EHT 320	6745	Mcs0_Nss4	16	-4.12	15	23	-27.12

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss1	11	1.31	15	1.98	-0.67
EHT 20	6715	Mcs0_Nss1	10	1.32	15	1.98	-0.66
EHT 20	6855	Mcs0_Nss1	10	1.03	15	1.98	-0.95
EHT 40	6605	Mcs0_Nss1	14	1.08	15	1.98	-0.9
EHT 40	6425	Mcs0_Nss1	14	1.27	15	1.98	-0.71
EHT 40	6845	Mcs0_Nss1	14	1.78	15	1.98	-0.2
EHT 80	6625	Mcs0_Nss1	17	1.24	15	1.98	-0.74
EHT 80	6705	Mcs0_Nss1	16	1.15	15	1.98	-0.83
EHT 80	6865	Mcs0_Nss1	16	1.82	15	1.98	-0.16
EHT 160	6665	Mcs0_Nss1	16	-1.52	15	1.98	-3.5
EHT 160	6825	Mcs0_Nss1	16	-1.62	15	1.98	-3.6
EHT 320	6745	Mcs0_Nss1	16	-4.12	15	1.98	-6.1

RU PSD

Modulation (BW)	Freq. (MHz)	TP Setting	RU PSD Edge EIRP (dBm)	RU PSD Center EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin Edge (dBm)	Margin Center (dBm)
EHT20	6715	16	10.86	11.82	15	23	-12.14	-11.18
EHT40	6725	16	7.00	7.54	15	23	-16.00	-15.46
EHT80	6705	16	6.63	7.51	15	23	-16.37	-15.49
EHT160	6665	16	6.31	7.77	15	23	-16.69	-15.23
EHT 320	6745	17	5.12	5.64	15	23	-17.88	-17.36

Result

The maximum average power spectral density was less than the limit of 23 dBm EIRP; therefore, the EUT complies with the specification.

5.6.3 OFDMA RU Check

If EUT supports OFDMA multiple partial Resource Unit (RU) configurations were verified and the worst case mode was tested.

