



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-E7CPI
ISED ID	6545A-E7CPI
Equipment Under Test	E7-Campus-Indoor
Test Report Serial Number	TR10497_02
Date of Test(s)	8, 22 - 23 May 2024; 13 May; 9 - 10 June; 9 - 10 September; 28 October 2025
Report Issue Date	5 November 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.



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-Campus-Indoor
FCC ID	SWX-E7CPI
ISED ID	6545A-E7CPI

On this 5th day of November 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


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Reviewed By: Kimberly DeBole

Revision History		
Revision	Description	Date
01	Original Report Release	11/05/2025
02	Modified Section 2.6 and CBP Trial Table	11/11/2025

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1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Alex Macon
Title	Compliance

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UBIQUITI
Model Number	E7-Campus-Indoor
Serial Number	1FFB30
Dimensions (cm)	25.0 x 25.0 x 4.6

2.2 Description of EUT

The E7-Campus-Indoor is a WiFi 7 access point with (1) 10GbE PoE port and (1) 1GbE PoE port. The E7-Campus-Indoor transmits in the 2.4 GHz, 5 GHz, and 6 GHz frequency bands using integral antennas and is powered by an 802.3++ PoE power adapter.

This device does not support channel puncturing.

For CDD transmission, direction gain is calculated as follows.

Array Gain = $10 \log(\text{NANT}/\text{NSS})$ dB

NANT = number of transmit antennas and NSS = number of spatial streams. NSS = 1 considered worst case. For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $\text{NANT} \leq 4$;

For PSD measurements when $\text{Nss}=1$: Array Gain = $10 \log(\text{NANT}/\text{NSS})$ dB + Antenna Gain (dBi). Or 6.02 dB + 12 dBi = 18.02 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-8	be (HE20)	6895, 6915, 6935, 6955, 6975, 6995,	TP0
		7015, 7035, 7055, 7075, 7095	TP2
		7115	TP1
	be (HE40)	6925, 6945, 6965, 6985	TP3
		7005, 7025, 7045, 7065, 7085	TP4
	be (HE80)	6945	TP6
		7025	TP7
	be (HE160)	6985	TP9
	be (HE320)	6905	TP11

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-Campus-Indoor (Note 1) SN: 1FFB30	Access Point	PoE Input / Shielded Cat 5E cable
BN: UBIQUITI MN: U-POE++ SN: N/A	PoE Injector	PoE Output / Shielded Cat 5E to E7-Campus-Indoor, and Ethernet / unshielded Cat 5E to PC
BN: DELL MN: XPS 13 SN: N/A	Laptop PC	Ethernet / un-shielded Cat 5E

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- Campus-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 to PoE 48 Volts
AC Mains Frequency	60 Hz
Temperature	21.1 – 23.3 °C
Humidity	22.5 – 29.4 %
Barometric Pressure	1017 mBar

2.6 Operating Modes

The E7-Campus-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 maximum conducted output power and maximum power spectral density) 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

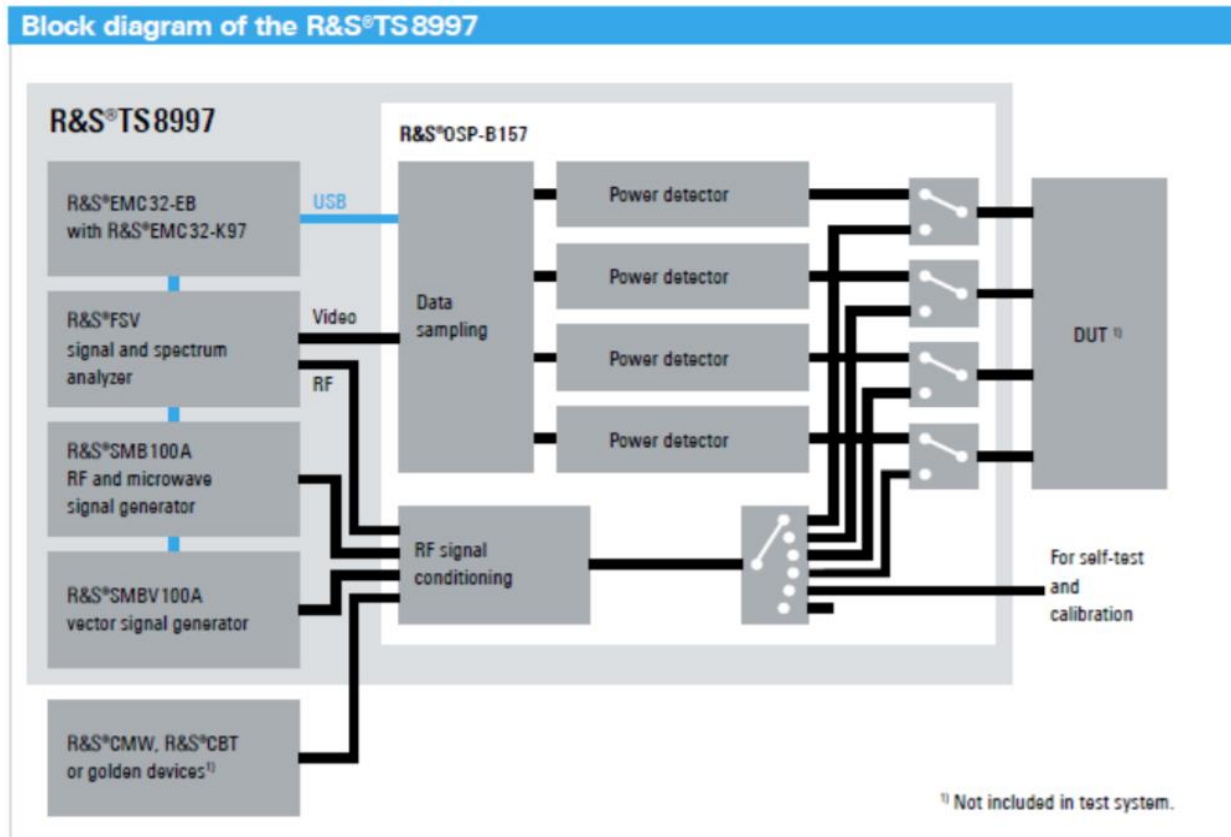


Diagram 1: Test Configuration Block Diagram

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	6875 to 7115	Compliant
15.407(a)	RSS-248 §4.5	Peak Output Power ¹	6875 to 7115	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	6875 to 7115	Compliant
15.407(d)	RSS-248 §4.7	Contention Based Protocol	6875 to 7115	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

