UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-E7ADI
ISED ID	6545A-E7ADI
Equipment Under Test	E7-Audience-Indoor
Test Report Serial Number	TR10351_01
Date of Test(s)	25 September 2024; 28 January; 12 - 13 and 16 - 17 June; 8 - 9, 15 - 16 September 2025
Report Issue Date	16 September 2025

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E RSS-248, Issue 3 (October 2024)	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

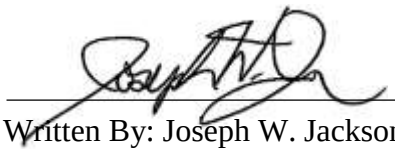
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E and RSS-248, Issue 3 (October 2024). This report may be reproduced in full. Partial reproduction 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-E7ADI
ISED ID	6545A-E7ADI

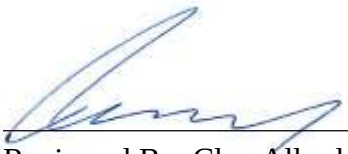
On this 16th day of September 2025, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith. Unified Compliance laboratory is not responsible for incorrect information 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: Clay Allred

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	16 September 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-Indoor
Serial Number	A07F43
Dimensions (cm)	47.4 x 26.5 x 9.4

2.2 Description of EUT

The E7-Audience-Indoor is a WiFi 7 access point designed for high-density environments with (1) 10GbE PoE port and (1) 1GbE PoE port. The E7-Audience-Indoor 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-Indoor 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 Emission Bandwidth (Section 5.3), 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-Indoor uses Transmit Power (TP) Control protocol and is included in the power tables of Section 5.4.

This device does not support channel puncturing.

For CDD transmission, direction 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.

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	TP3
		6715, 6735, 6755, 6775, 6795, 6815, 6835	TP2
		6855	TP3
	be (EHT40)	6605, 6645, 6685, 6725, 6765, 6805, 6845	TP6
	be (EHT80)	6625	TP9
		6705, 6785	TP8
		6865	TP9
	be (EHT160)	6665, 6825	TP11
	be (EHT320)	6745	TP14

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-Indoor (Note 1) SN: A07F43	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-Indoor 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 – 23.8 °C
Humidity	22.4 – 27.1 %
Barometric Pressure	1018 mBar

2.6 Operating Modes

The E7-Audience-Indoor 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 802.11be 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

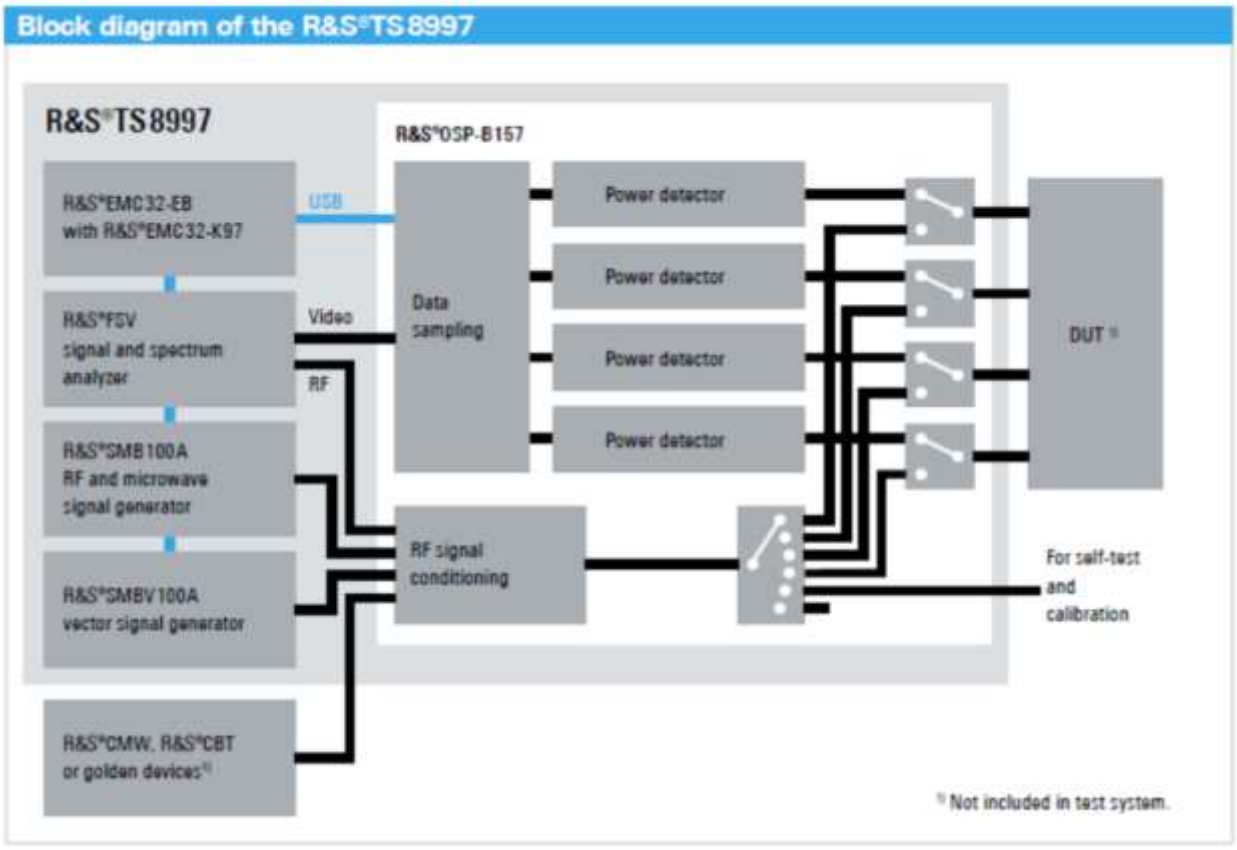


Diagram 1: Test Configuration Block Diagram

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-248 §4.4	Bandwidth Requirement	6535 to 6865	Compliant
15.407(a)	RSS-248 §4.5	Peak Output Power[1]	6535 to 6865	Compliant
15.407(b)	RSS-248 §4.6	Antenna Conducted Spurious Emissions[1]	0.009 to 40000	N/A Note[2]
15.209	RSS-248 §4.6	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(a)	RSS-248 §4.5	Peak Power Spectral Density[1]	6535 to 6865	Compliant
15.407(d)	RSS-248 §4.7	Contention Based Protocol	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 2026. 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 2026.

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	2/27/2025	2/27/2026
LISN	AFJ	LS16C/10	UCL-6749	3/3/2025	3/3/2026
ISN	Teseq	ISN T800	UCL-2971	3/31/2025	3/31/2026
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

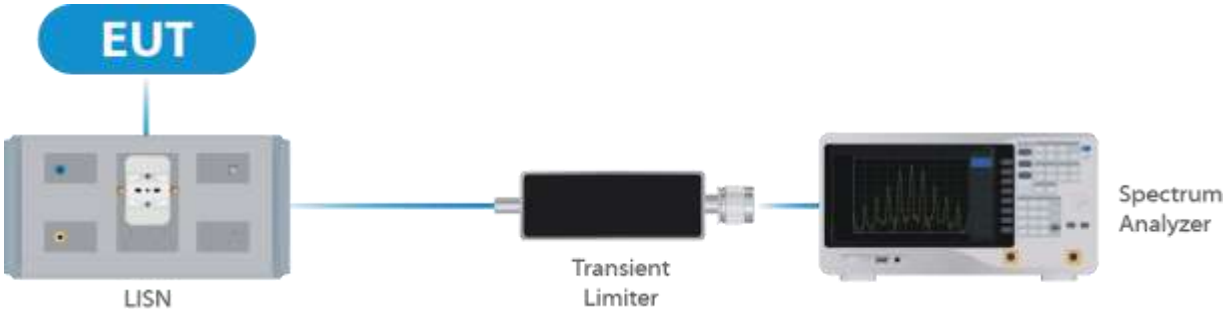


Figure 1: Conducted Emissions Test

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	4/28/2025	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

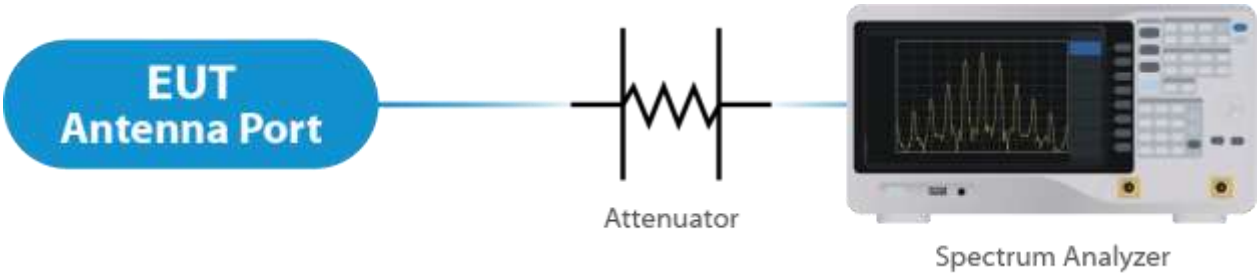


Figure 2: Direct Connect at the Antenna Port Test

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	7/22/2025	7/22/2026
Test Software	Nexio	BatEMC	UCL-5253 & UCL-5249	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