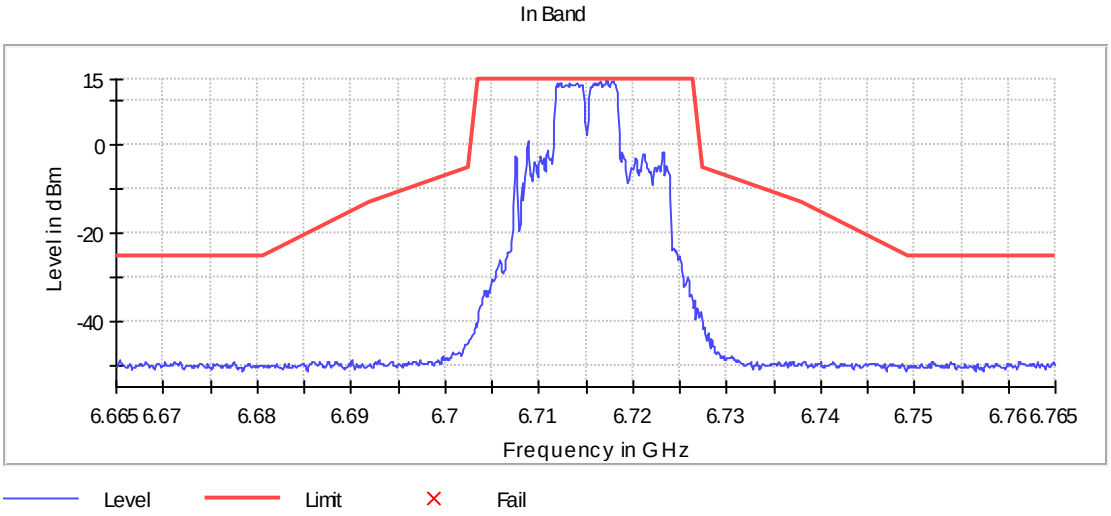


Figure 4: 6715 20MHz RU Vérification - Center

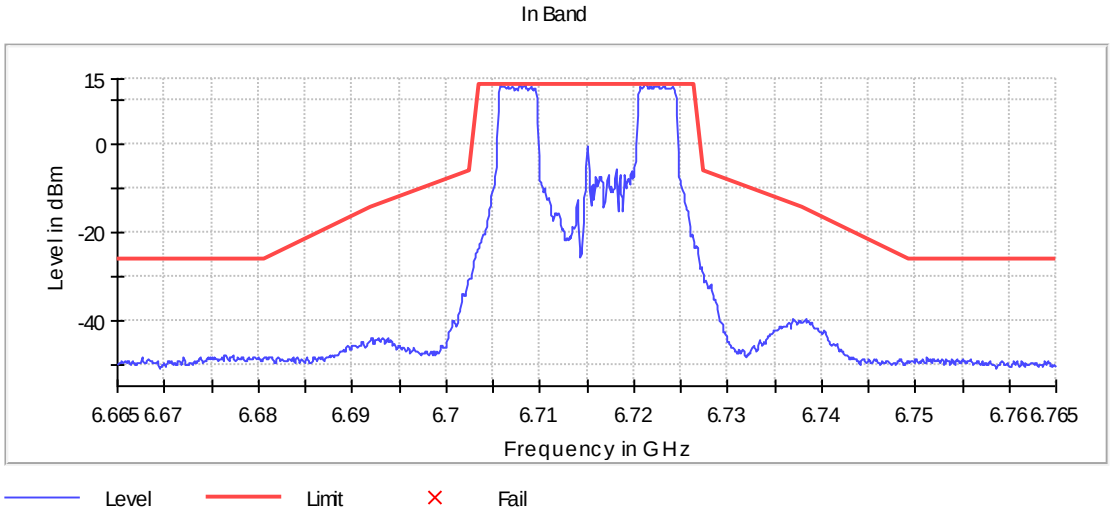


Figure 5: 6715 20MHz RU Vérification - Edge

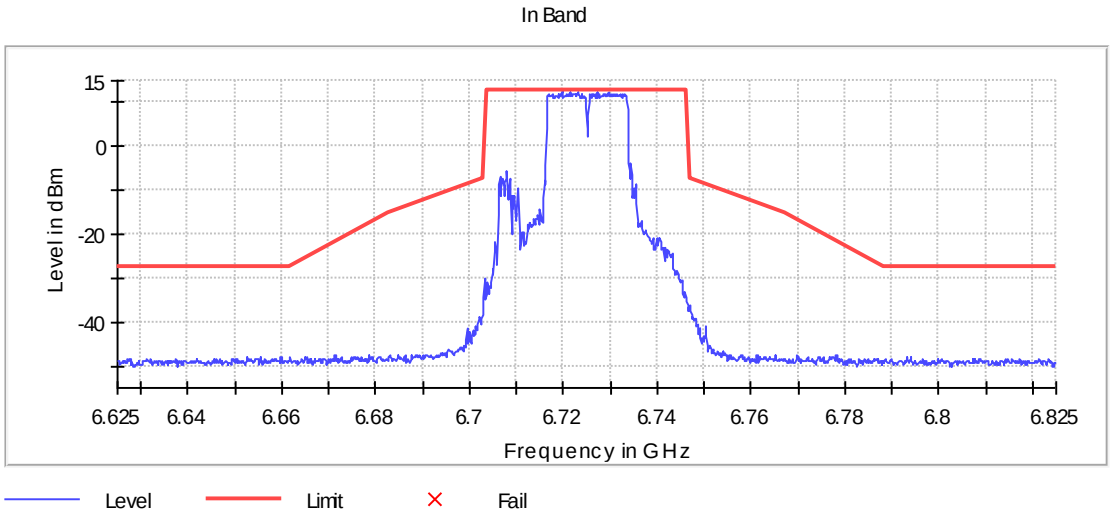