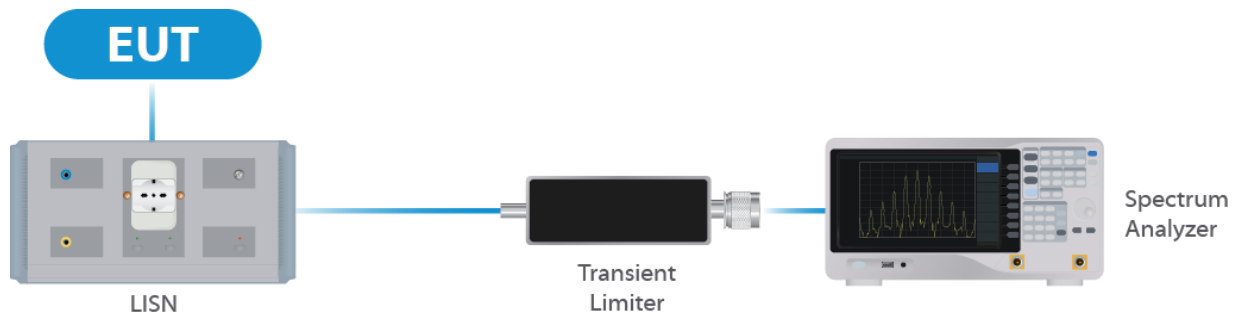


Figure 1: Conducted Emissions Test

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

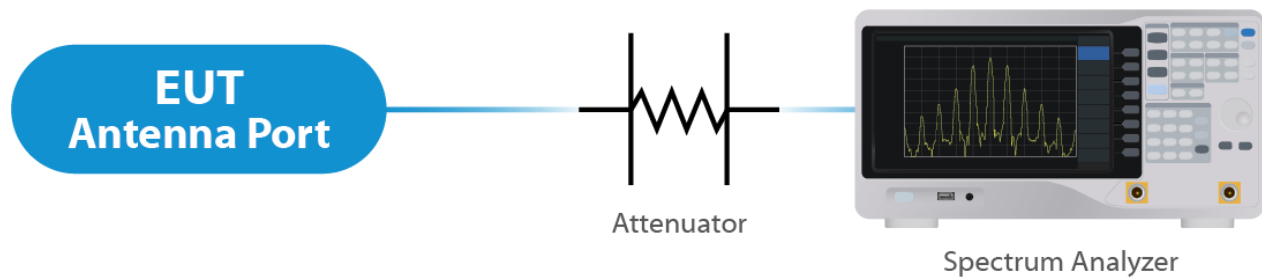


Figure 2: Direct Connect at the Antenna Port Test

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

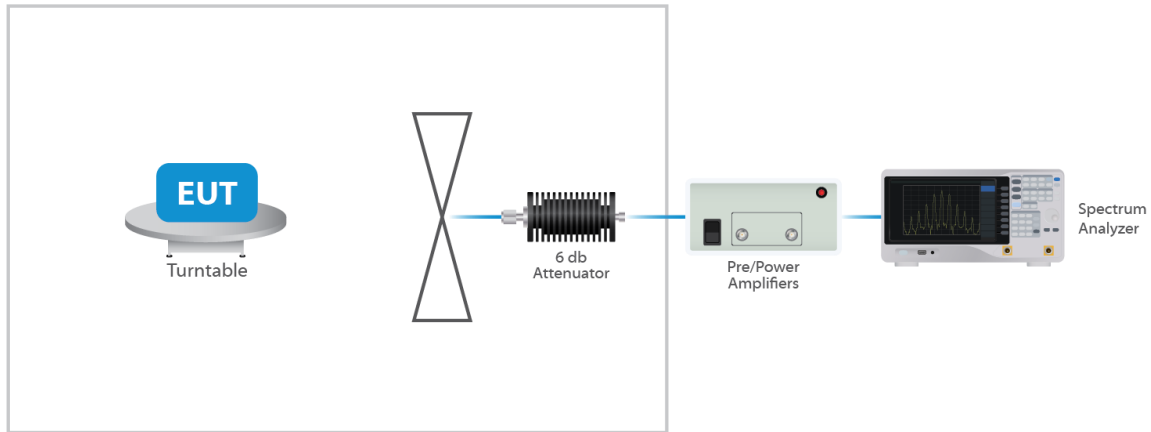


Figure 3: Radiated Emissions Test

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	5/20/2025	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

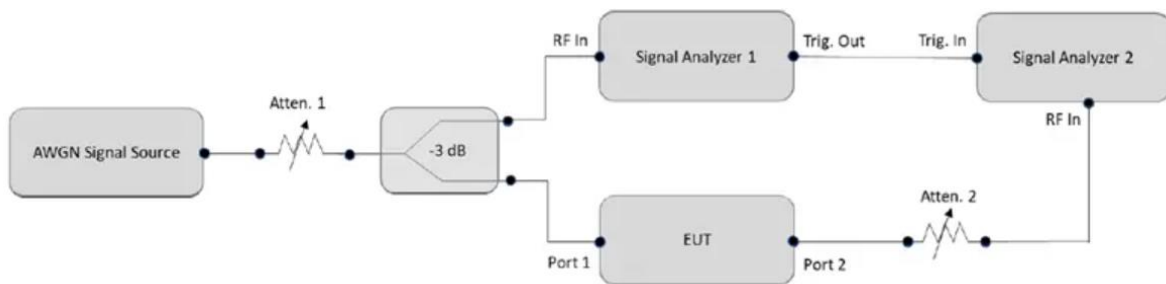


Figure 1. CBP conducted test setup diagram. Source: KDB 987594 D02 V01r01

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

5 Test Results

5.1 §15.203 Antenna Requirements

The EUT uses an internal integral antenna. Per the manufacturer, the Maximum gain of the antenna per chain is 12 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

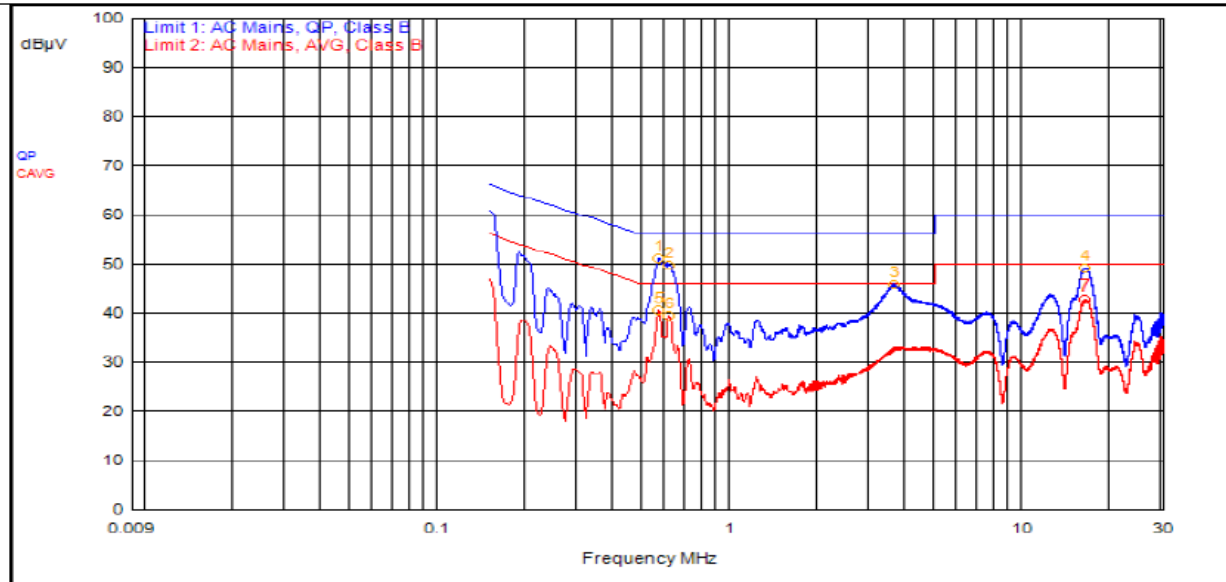
See Section 2.2 for directional gain calculation.