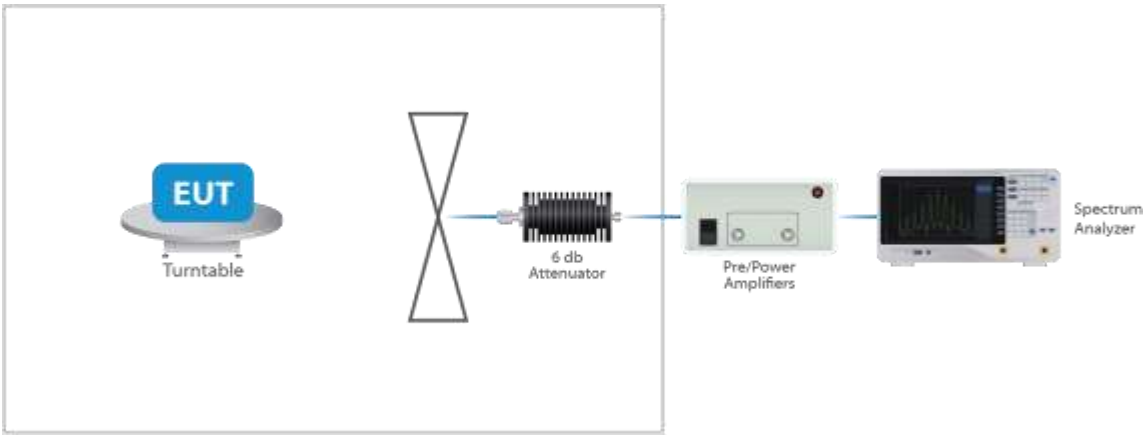


Figure 3: Radiated Emissions Test

4.4 Contention Base Protocol Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	Keysight	N9010B EXA	UCL-7069	5/20/20254	5/20/2026
Signal Generator	Keysight	MXG-B	UCL-6291	6/28/2024	6/22/2026
MIMO Test Set	Keysight	X8750A	UCL-7372	9/24/2024	10/07/2025

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

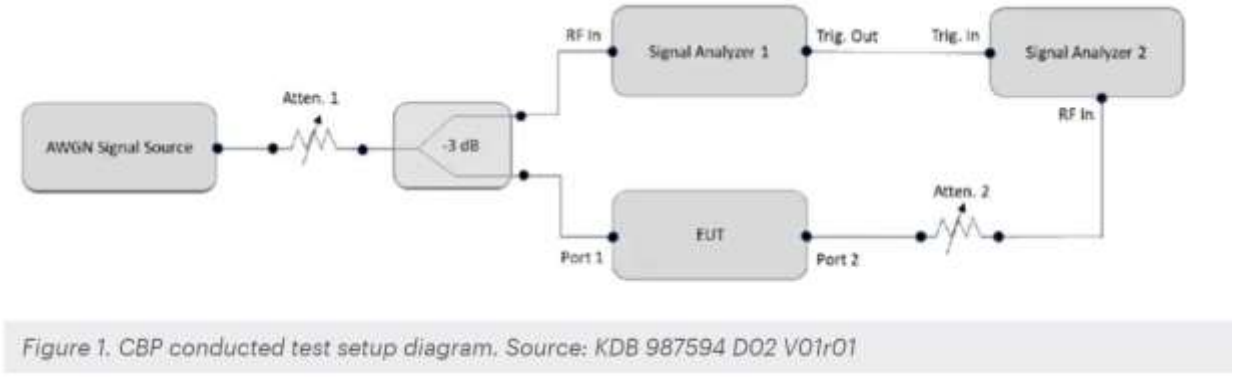


Figure 4: Contention Base Protocol Test

4.5 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or Unified Compliance Laboratory personnel at intervals defined in ANSI C63.4:2014 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request.

4.6 Measurement Uncertainty

Test	Uncertainty (± dB)	Confidence (%)
Conducted Emissions	1.44	95
Radiated Emissions (9 kHz to 30 MHz)	2.50	95
Radiated Emissions (30 MHz to 1 GHz)	4.38	95
Radiated Emissions (1 GHz to 18 GHz)	4.37	95
Radiated Emissions (18 GHz to 40 GHz)	3.93	95
Direct Connect Tests	**K Factor**	**Value**
Emissions Bandwidth	2	2.0%
Output Power	2	1.0 dB
Peak Power Spectral Density	2	1.3 dB
Band Edge	2	0.8 dB
Transmitter Spurious Emissions	2	1.8 dB

5 Test Results

5.1 §15.203 Antenna Requirements

The EUT uses an internal 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.

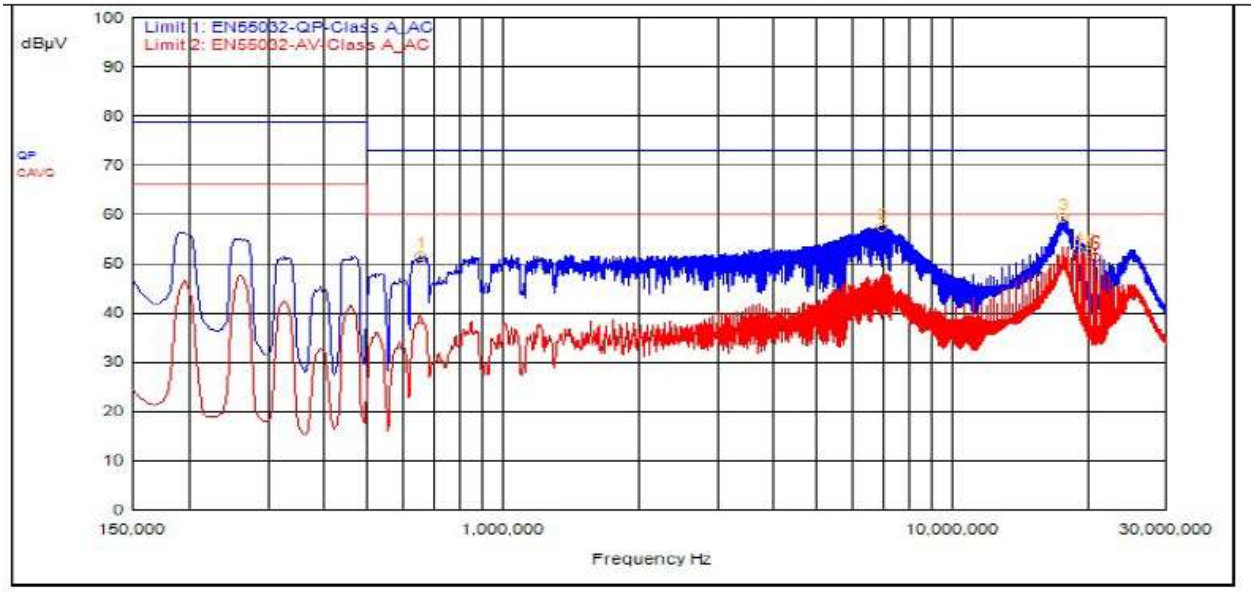
See Section 2.2 for directional gain calculation.

Results

The EUT complied with the specification

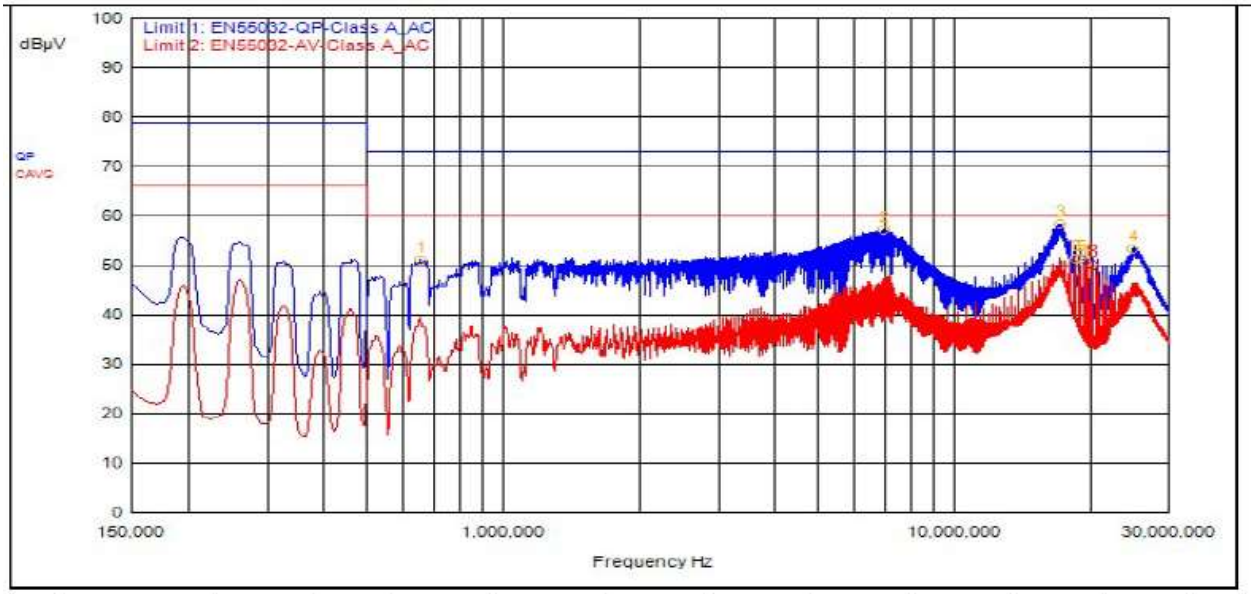
5.2 Conducted Emissions at Mains Ports Data

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	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 Antenna

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
EHT 20	6595	19.3	23.6
EHT 20	6715	19.3	22.8
EHT 20	6855	19.2	23.0
EHT 40	6605	38.3	43.3
EHT 40	6725	38.3	44.5
EHT 40	6845	38.3	44.0
EHT 80	6625	78.0	87.5
EHT 80	6705	78.5	88.5
EHT 80	6865	77.5	96.0
EHT 160	6665	158.0	175.0
EHT 160	6825	157.0	176.0
EHT 320	6745	317.5	347.5

5.3.2 High Gain Antenna

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
EHT 20	6595	19.2	23.4
EHT 20	6715	19.2	23.7
EHT 20	6855	19.3	22.5
EHT 40	6605	38.3	46.8
EHT 40	6725	38.5	42.0
EHT 40	6845	38.3	42.0
EHT 80	6625	78.5	91.0
EHT 80	6705	78.0	90.5
EHT 80	6865	77.5	89.5
EHT 160	6665	157.0	176.0
EHT 160	6825	158.0	174.0
EHT 320	6745	320.0	347.5

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)(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 of this report for the directional gain calculation.