Figure 6: 6725 40MHz RU Vérification - Center

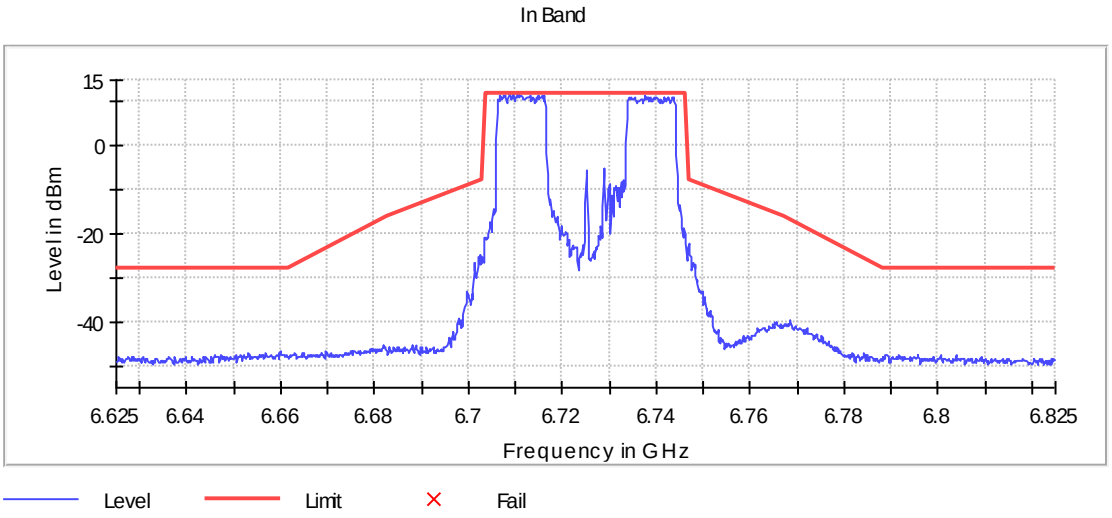


Figure 7: 6725 40MHz RU Vérification - Edge

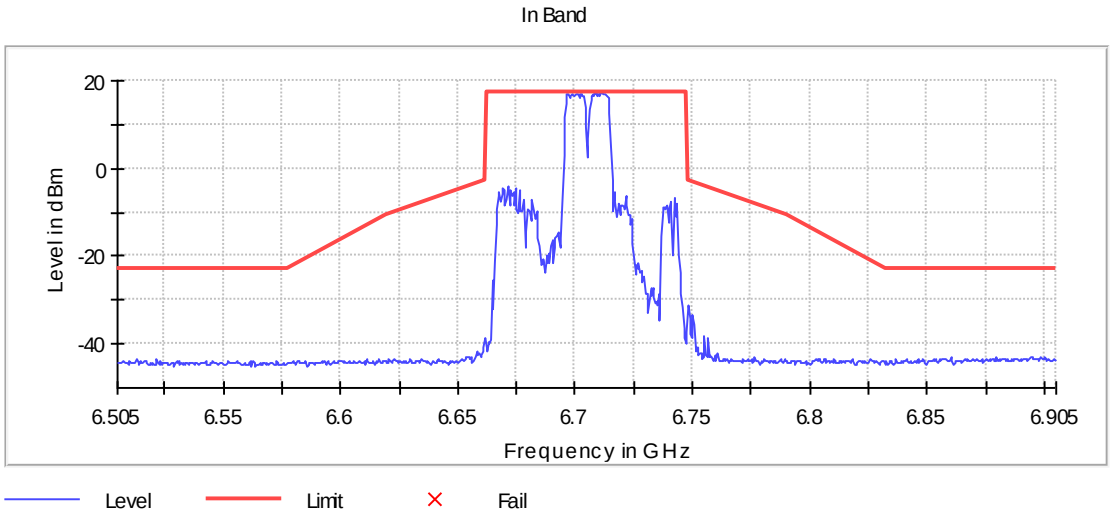


Figure 8: 6705 80MHz RU Vérification - Center