Results

The EUT complied with the specification

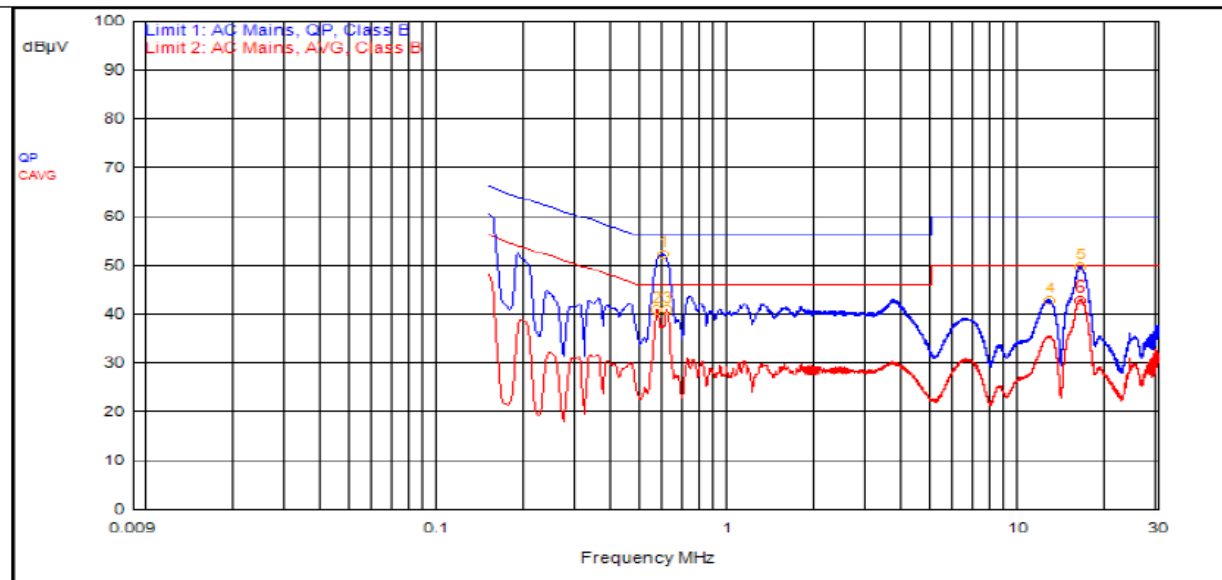
5.2 §15.207 Conducted Emissions at Mains Ports Data

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
1	567,000kHz	12.40	0.00		QPeak	38.61	51.01	56.00	-4.99			
2	615,000kHz	12.38	0.00		QPeak	37.44	49.82	56.00	-6.18			
3	3.594	12.29	0.10		QPeak	33.37	45.76	56.00	-10.24			
4	16.206	12.40	0.20		QPeak	36.61	49.21	60.00	-10.79			
5	567,000kHz	12.40	0.00		C_AVG	28.23	40.63			46.00	-5.37	
6	609,000kHz	12.38	0.00		C_AVG	27.16	39.54			46.00	-6.46	
7	16.206	12.40	0.20		C_AVG	30.08	42.68			50.00	-7.32	

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
1	591,000kHz	12.40	0.00		QPeak	39.70	52.10	56.00	-3.90			
5	16.143	12.43	0.20		QPeak	37.04	49.67	60.00	-10.33			
4	12.678	12.40	0.20		QPeak	30.24	42.84	60.00	-17.16			
2	567,000kHz	12.41	0.00		C_AVG	28.53	40.94			46.00	-5.06	
3	612,000kHz	12.40	0.00		C_AVG	28.43	40.83			46.00	-5.17	
6	16.155	12.43	0.20		C_AVG	30.17	42.80			50.00	-7.20	

Result

The EUT complied with the specification limit.

5.3 §15.407(a) 26 dB Emissions Bandwidth

All chains were measured under the guidance of KDB 789033 Section II.C. and KDB 662911 D01. Please see associated annex for details on instrument settings.

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
20	6895	19.2	22.8
20	7015	19.2	24.7
20	7115	19.2	24.5
40	6925	38.3	43.8
40	7005	38.3	43.8
40	7085	38.3	43.8
80	6945	79.0	90.5
80	7025	79.5	93.0
160	6985	157.0	176.0
320	6905	317.5	337.5

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 for directional gain calculation.

The maximum average RF EIRP output power measured for this device was 29.23 dBm or 837.53 mW. The limit is 30 dBm EIRP, or 1 Watt EIRP. The antenna has a gain of 12 dBi.

5.4.1 Output Power Per Chain

Modulation (BW)	Frequency (MHz)	Chain0 (dBm)	Chain1 (dBm)	Chain2 (dBm)	Chain3 (dBm)	Total Output Power* EIRP (dBm)
EHT 20	6895	0.49	-0.28	-0.27	0.63	18.19
EHT 20	7015	1.31	-0.34	0.79	1.08	18.78
EHT 20	7115	1.02	-0.36	0.30	0.81	18.50
EHT 40	6925	3.74	2.46	3.30	3.64	21.33
EHT 40	7005	3.47	2.00	2.97	3.42	21.03
EHT 40	7085	3.62	2.61	3.34	4.03	21.45
EHT 80	6945	6.13	5.30	6.10	6.75	24.12
EHT 80	7025	7.16	5.47	6.37	6.68	24.49
EHT 160	6985	9.72	8.32	9.24	9.48	27.24
EHT 320	6905	12.70	11.62	11.98	12.60	29.23

Nss>1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT20	6895	Mcs0_Nss4	0	6.19	12	18.19	30	-11.81
EHT20	7015	Mcs0_Nss4	2	6.78	12	18.78	30	-11.22
EHT20	7115	Mcs0_Nss4	1	6.50	12	18.50	30	-11.50
EHT40	6925	Mcs0_Nss4	3	9.33	12	21.33	30	-8.67
EHT40	7005	Mcs0_Nss4	4	9.03	12	21.03	30	-8.97
EHT40	7085	Mcs0_Nss4	4	9.45	12	21.45	30	-8.55
EHT80	6945	Mcs0_Nss4	6	12.12	12	24.12	30	-8.88
EHT80	7025	Mcs0_Nss4	7	12.49	12	24.49	30	-5.51
EHT160	6985	Mcs0_Nss4	9	15.24	12	27.24	30	-2.76
EHT320	6905	Mcs0_Nss4	11	17.23	12	29.23	30	-0.77

Nss=1

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Total Summed Output Power* (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dBm)
EHT20	6895	Mcs0_Nss1	-6	0.10	12	12.10	30	-17.90
EHT20	7015	Mcs0_Nss1	-4	0.78	12	12.78	30	-17.22
EHT20	7115	Mcs0_Nss1	-5	0.48	12	12.48	30	-17.20
EHT40	6925	Mcs0_Nss1	-3	3.11	12	15.11	30	-14.89
EHT40	7005	Mcs0_Nss1	-1	3.90	12	15.90	30	-14.10
EHT40	7085	Mcs0_Nss1	-2	3.34	12	15.34	30	-14.66
EHT80	6945	Mcs0_Nss1	0	6.02	12	18.02	30	-11.98
EHT80	7025	Mcs0_Nss1	2	7.05	12	19.05	30	-10.95
EHT160	6985	Mcs0_Nss1	4	9.20	12	21.20	30	-8.80
EHT320	6905	Mcs0_Nss1	6	12.14	12	24.14	30	-5.86

Result

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

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

5.5 §15.407(b)(7) Spurious Emissions

5.5.1 Radiated Spurious Emissions in the Restricted Bands of § 15.205

The EUT uses various power settings based on the channel in use. In order to reduce test time, the radiated spurious emissions at the lowest, middle, and highest channel were measured at the maximum power of TP31.