The maximum average RF conducted output power measured for this device was 18.94 dBm or 78.34 mW. The limit is 30 dBm EIRP, or 1 Watt EIRP. The antenna has a gain of 11 dBi (Low Gain Mode) and 15 dBi (High Gain Mode).

5.4.1 Ouput Power Per Chain

Low Gain Antenna

Modulation (BW)	Frequency (MHz)	Chain0 (dBm)	Chain1 (dBm)	Chain2 (dBm)	Chain3 (dBm)	Total Output Power* (dBm)
EHT 20	6595	1.174	1.551	0.713	1.906	7.38
EHT 20	6715	0.613	1.995	0.749	2.178	7.46
EHT 20	6855	2.053	2.294	0.302	2.242	7.82
EHT 40	6605	4.246	4.531	3.858	5.193	10.51
EHT 40	6725	4.478	4.975	4.256	5.017	10.71
EHT 40	6845	4.398	4.212	3.592	4.459	10.20
EHT 80	6625	6.789	6.67	7.05	8.431	13.55
EHT 80	6705	6.201	7.33	6.276	7.31	12.83
EHT 80	6865	7.658	7.62	7.036	7.81	13.56
EHT 160	6665	9.546	10.165	9.215	10.675	15.96
EHT 160	6825	407	9.586	9.297	9.882	15.57
EHT 320	6745	12.378	13.129	12.362	13.657	18.94

High Gain Antenna

Modulation (BW)	Frequency (MHz)	Chain0 (dBm)	Chain1 (dBm)	Chain2 (dBm)	Chain3 (dBm)	Total Output Power* (dBm)
EHT 20	6595	-3.741	-2.78	-2.942	-1.965	3.21
EHT 20	6715	-1.716	-2.456	-1.594	-2.999	3.87
EHT 20	6855	-2.298	-2.603	-3.079	-2.905	3.31
EHT 40	6605	-0.256	0.554	0.359	1.461	6.59
EHT 40	6725	-1.078	0.25	-1.158	0.722	5.78
EHT 40	6845	0.636	0.487	0.221	0.149	6.40
EHT 80	6625	1.973	3.232	2.975	4.822	9.40
EHT 80	6705	2.738	3.159	3.165	3.127	9.07
EHT 80	6865	3.197	3.491	2.292	3.375	9.13
EHT 160	6665	5.525	5.897	6.43	5.797	11.95
EHT 160	6825	6.264	6.393	5.711	6.304	12.20
EHT 320	6745	6.989	8.657	7.447	8.982	14.12

5.4.2 Average Output Power

Low Gain Antenna

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss4	3	7.38	11	18.38	30	-11.62
EHT 20	6715	Mcs0_Nss4	2	7.46	11	18.46	30	-11.54
EHT 20	6855	Mcs0_Nss4	3	7.82	11	18.82	30	-11.18
EHT 40	6605	Mcs0_Nss4	6	10.51	11	21.51	30	-8.49
EHT 40	6725	Mcs0_Nss4	6	10.71	11	21.71	30	-8.29
EHT 40	6845	Mcs0_Nss4	6	10.20	11	21.20	30	-8.80
EHT 80	6625	Mcs0_Nss4	9	13.55	11	24.55	30	-5.45
EHT 80	6705	Mcs0_Nss4	8	12.83	11	23.83	30	-6.17
EHT 80	6865	Mcs0_Nss4	9	13.56	11	24.56	30	-5.44
EHT 160	6665	Mcs0_Nss4	11	15.96	11	26.96	30	-3.04
EHT 160	6825	Mcs0_Nss4	11	15.57	11	26.57	30	-3.43
EHT 320	6745	Mcs0_Nss4	14	18.94	11	29.94	30	-0.06

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss1	-3	0.58	11	11.58	30	-18.42
EHT 20	6715	Mcs0_Nss1	-4	0.67	11	11.67	30	-18.33
EHT 20	6855	Mcs0_Nss1	-3	1.01	11	12.01	30	-17.99
EHT 40	6605	Mcs0_Nss1	0	3.74	11	14.74	30	-15.26
EHT 40	6725	Mcs0_Nss1	0	3.71	11	14.71	30	-15.29
EHT 40	6845	Mcs0_Nss1	0	4.06	11	15.06	30	-14.94
EHT 80	6625	Mcs0_Nss1	3	7.23	11	18.23	30	-11.77
EHT 80	6705	Mcs0_Nss1	2	6.81	11	17.81	30	-12.19
EHT 80	6865	Mcs0_Nss1	3	7.15	11	18.15	30	-11.85
EHT 160	6665	Mcs0_Nss1	6	10.21	11	21.21	30	-8.79
EHT 160	6825	Mcs0_Nss1	6	9.96	11	20.96	30	-9.04
EHT 320	6745	Mcs0_Nss1	8	12.26	11	23.26	30	-6.74

High Gain Antenna
Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss4	0	3.21	15	18.21	30	-11.79
EHT 20	6715	Mcs0_Nss4	-1	3.87	15	18.87	30	-11.13
EHT 20	6855	Mcs0_Nss4	-1	3.31	15	18.31	30	-11.69
EHT 40	6605	Mcs0_Nss4	3	6.59	15	21.59	30	-8.41
EHT 40	6725	Mcs0_Nss4	2	5.78	15	20.78	30	-9.22
EHT 40	6845	Mcs0_Nss4	2	6.40	15	21.40	30	-8.60
EHT 80	6625	Mcs0_Nss4	6	9.40	15	24.40	30	-5.60
EHT 80	6705	Mcs0_Nss4	5	9.07	15	24.07	30	-5.93
EHT 80	6865	Mcs0_Nss4	5	9.13	15	24.13	30	5.87
EHT 160	6665	Mcs0_Nss4	8	11.95	15	26.95	30	-3.05
EHT 160	6825	Mcs0_Nss4	8	12.20	15	27.20	30	-2.80
EHT 320	6745	Mcs0_Nss4	10	14.12	15	29.12	30	-0.88

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT 20	6595	Mcs0_Nss1	-6	-2.84	15	12.16	30	-17.84
EHT 20	6715	Mcs0_Nss1	-8	-3.51	15	11.49	30	-18.51
EHT 20	6855	Mcs0_Nss1	-7	-2.98	15	12.02	30	-17.98
EHT 40	6605	Mcs0_Nss1	-3	0.39	15	15.39	30	-14.61
EHT 40	6725	Mcs0_Nss1	-4	-0.32	15	14.68	30	-15.32
EHT 40	6845	Mcs0_Nss1	-4	0.19	15	15.19	30	-14.81
EHT 80	6625	Mcs0_Nss1	-1	2.59	15	17.59	30	-12.41
EHT 80	6705	Mcs0_Nss1	-2	2.60	15	17.60	30	-12.40
EHT 80	6865	Mcs0_Nss1	-4	3.31	15	18.31	30	-11.69
EHT 160	6665	Mcs0_Nss1	2	5.66	15	20.66	30	-9.34
EHT 160	6825	Mcs0_Nss1	2	6.03	15	21.03	30	-8.97
EHT 320	6745	Mcs0_Nss1	4	8.17	15	23.17	30	-6.83

Result

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

* 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 redure 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.

QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
36.35 MHz	37.33	40.0	-2.67	43	1.129	Vertical	-9.91
37.85 MHz	36.35	40.0	-3.65	88	1.306	Vertical	-9.42
39.99 MHz	36.33	40.0	-3.67	80	1.126	Vertical	-8.84
519.77 MHz	37.74	47.0	-9.26	117	1.489	Vertical	-2.52
42.81 MHz	21.48	40.0	-18.52	143	1.897	Horizontal	-8.30
310.01 MHz	41.31	47.0	-5.69	334	1.131	Horizontal	-7.04

Table 5: 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 6: 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 7: 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 8: 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 9: Radiated Emissions 17 – 40 GHz at the Middle Frequency (worse case)

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 5 dBm EIRP in any 1 MHz band during any time interval of continuous transmission.

See Section 2.2 of this report for the directional gain calculation.

Results of this testing are summarized.

5.6.1 Low Gain Antenna

Nss>1

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	3	-6.55	11	-6	-0.55
EHT 20	6715	Mcs0_Nss4	2	-6.61	11	-6	-0.61
EHT 20	6855	Mcs0_Nss4	3	-6.27	11	-6	-0.27
EHT 40	6605	Mcs0_Nss4	6	-6.57	11	-6	-0.57
EHT 40	6425	Mcs0_Nss4	6	-6.14	11	-6	-0.14
EHT 40	6845	Mcs0_Nss4	6	-6.76	11	-6	-0.76
EHT 80	6625	Mcs0_Nss4	9	-6.43	11	-6	-0.43
EHT 80	6705	Mcs0_Nss4	8	-7.07	11	-6	-1.07
EHT 80	6865	Mcs0_Nss4	9	-6.26	11	-6	-0.26
EHT 160	6665	Mcs0_Nss4	11	-6.77	11	-6	-0.77
EHT 160	6825	Mcs0_Nss4	11	-6.95	11	-6	-0.95
EHT 320	6745	Mcs0_Nss4	14	-6.37	11	-6	-0.37

Nss=1

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	-3	-12.93	11	-12.02	-0.91
EHT 20	6715	Mcs0_Nss1	-4	-12.90	11	-12.02	-0.88
EHT 20	6855	Mcs0_Nss1	-3	-12.37	11	-12.02	-0.35
EHT 40	6605	Mcs0_Nss1	0	13.04	11	-12.02	-1.02
EHT 40	6425	Mcs0_Nss1	0	-12.99	11	-12.02	-0.97
EHT 40	6845	Mcs0_Nss1	0	-12.57	11	-12.02	-0.55
EHT 80	6625	Mcs0_Nss1	3	-12.36	11	-12.02	-0.34
EHT 80	6705	Mcs0_Nss1	2	-12.93	11	-12.02	-0.91
EHT 80	6865	Mcs0_Nss1	3	-12.33	11	-12.02	-0.31
EHT 160	6665	Mcs0_Nss1	6	-12.32	11	-12.02	-0.30
EHT 160	6825	Mcs0_Nss1	6	-12.41	11	-12.02	-0.39
EHT 320	6745	Mcs0_Nss1	8	-12.89	11	-12.02	-0.87