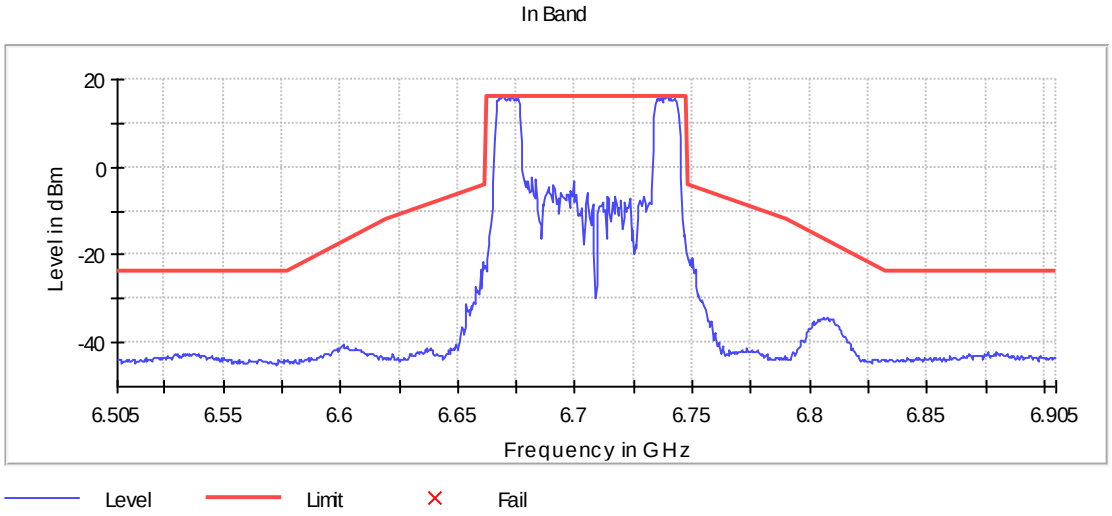


Figure 9: 6705 80MHz RU Vérification - Edge

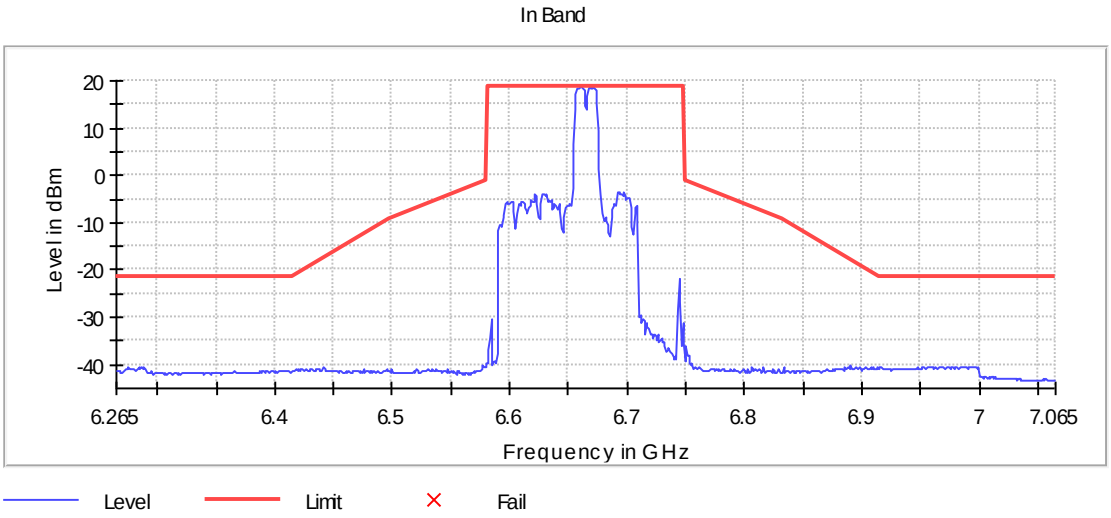


Figure 10: 6665 160MHz RU Vérification - Center

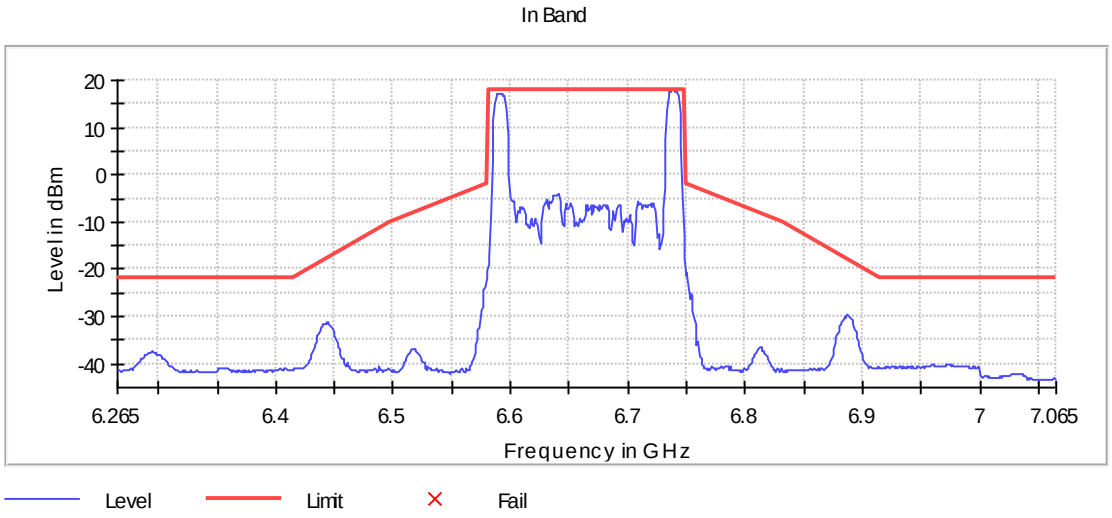