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

Result

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

QuasiPeak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
No Significant Emissions were Observed in this Orientation of the Antenna						Vertical	--
No Significant Emissions were Observed in this Orientation of the Antenna						Horizontal	--

Table 5: Radiated Emissions 30 - 1000 MHz

Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.313 GHz	55.827	74	-18.173	232	1.5	Vertical	9.734
14.651 GHz	59.553	74	-14.447	202	1.632	Vertical	15.061
14.665 GHz	59.649	74	-14.351	359	1.631	Vertical	15.099
16.899 GHz	56.995	74	-17.005	103	1.632	Vertical	14.067
10.312 GHz	56.761	74	-17.239	136	3.81	Horizontal	9.737
10.312 GHz	57.944	74	-16.056	218	3.81	Horizontal	9.737
14.816 GHz	58.967	74	-15.033	206	1.5	Horizontal	14.516
15.017 GHz	59.134	74	-14.866	20	2.133	Horizontal	14.049

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.313 GHz	44.154	54	-9.846	232	1.5	Vertical	9.734
14.651 GHz	46.231	54	-7.769	202	1.632	Vertical	15.061
14.665 GHz	46.209	54	-7.791	359	1.631	Vertical	15.099
16.899 GHz	43.92	54	-10.08	103	1.632	Vertical	14.067
10.312 GHz	47.031	54	-6.969	136	3.81	Horizontal	9.737
10.312 GHz	50.068	54	-3.932	218	3.81	Horizontal	9.737
14.816 GHz	45.427	54	-8.573	206	1.5	Horizontal	14.516
15.017 GHz	44.76	54	-9.24	20	2.133	Horizontal	14.049

Table 6: Radiated Emissions 1 - 17 GHz at the Lowest Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.313 GHz	54.339	74	-19.661	245	1.844	Vertical	9.734
10.929 GHz	55.717	74	-18.283	135	2.635	Vertical	12.261
14.579 GHz	58.439	74	-15.561	21	1.631	Vertical	14.635
14.617 GHz	59.37	74	-14.63	304	2.136	Vertical	14.967
10.312 GHz	56.58	74	-17.42	135	3.81	Horizontal	9.737
10.313 GHz	56.108	74	-17.892	217	3.808	Horizontal	9.734
14.632 GHz	59.416	74	-14.584	5	1.5	Horizontal	15.008
14.676 GHz	59.213	74	-14.787	308	3.647	Horizontal	15.133

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
10.313 GHz	41.467	54	-12.533	245	1.844	Vertical	9.734
10.929 GHz	42.496	54	-11.504	135	2.635	Vertical	12.261
14.579 GHz	45.637	54	-8.363	21	1.631	Vertical	14.635
14.617 GHz	45.656	54	-8.344	304	2.136	Vertical	14.967
10.312 GHz	46.185	54	-7.815	135	3.81	Horizontal	9.737
10.313 GHz	45.206	54	-8.794	217	3.808	Horizontal	9.734
14.632 GHz	46.008	54	-7.992	5	1.5	Horizontal	15.008
14.676 GHz	46.123	54	-7.877	308	3.647	Horizontal	15.133

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)
7.12 GHz	52.032	74	-21.968	184	1.5	Vertical	-5.567
11.015 GHz	55.109	74	-18.891	27	1.632	Vertical	11.188
14.223 GHz	60.075	74	-13.925	234	1.63	Vertical	14.229
14.245 GHz	59.556	74	-14.444	178	1.63	Vertical	14.123
16.799 GHz	56.776	74	-17.224	131	1.628	Vertical	13.291
7.1173 GHz	42.599	74	-31.401	42	3.812	Horizontal	-5.601
10.312 GHz	55.05	74	-18.95	215	3.317	Horizontal	9.737
10.313 GHz	55.194	74	-18.806	188	3.808	Horizontal	9.734
14.233 GHz	62.36	74	-11.64	221	3.319	Horizontal	14.181
14.243 GHz	61.104	74	-12.896	225	1.5	Horizontal	14.133

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
7.12 GHz	39.363	54	-14.637	184	1.5	Vertical	-5.567
11.015 GHz	41.813	54	-12.187	27	1.632	Vertical	11.188
14.223 GHz	46.561	54	-7.439	234	1.63	Vertical	14.229
14.245 GHz	46.093	54	-7.907	178	1.63	Vertical	14.123
16.799 GHz	43.187	54	-10.813	131	1.628	Vertical	13.291
7.1173 GHz	29.96	54	-24.04	42	3.812	Horizontal	-5.601
10.312 GHz	42.717	54	-11.283	215	3.317	Horizontal	9.737
10.313 GHz	42.137	54	-11.863	188	3.808	Horizontal	9.734
14.233 GHz	49.261	54	-4.739	221	3.319	Horizontal	14.181
14.243 GHz	47.601	54	-6.399	225	1.5	Horizontal	14.133

Table 8: Radiated Emissions 1 - 17 GHz at the Highest Frequency

Peak

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.051 GHz	54.846	74	-19.154	357	Vertical	0.168
28.067 GHz	51.293	74	-22.707	349	Vertical	-0.215
30.937 GHz	55.46	74	-18.54	1	Vertical	0.778
35.079 GHz	54.894	74	-19.106	11	Vertical	3.489
21.037 GHz	57	74	-17	353	Horizontal	0.4
28.075 GHz	54.971	74	-19.029	329	Horizontal	-0.43
35.065 GHz	53.776	74	-20.224	29	Horizontal	3.183

Avg

Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
21.051 GHz	39.819	54	-14.181	357	Vertical	0.168
28.067 GHz	37.472	54	-16.528	349	Vertical	-0.215
30.937 GHz	47.692	54	-6.308	1	Vertical	0.778
35.079 GHz	37.464	54	-16.536	11	Vertical	3.489
21.037 GHz	42.201	54	-11.799	353	Horizontal	0.4
28.075 GHz	39.958	54	-14.042	329	Horizontal	-0.43
35.065 GHz	37.895	54	-16.105	29	Horizontal	3.183

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. Adjusted limit of -7 dBm.

See Section 2.2 for directional gain calculation.

Results of this testing are summarized.