5.6.2 High Gain Antenna

Nss>1

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	0	-10.44	15	-10	-0.44
EHT 20	6715	Mcs0_Nss4	-1	-10.04	15	-10	-0.04
EHT 20	6855	Mcs0_Nss4	-1	-10.42	15	-10	-0.42
EHT 40	6605	Mcs0_Nss4	3	-10.13	15	-10	-0.13
EHT 40	6425	Mcs0_Nss4	2	-10.97	15	-10	-0.71
EHT 40	6845	Mcs0_Nss4	2	-10.30	15	-10	-0.30
EHT 80	6625	Mcs0_Nss4	6	-10.18	15	-10	-0.18
EHT 80	6705	Mcs0_Nss4	5	-10.80	15	-10	-0.80
EHT 80	6865	Mcs0_Nss4	5	-10.62	15	-10	-0.62
EHT 160	6665	Mcs0_Nss4	8	-10.62	15	-10	-0.62
EHT 160	6825	Mcs0_Nss4	8	-10.49	15	-10	-0.49
EHT 320	6745	Mcs0_Nss4	10	-10.73	15	-10	-0.73

Nss=1

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	-6	-16.16	15	-16.02	-0.14
EHT 20	6715	Mcs0_Nss1	-8	-16.85	15	-16.02	-0.83
EHT 20	6855	Mcs0_Nss1	-7	-16.13	15	-16.02	-0.11
EHT 40	6605	Mcs0_Nss1	-3	-16.42	15	-16.02	-0.40
EHT 40	6425	Mcs0_Nss1	-4	-16.95	15	-16.02	-0.93
EHT 40	6845	Mcs0_Nss1	-4	-16.26	15	-16.02	-0.24
EHT 80	6625	Mcs0_Nss1	-1	-16.91	15	-16.02	-0.89
EHT 80	6705	Mcs0_Nss1	-2	-16.89	15	-16.02	-0.87
EHT 80	6865	Mcs0_Nss1	-4	-16.16	15	-16.02	-0.14
EHT 160	6665	Mcs0_Nss1	2	-16.54	15	-16.02	-0.52
EHT 160	6825	Mcs0_Nss1	2	-16.09	15	-16.02	-0.07
EHT 320	6745	Mcs0_Nss1	4	-16.79	15	-16.02	-0.77

5.6.3 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	-2	3.66	4.53	11	5	-1.34	-0.47
EHT40	6725	3	4.01	4.70	11	5	-0.99	-0.30
EHT80	6705	2	3.81	4.83	11	5	-1.19	-0.17
EHT160	6665	2	3.22	4.37	11	5	-1.78	-0.63
EHT 320	6745	4	4.43	4.00	11	5	-0.57	-1.00

Result

The maximum average power spectral density was less than the limit of 5 dBm EIRP (Adjusted limit as shown above); therefore, the EUT complies with the specification.

5.6.4 OFDMA RU Check

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

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	6.66500 GHz	6.66500 GHz
Stop Frequency	6.76500 GHz	6.76500 GHz
Span	100.000 MHz	100.000 MHz
RBW	300.000 kHz	~ 300.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	667	~ 667
Sweeptime	1.100 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
Sweeptype	Sweep	Sweep
Preamp	off	off

Table 10: 6715 20MHz RU Vérification

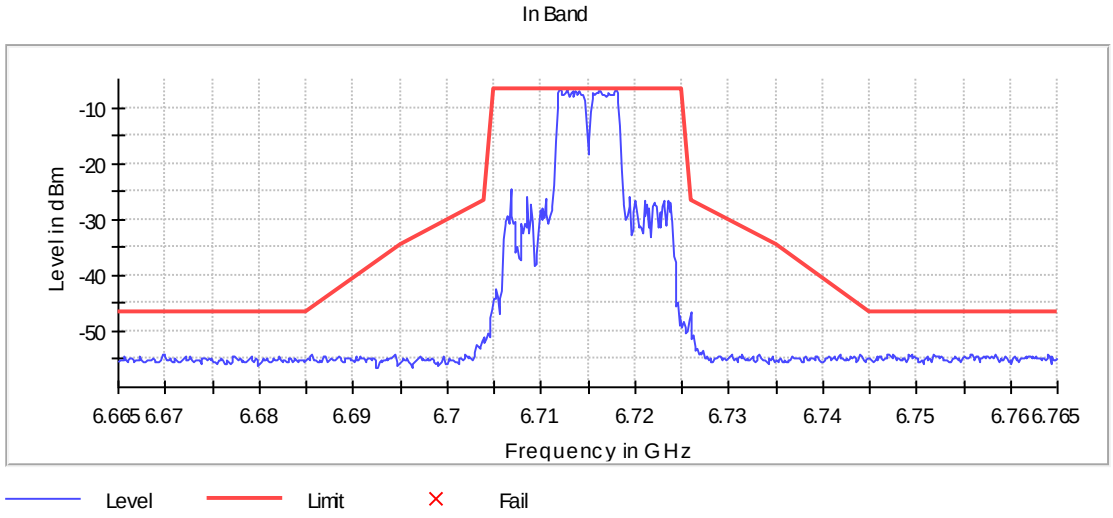


Figure 5: 6715 20MHz RU Vérification - Center

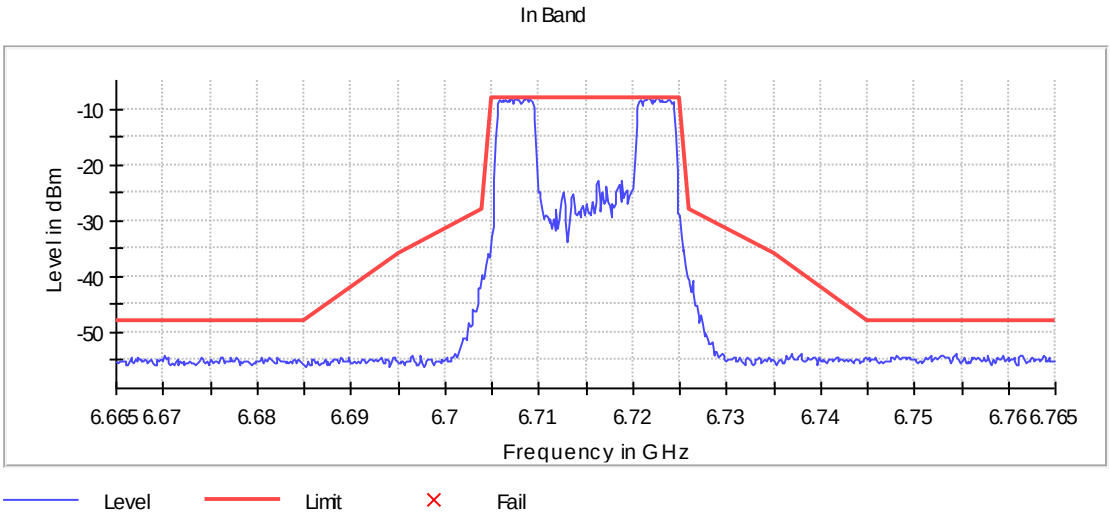


Figure 6: 6715 20MHz RU Vérification - Edge

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	6.62500 GHz	6.62500 GHz
Stop Frequency	6.82500 GHz	6.82500 GHz
Span	200.000 MHz	200.000 MHz
RBW	300.000 kHz	~ 300.000 kHz
VBW	1.000 MHz	>= 900.000 kHz
SweepPoints	1333	~ 1333
Sweeptime	1.340 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
Sweeptype	Sweep	Sweep
Preamp	off	off