Figure 11: 6665 160MHz RU Vérification - Edge

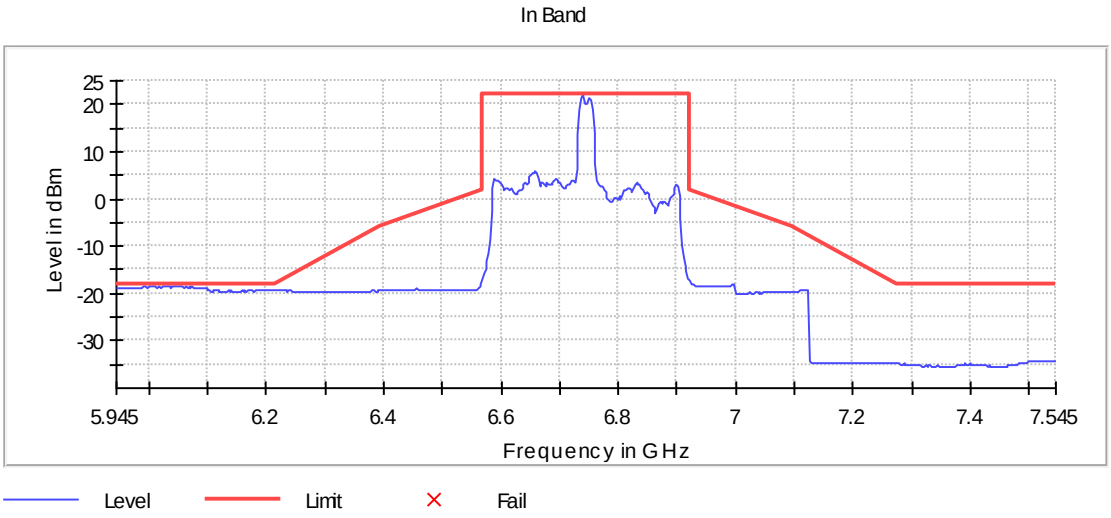


Figure 12: 6745 320MHz RU Vérification - Center

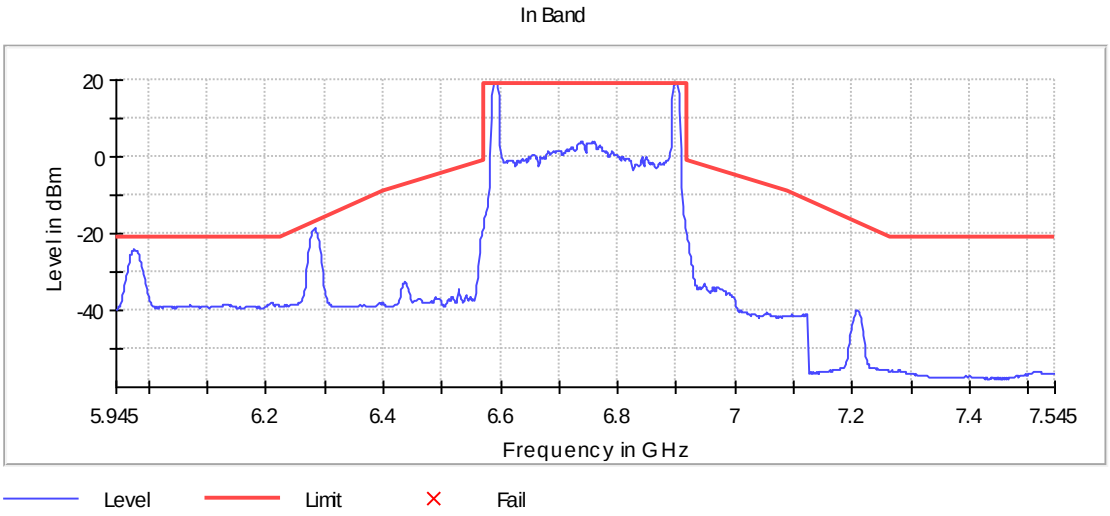


Figure 13: 6745 320MHz RU Vérification - Edge

-- End of Test Report –