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT20	6895	Mcs0_Nss4	0	-7.59	12	-7	-0.59
EHT20	7015	Mcs0_Nss4	2	-7.26	12	-7	-0.26
EHT20	7115	Mcs0_Nss4	1	-7.47	12	-7	-0.47
EHT40	6925	Mcs0_Nss4	3	-7.49	12	-7	-0.49
EHT40	7005	Mcs0_Nss4	4	-8.06	12	-7	-1.06
EHT40	7085	Mcs0_Nss4	4	-7.55	12	-7	-0.55
EHT80	6945	Mcs0_Nss4	6	-7.66	12	-7	-0.66
EHT80	7025	Mcs0_Nss4	7	-7.60	12	-7	-0.60
EHT160	6985	Mcs0_Nss4	9	-7.30	12	-7	-0.30
EHT320	6905	Mcs0_Nss4	11	-7.93	12	-7	-0.93

Modulation (BW)	Freq. (MHz)	Data Rate	TP Setting	Total Sum PSD EIRP (dBm)	Antenna Gain (dBi)	Limit (dBm)	Margin (dBm)
EHT20	6895	Mcs0_Nss1	-6	-13.69	12	-13.02	-0.67
EHT20	7015	Mcs0_Nss1	-4	-13.55	12	-13.02	0.53
EHT20	7115	Mcs0_Nss1	-5	-13.43	12	-13.02	0.41
EHT40	6925	Mcs0_Nss1	-3	-13.64	12	-13.02	0.62
EHT40	7005	Mcs0_Nss1	-1	-13.48	12	-13.02	0.46
EHT40	7085	Mcs0_Nss1	-2	-13.80	12	-13.02	0.78
EHT80	6945	Mcs0_Nss1	0	-13.77	12	-13.02	0.75
EHT80	7025	Mcs0_Nss1	2	-13.20	12	-13.02	-0.18
EHT160	6985	Mcs0_Nss1	4	-13.34	12	-13.02	-0.32
EHT320	6905	Mcs0_Nss1	6	-13.05	12	-13.02	-0.03

5.6.1 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	7015	-3	-8.78	-7.78	12	-7	-1.78	-0.78
EHT40	7005	1	-8.58	-7.84	12	-7	-1.58	-0.84
EHT80	6945	-1	-9.04	-7.86	12	-7	-2.04	-0.86
EHT160	6985	1	-7.71	-7.22	12	-7	-0.71	-0.22
EHT 320	6905	0	-9.97	-7.23	12	-7	-2.97	-0.23

Result

The maximum average power spectral density was less than the adjust limit of -7 dBm EIRP; therefore, the EUT complies with the specification.