Table 11: 6725 40MHz RU Vérification

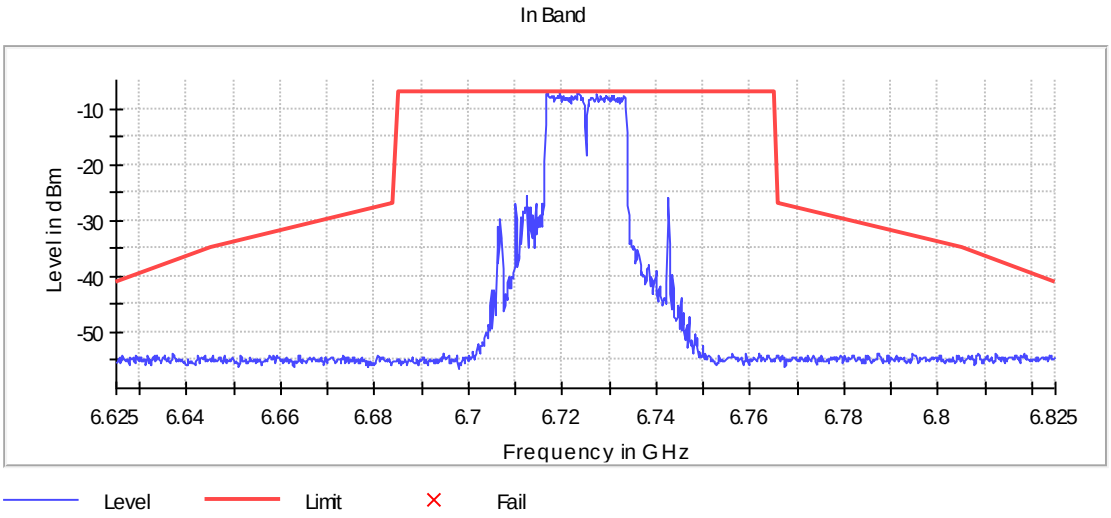


Figure 7: 6725 40MHz RU Vérification - Center

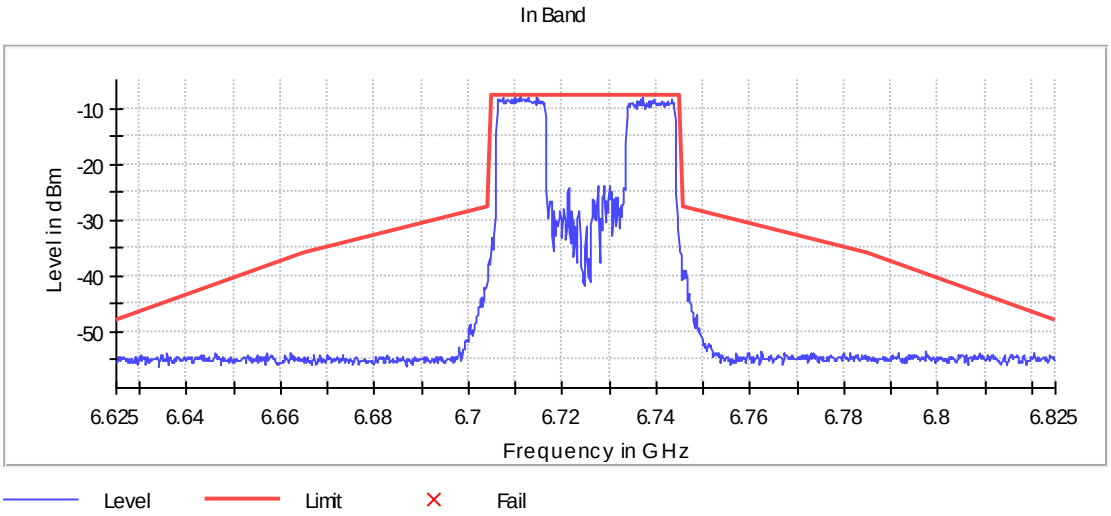


Figure 8: 6725 40MHz RU Vérification - Edge

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	6.50500 GHz	6.50500 GHz
Stop Frequency	6.90500 GHz	6.90500 GHz
Span	400.000 MHz	400.000 MHz
RBW	1.000 MHz	~ 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	800	~ 800
Sweeptime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
Sweeptype	Sweep	Sweep
Preamp	off	off

Table 12: 6705 80MHz RU Vérification

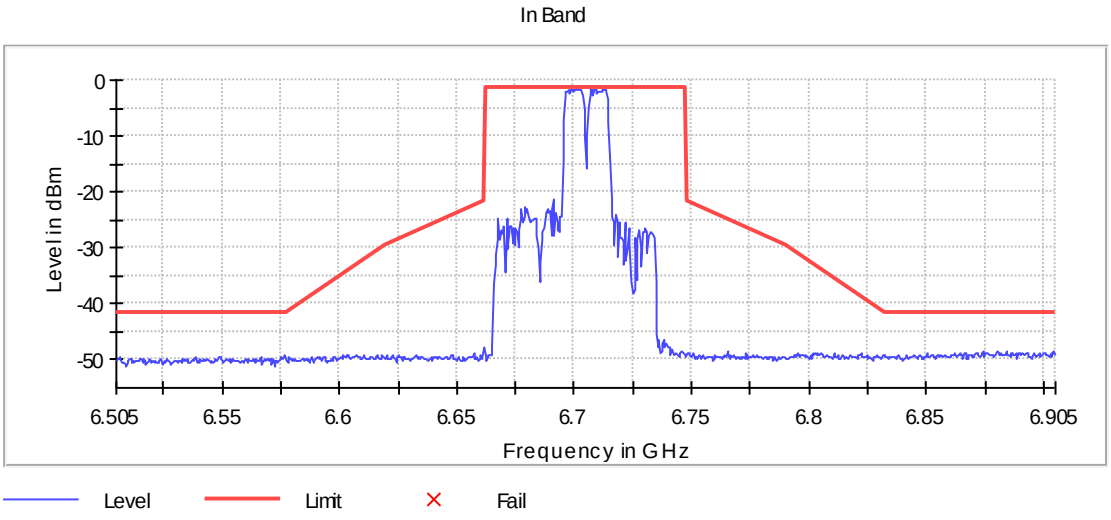


Figure 9: 6705 80MHz RU Vérification - Center

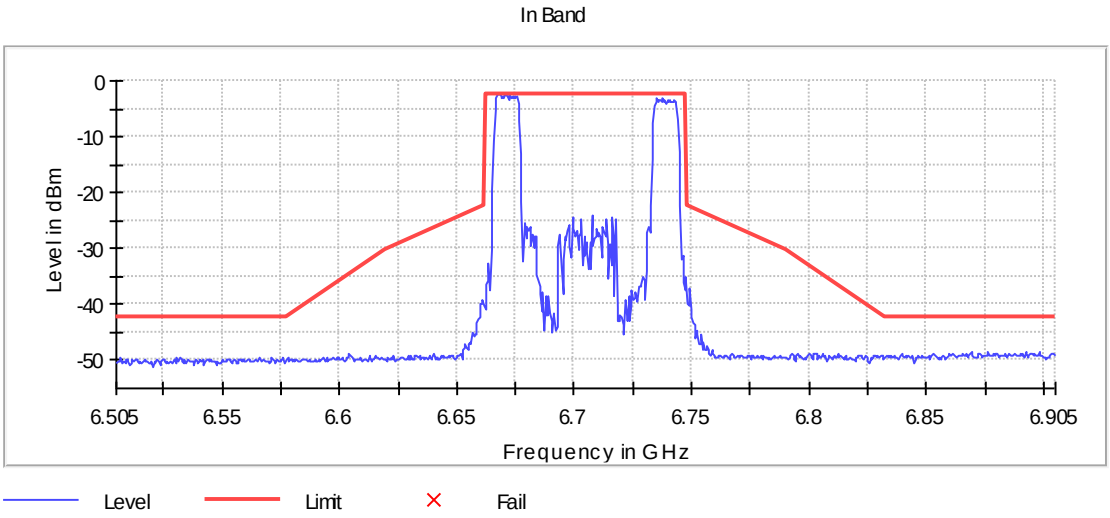


Figure 10: 6705 80MHz RU Vérification - Edge

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	6.26500 GHz	6.26500 GHz
Stop Frequency	7.06500 GHz	7.06500 GHz
Span	800.000 MHz	800.000 MHz
RBW	2.000 MHz	~ 2.000 MHz
VBW	10.000 MHz	>= 6.000 MHz
SweepPoints	800	~ 800
Sweeptime	4.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
Sweeptype	Sweep	Sweep
Preamp	off	off

Table 13: 6665 160MHz RU Vérification

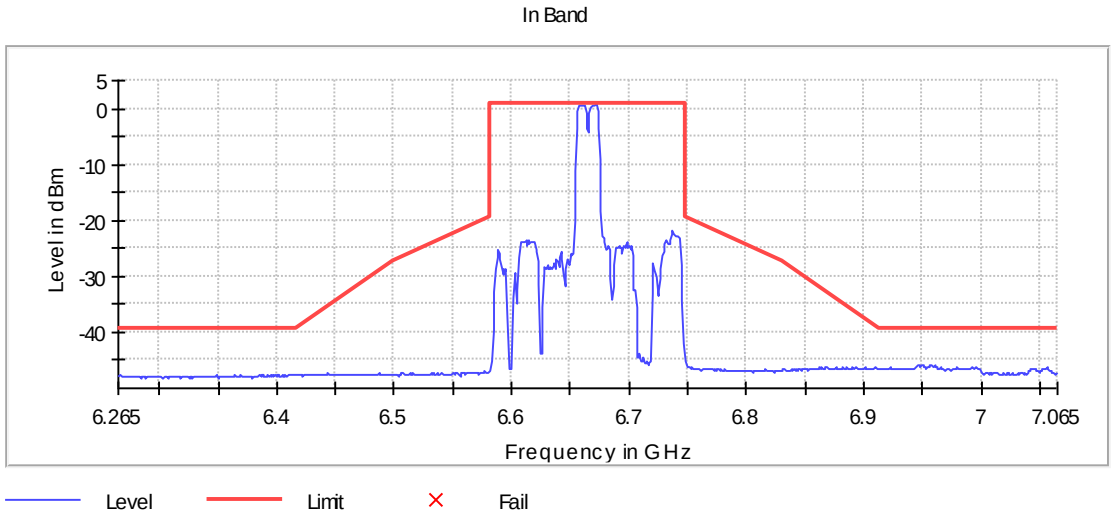


Figure 11: 6665 160MHz RU Vérification - Center

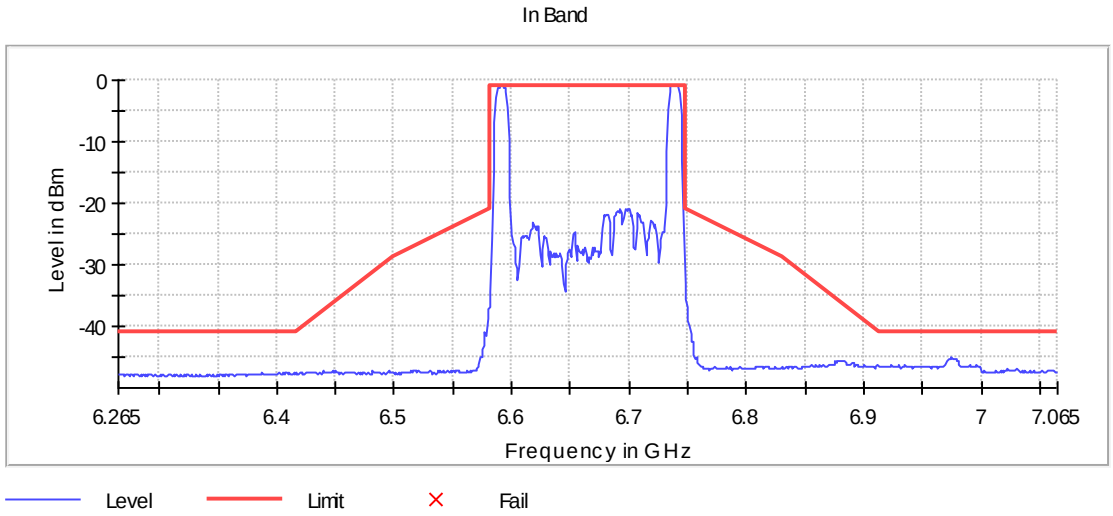


Figure 12: 6665 160MHz RU Vérification - Edge

Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	5.94500 GHz	5.94500 GHz
Stop Frequency	7.54500 GHz	7.54500 GHz
Span	1.600 GHz	1.600 GHz
RBW	5.000 MHz	~ 5.000 MHz
VBW	20.000 MHz	>= 15.000 MHz
SweepPoints	640	~ 640
Sweeptime	6.400 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	20.000 dB
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
Sweeptype	Sweep	Sweep
Preamp	off	off