5.6.2 OFDMA RU Check

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

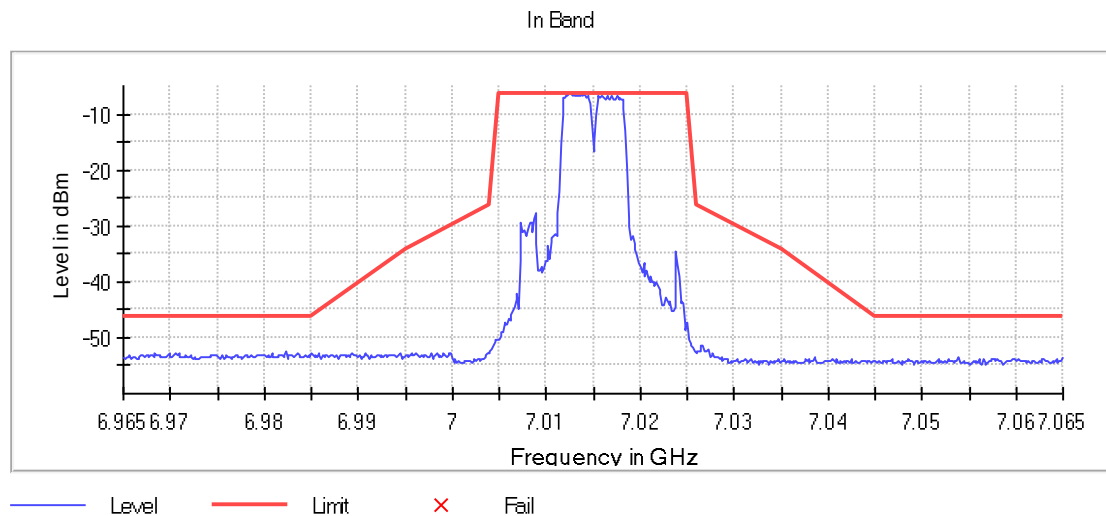


Figure 5: 7015 20MHz RU Vérification - Center

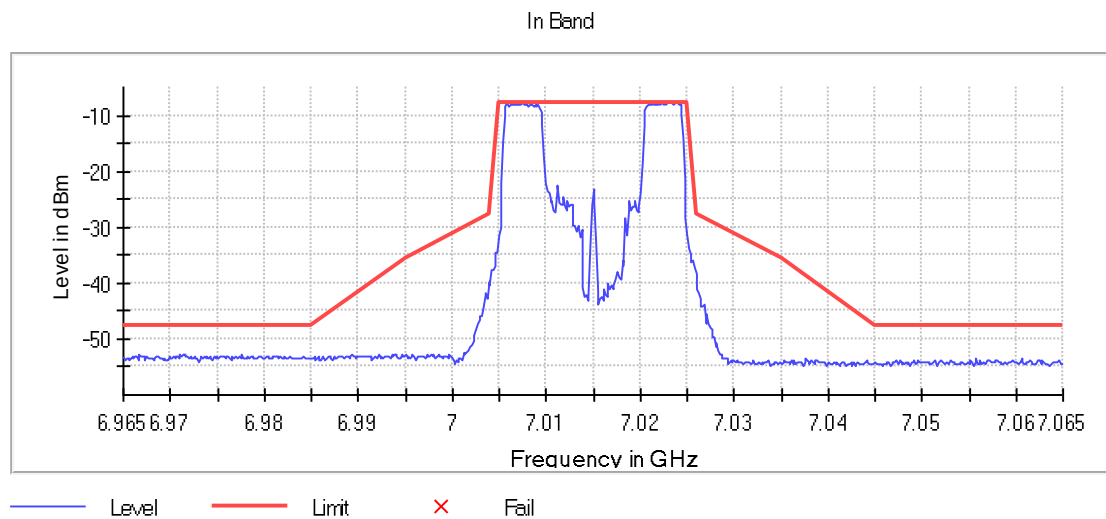


Figure 6: 7015 20MHz RU Vérification - Edge

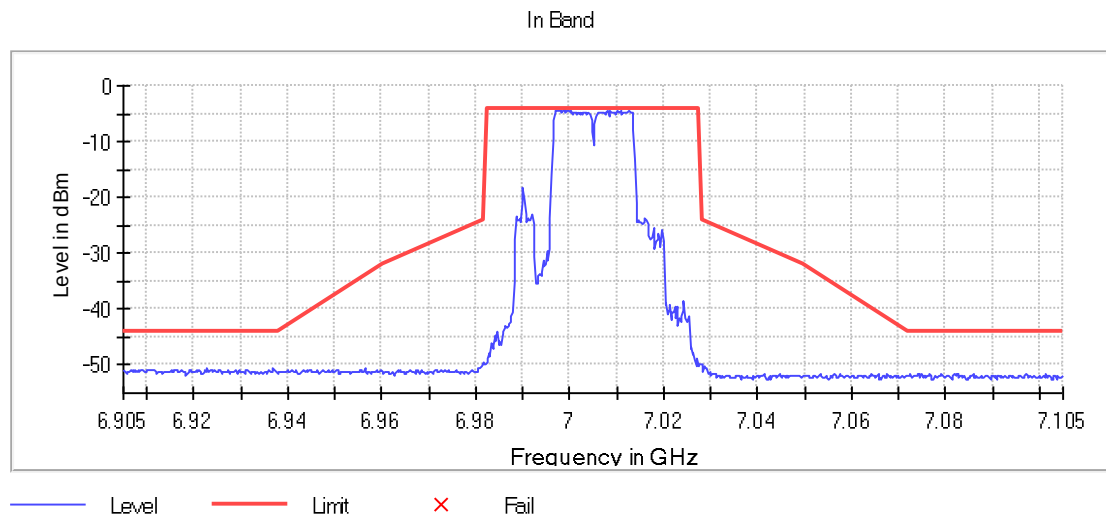


Figure 7: 7005 40MHz RU Vérification - Center

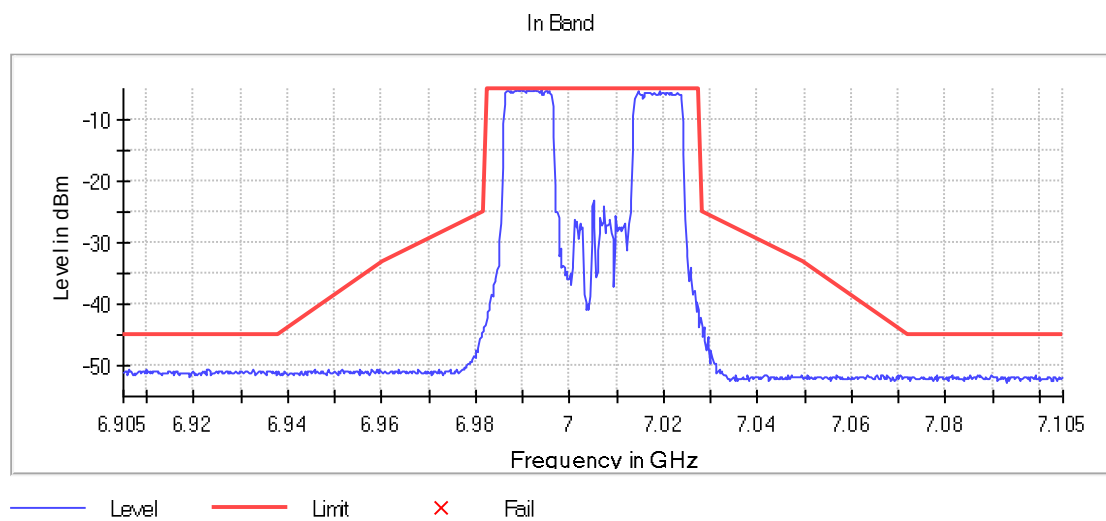


Figure 8: 7005 40MHz RU Vérification - Edge

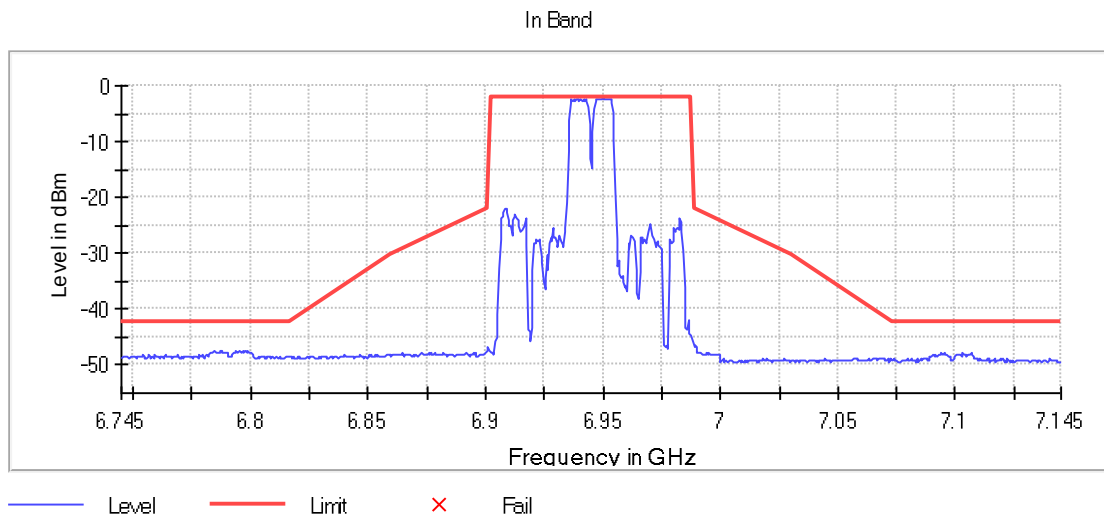


Figure 9: 6945 80MHz RU Vérification - Center

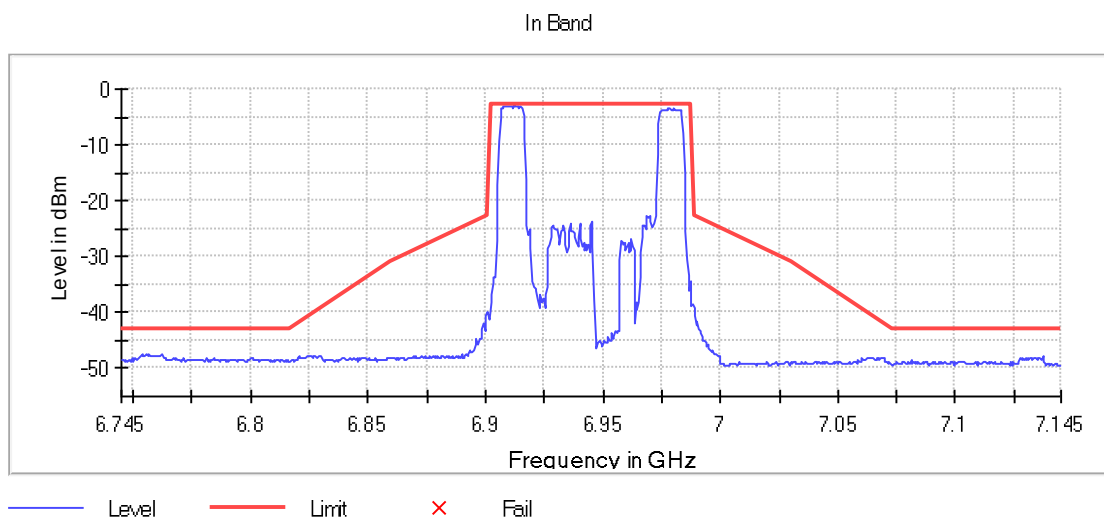


Figure 10: 6945 80MHz RU Vérification - Edge

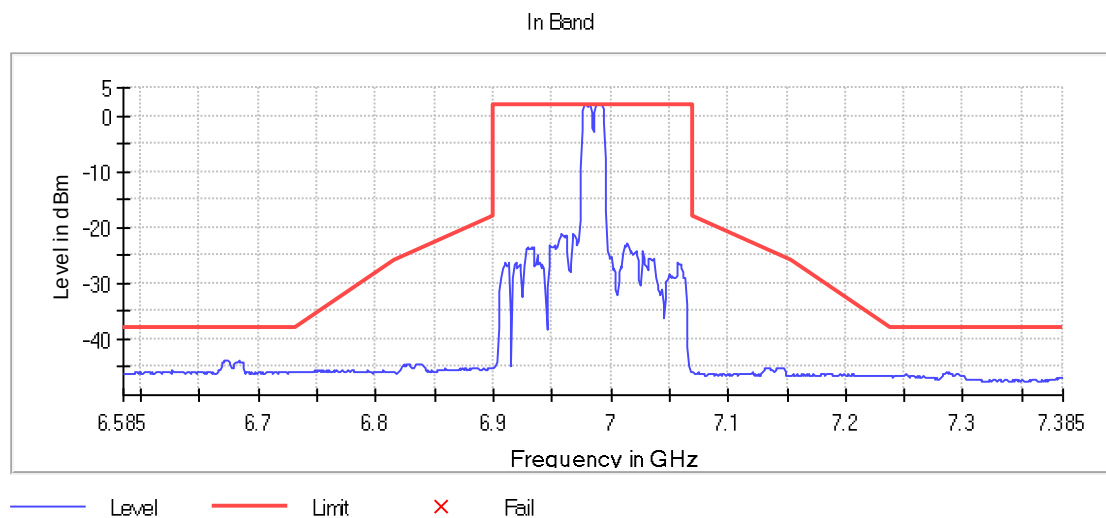


Figure 11: 6985 160MHz RU Vérification - Center

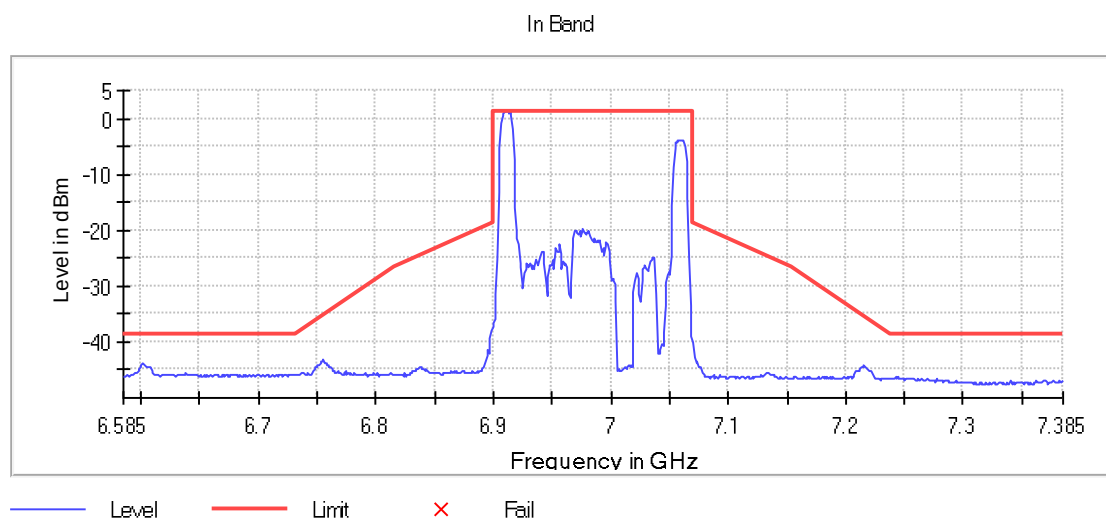


Figure 12: 6985 160MHz RU Vérification - Edge

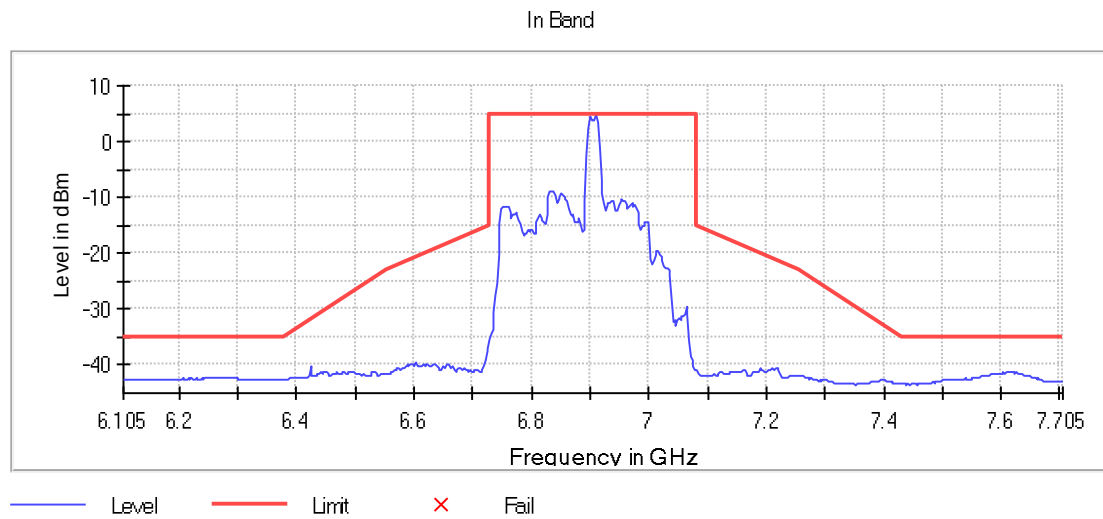


Figure 13: 6905 320MHz RU Vérification - Center

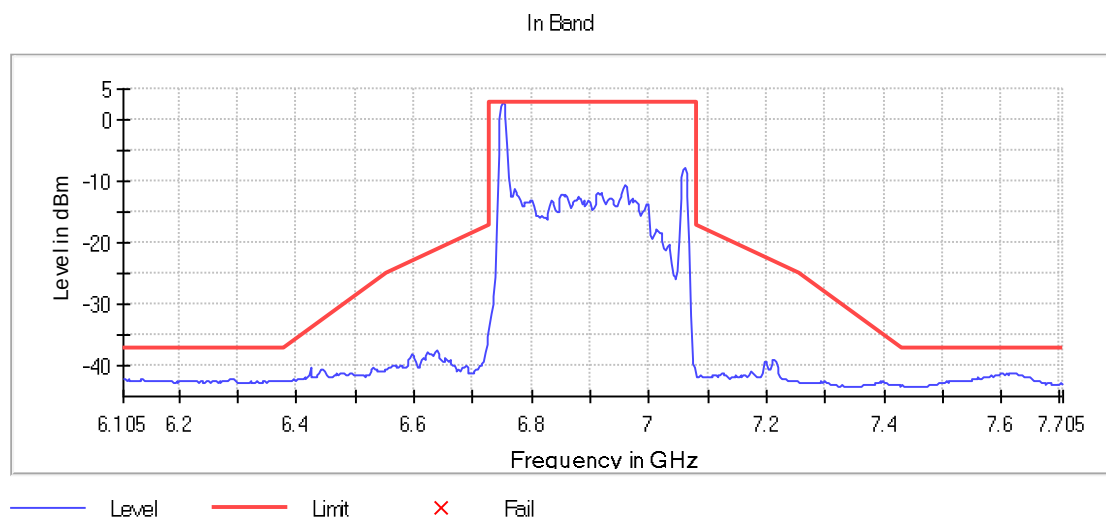


Figure 14: 6905 320MHz RU Vérification - Edge

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.