Table 14: 6745 320MHz RU Vérification

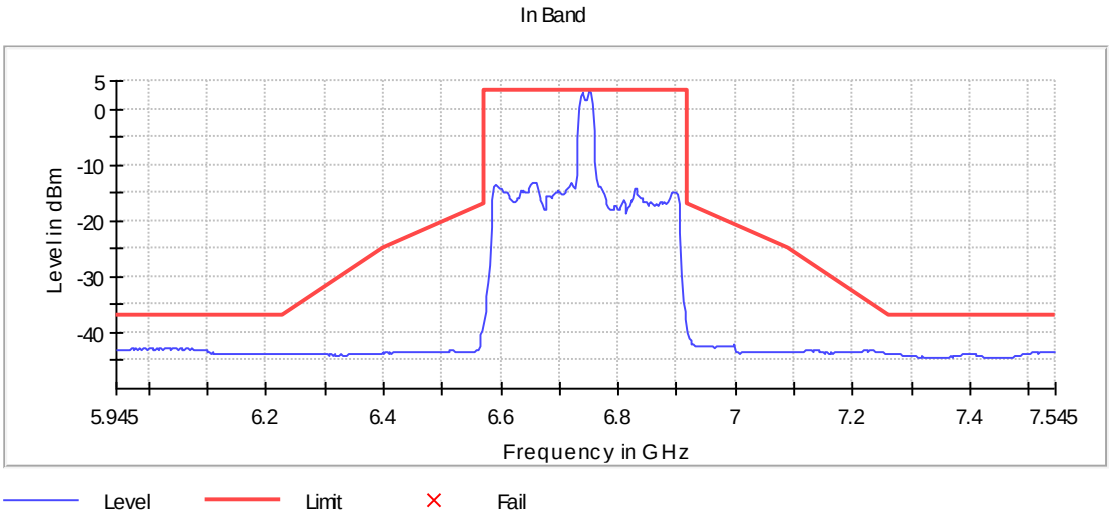


Figure 13: 6745 320MHz RU Vérification - Center

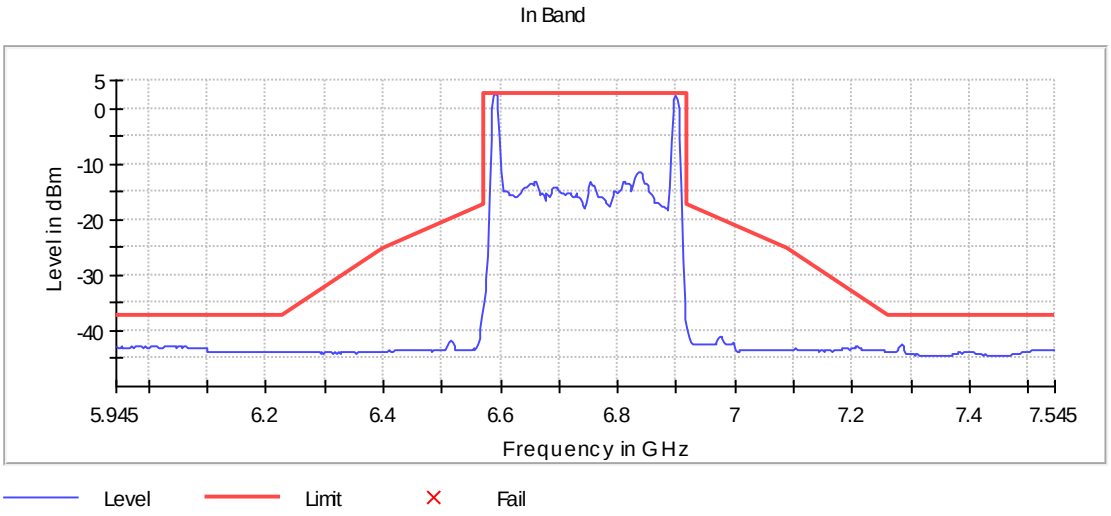


Figure 14: 6745 320MHz RU Vérification - Edge

5.7 §15.407(d) Contention Based Protocol

This product was tested and found to be compliant with the requirements of Contention-based Protocol as specified in FCC Part 15.407 and KDB 987594 D02.

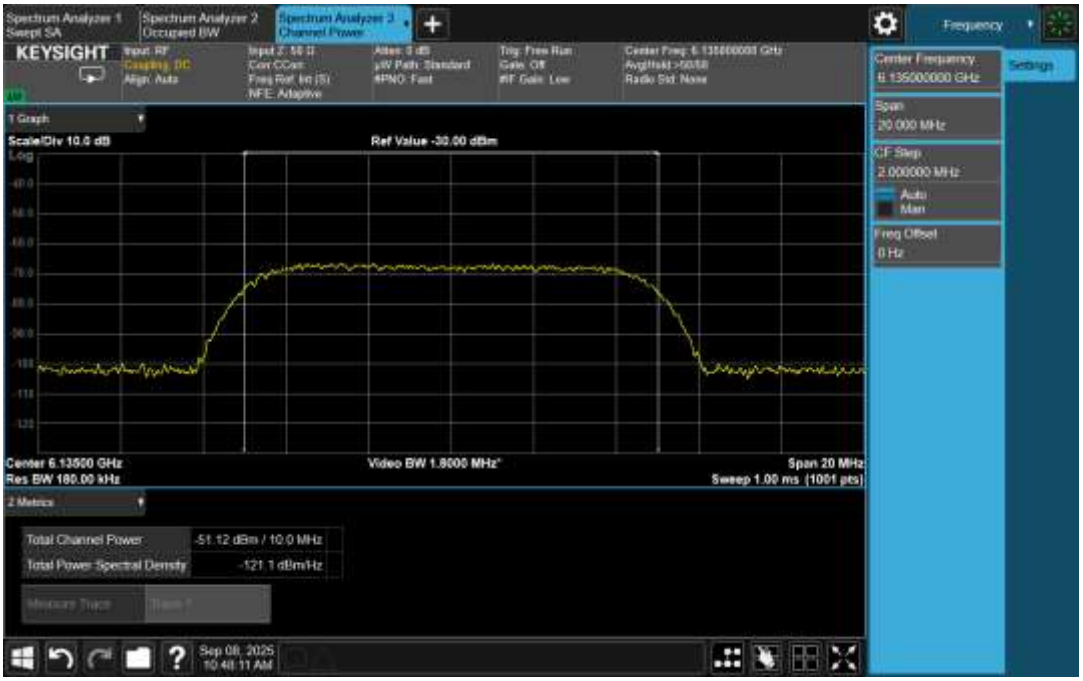
Initially the test setup was connected directly to the signal source with all splitters (splitters terminated with a 50-ohm loads on unused ports) and cables in place to verify the AWGN signal is 10MHz wide at a signal level of less than or equal to -62dBm and for conducted measurements the threshold was adjusted for an antenna gain of 0 dBi. The level at the signal generator required to achieve the required signal level at the DUT was recorded for use during testing.

The DUT was connected as shown in figure 4 above and set to transmit at a constant duty cycle at each frequency and bandwidth noted in the table below and verified to be communicating with the companion device as intended.

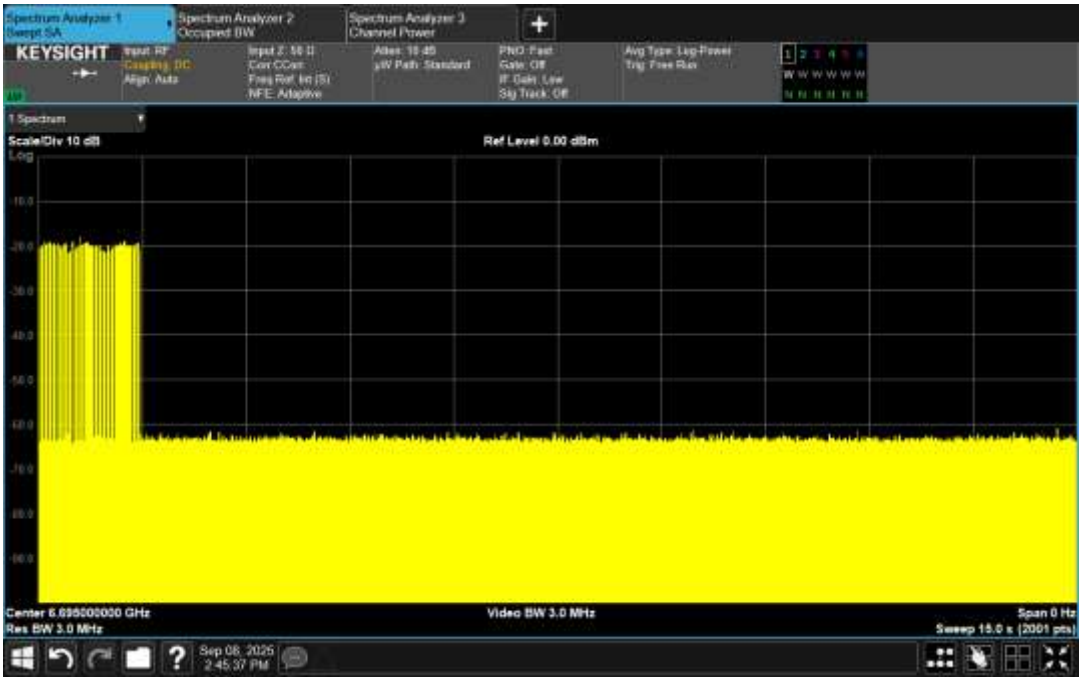
Starting at the levels established above, the AWGN signal was introduced to the DUT and increased to determine a threshold level at where the DUT will terminate with at least a 90% detection rate. The level at the DUT, which the 90% detection rate was achieved was recorded as the “Sensitivity Level” below.

Any measurement below the sensitivity level will result in the Tx minimal and any further measurement below the sensitivity level will result in Tx on.

Testing shall be repeated at each applicable channel and bandwidth as noted in Table 1 of KDB 987594 D02.



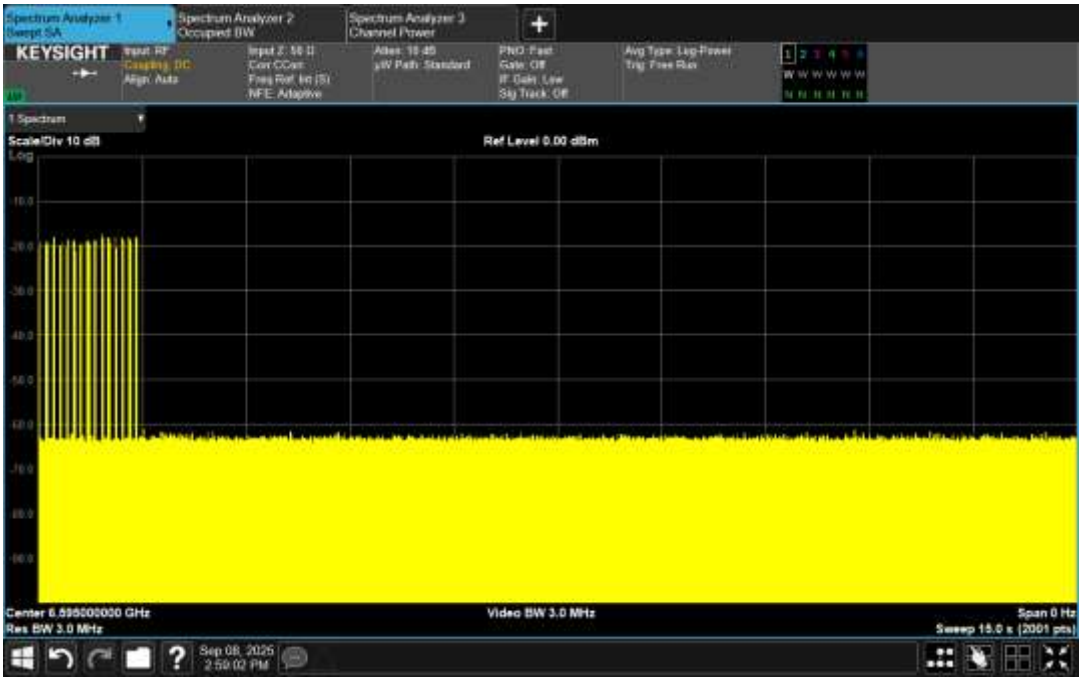
Plot 1: AWGN Signal BW/Power Details



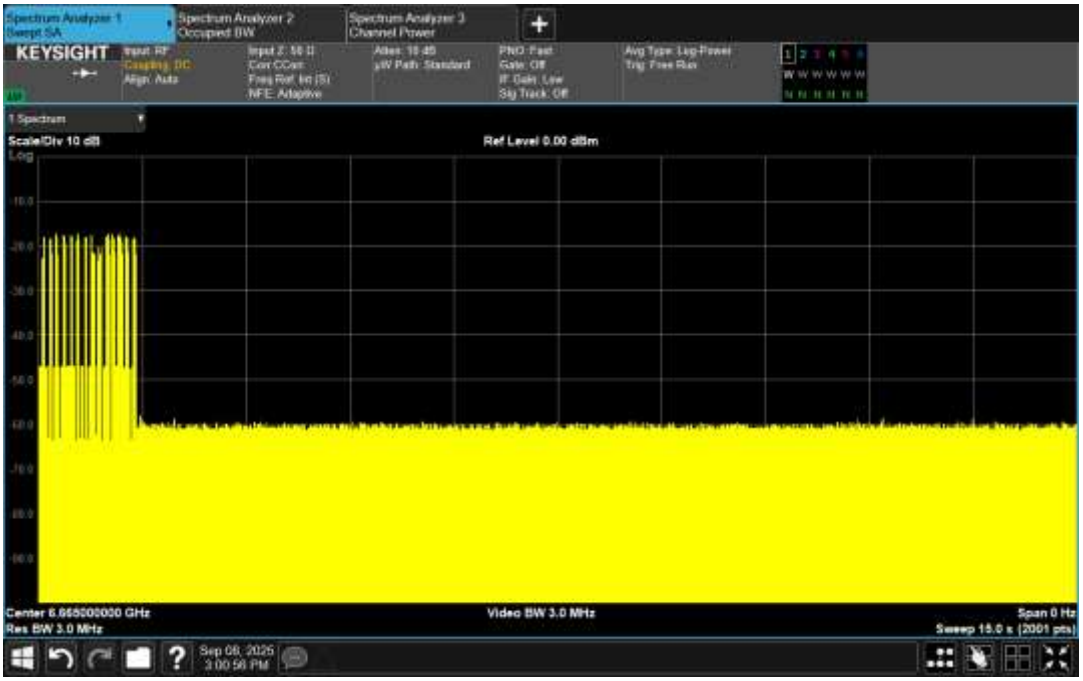
Plot 2: AWGN Signal Detection 20MHz

Plot 3: EUT 160MHz Bandwidth

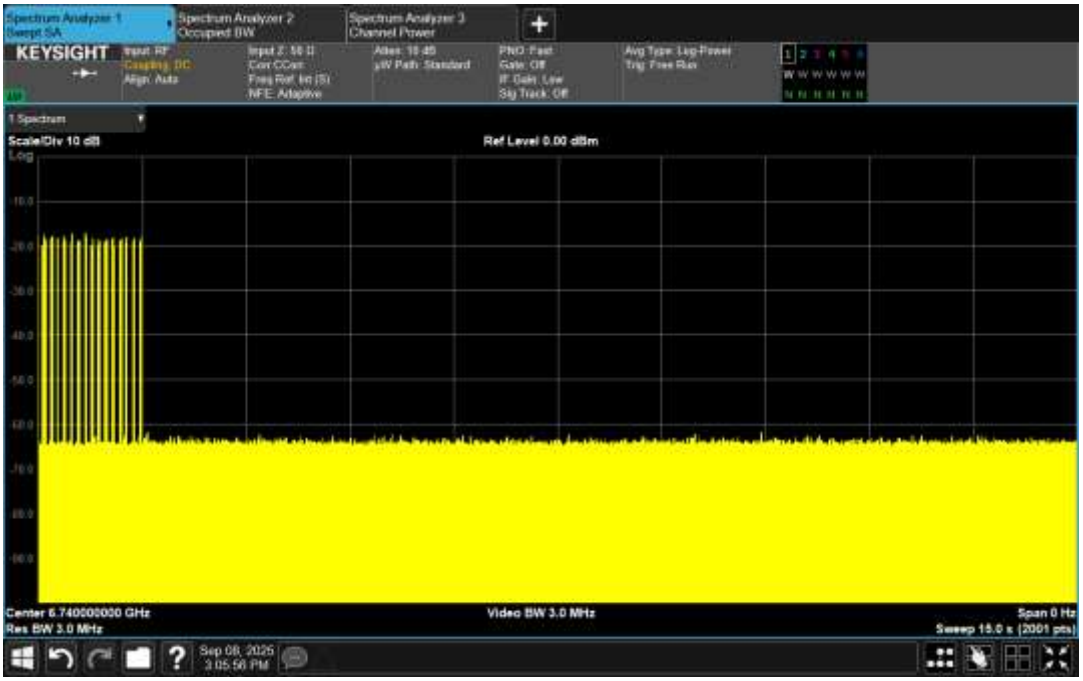
Plot 4: EUT 160MHz Bandwidth Reduction



Plot 5: AWGN Signal Detection 160MHz



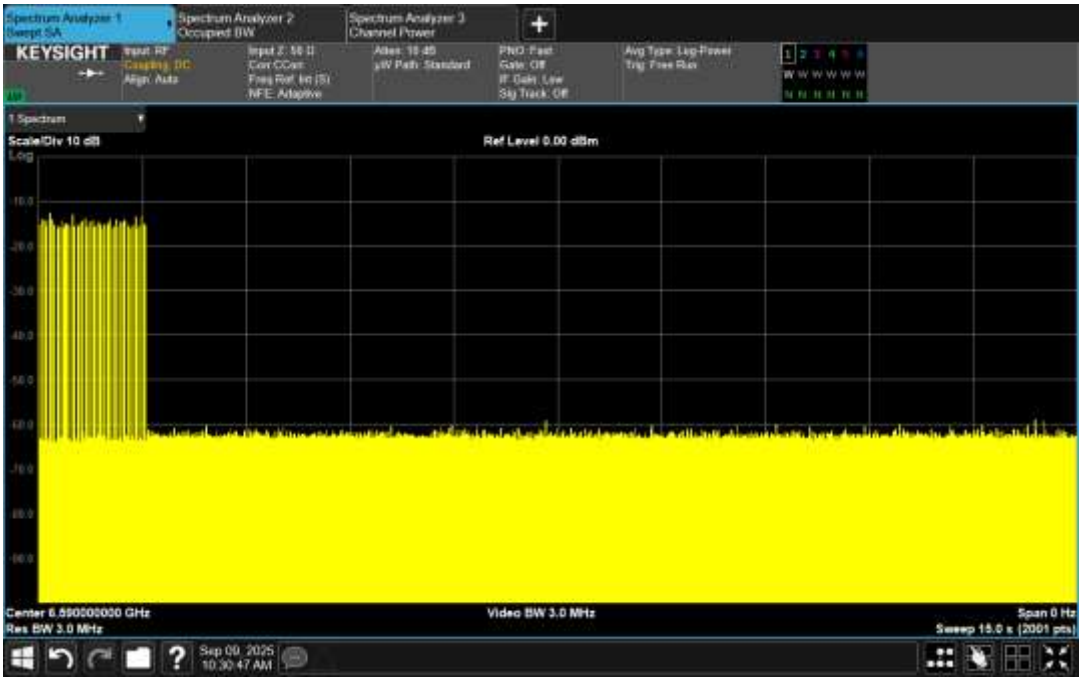
Plot 6: AWGN Signal Detection 160MHz



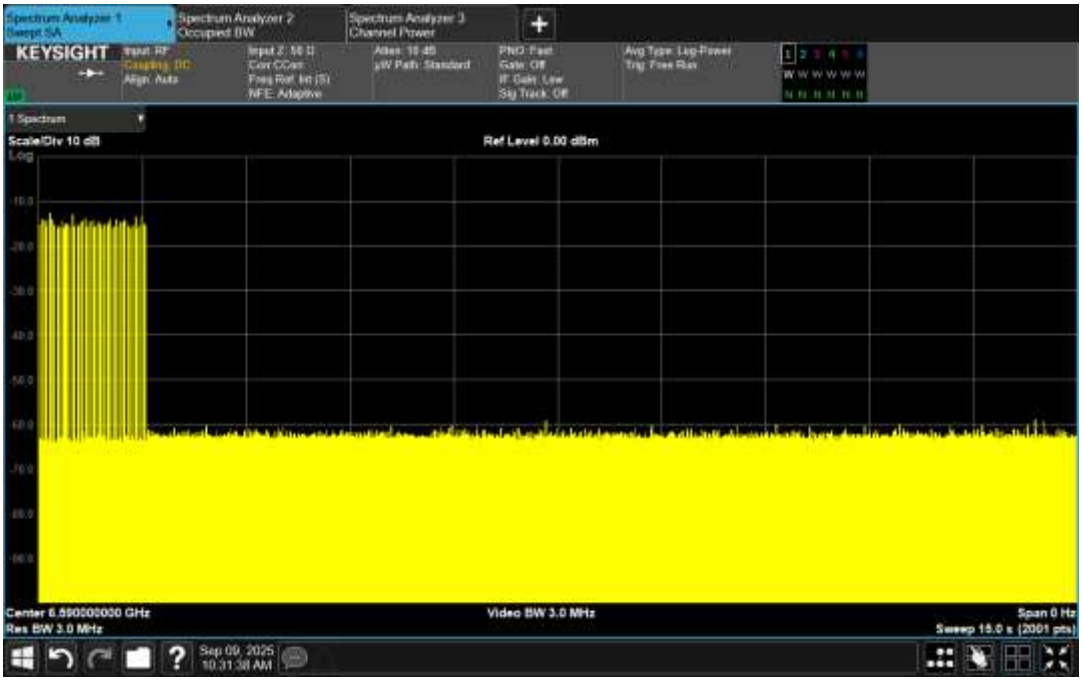
Plot 7: AWGN Signal Detection 160MHz

Plot 8: EUT 320MHz Bandwidth

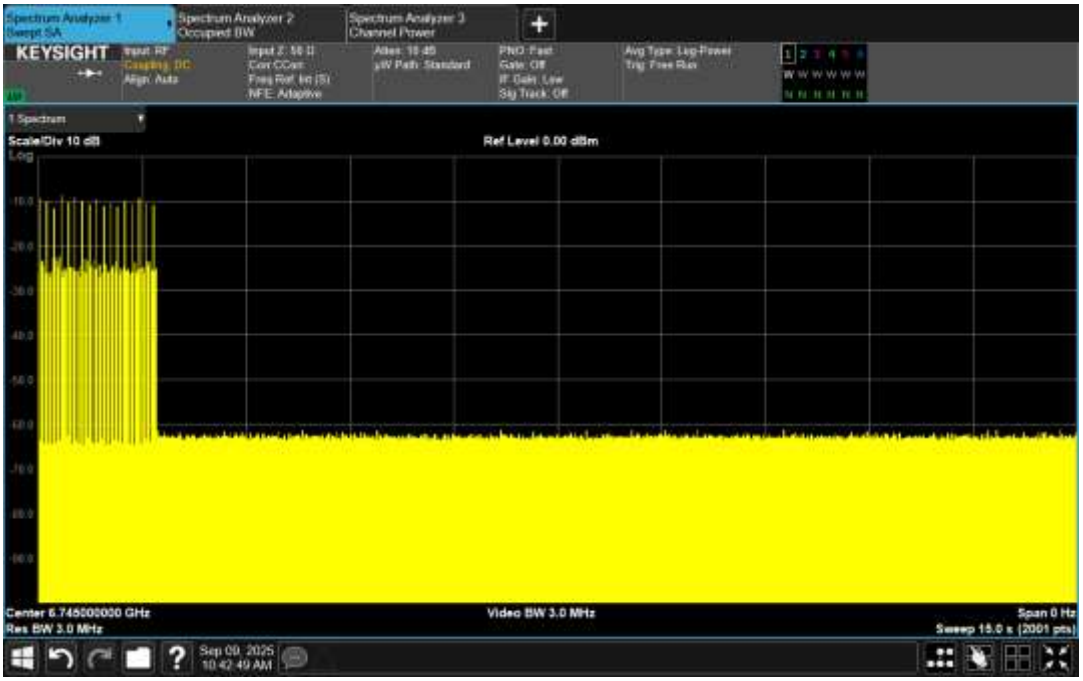
Plot 9: EUT 320MHz Bandwidth Reduction



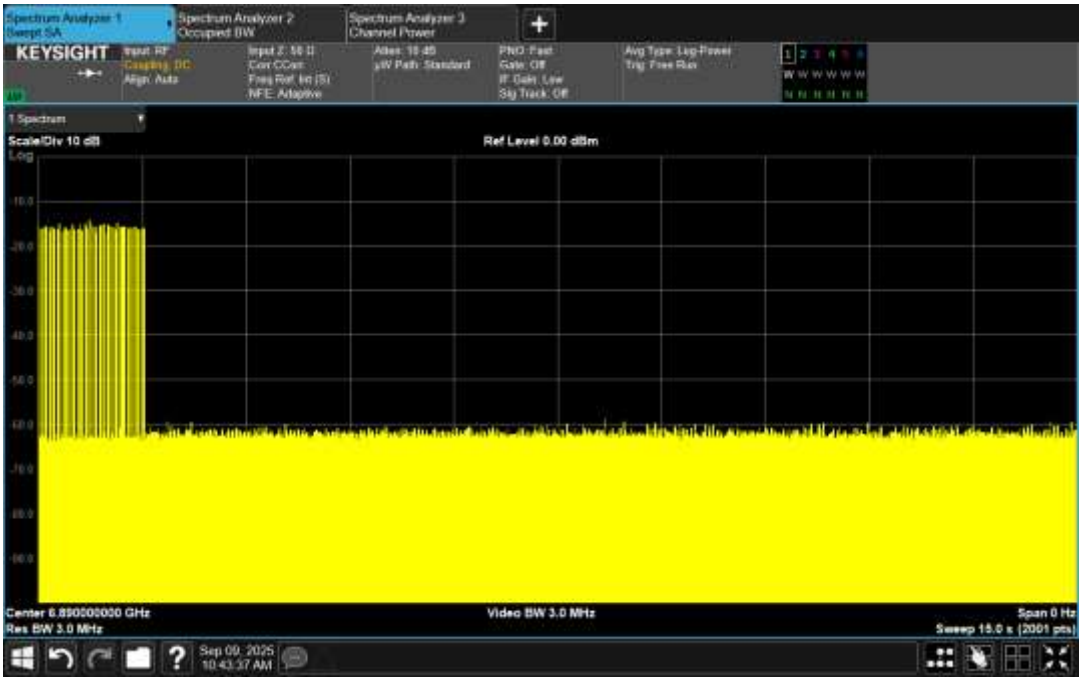
Plot 10: AWGN Signal Detection 320MHz



Plot 11: AWGN Signal Detection 320MHz



Plot 12: AWGN Signal Detection 320MHz



Plot 13: AWGN Signal Detection 320MHz

Contention Based Protocol 987594 D02 U-NNI 6 GHz EMC Measurement

Band	BW_{EUT}	F_{c1}	F_{c2}	Reduce Transmission (dBm)	Stop Transmission (dBm)	Stop Adjusted Power (dBm)	Limit (dBm)	Margin (dB)
UNII-5 5.925 - 6.425GHz	20	6135	6135	-55	-50	-68.8	-51	-17.8
	160	6185	6110	-52	-50	-68.8	-51	-17.8
			6185	-45	-40	-58.8	-51	-7.8
			6260	-53	-51	-69.8	-51	-18.8
	320	6265	6110	-53	-48	-66.8	-51	-15.8
			6265	-48	-43	-61.8	-51	-10.8
			6410	-44	-42	-60.8	-51	-9.8
UN1I-7 6.525 - 6.875GHz	20	6695	6695	-53	-50	-68.8	-51	-17.8
	160	6665	6595	-52	-50	-68.8	-51	-17.8
			6665	-35	-33	-51.8	-51	-0.8
			6740	-50	-48	-66.8	-51	-15.8
	320	6745	6590	-52	-51	-69.8	-51	-18.8
			6745	-43	-42	-60.8	-51	-9.8
			6890	-53	-52	-70.8	-51	-19.8
UNII-8 6.875 - 7.125GHz	20	7015	7015	-52	-51	-69.8	-51	-18.8
	160	6985	6910	-50	-48	-66.8	-51	-15.8
			6985	-44	-42	-60.8	-51	-9.8
			7060	-50	-49	-67.8	-51	-16.8

Min. Antenna Gain (dBi)	11
Max Threshold Level (TL)	-51

Ports	Path Loss (dBm)
6G0 - 6G4	-18.8

AWGN BW (Clock)
23MHz

Table 15: Trial Table

CBP Path Loss is – 22 dB
Detection Level = Injected AWGN Power (dBm) – Antenna Gain (dBi) + Path Loss (dB)

Result

The EUT complies with the specification.

-- End of Test Report –