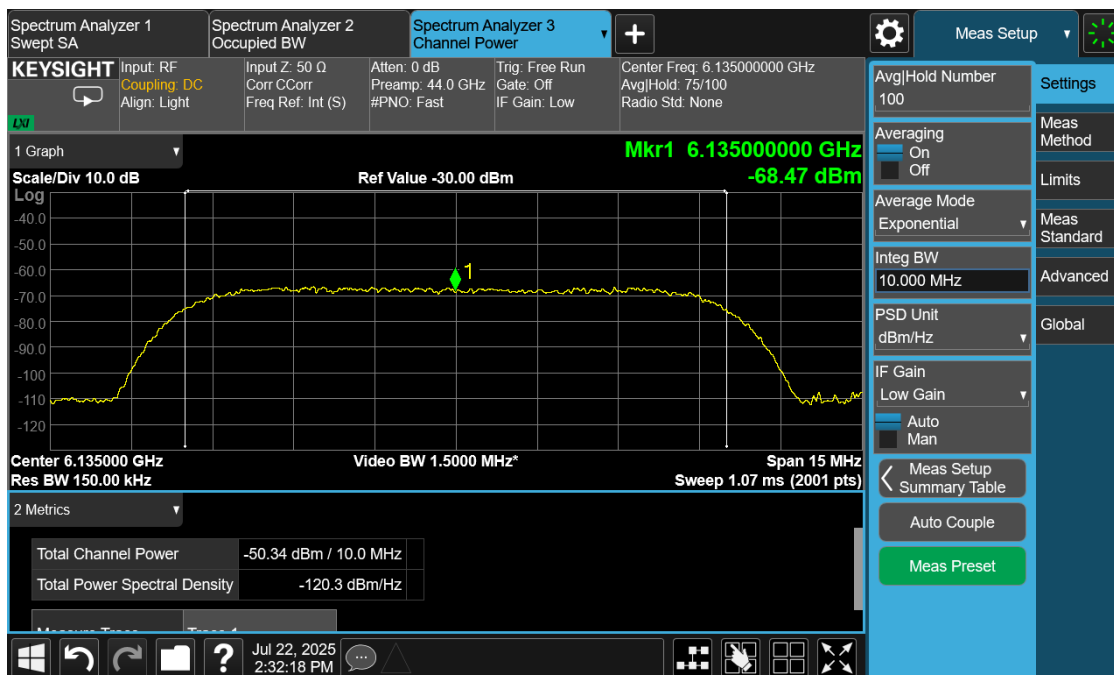
Initially the test setup was connected directly to the signal source with all splitters (splitters terminated with a 50-ohm loads on unused ports) and cables in place to verify the AWGN signal is 10MHz wide at a signal level of less than or equal to -62 dBm and for conducted measurements the threshold was adjusted for an antenna gain of 12 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.

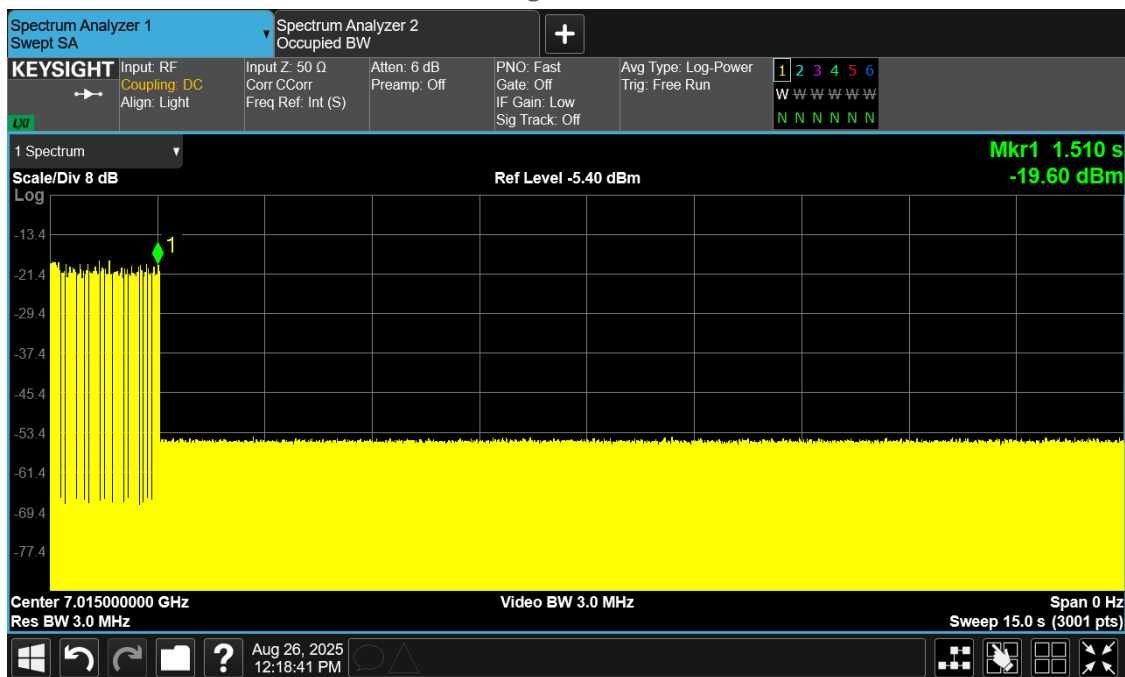
Starting at the levels established above, the AWGN signal was introduced to the DUT and increased to determine a threshold level at where the DUT will terminate with at least a 90% detection rate. The level at the DUT, which the 90% detection rate was achieved was recorded as the “Sensitivity Level”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

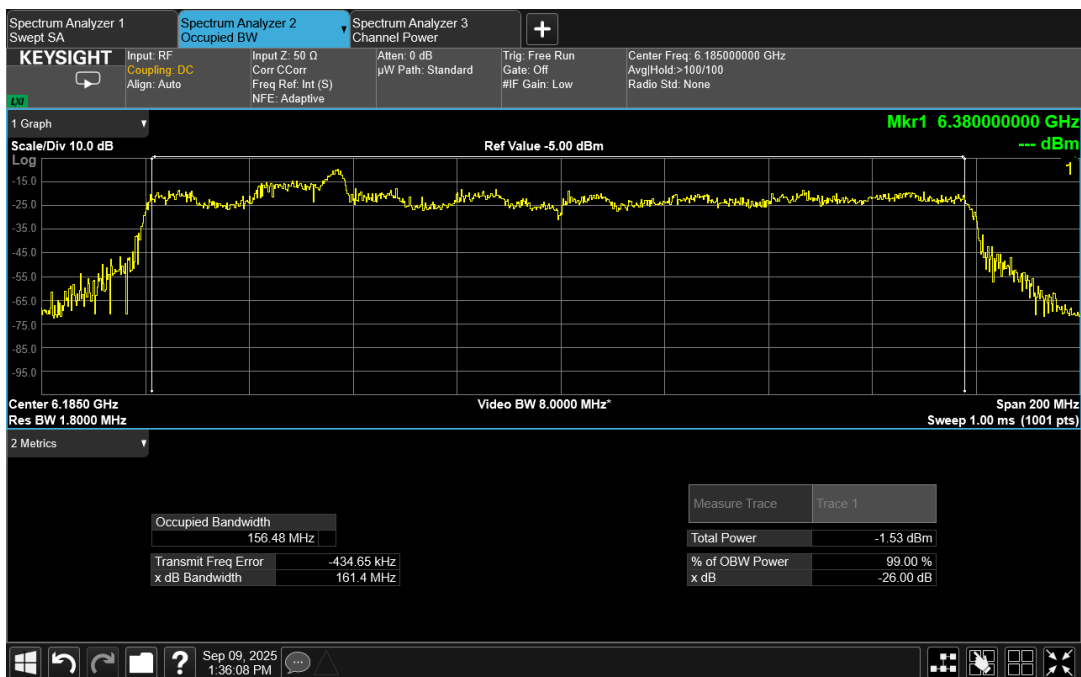
Testing shall be repeated at each applicable channel and bandwidth as noted in Table 1 of KDB 987594 D02.



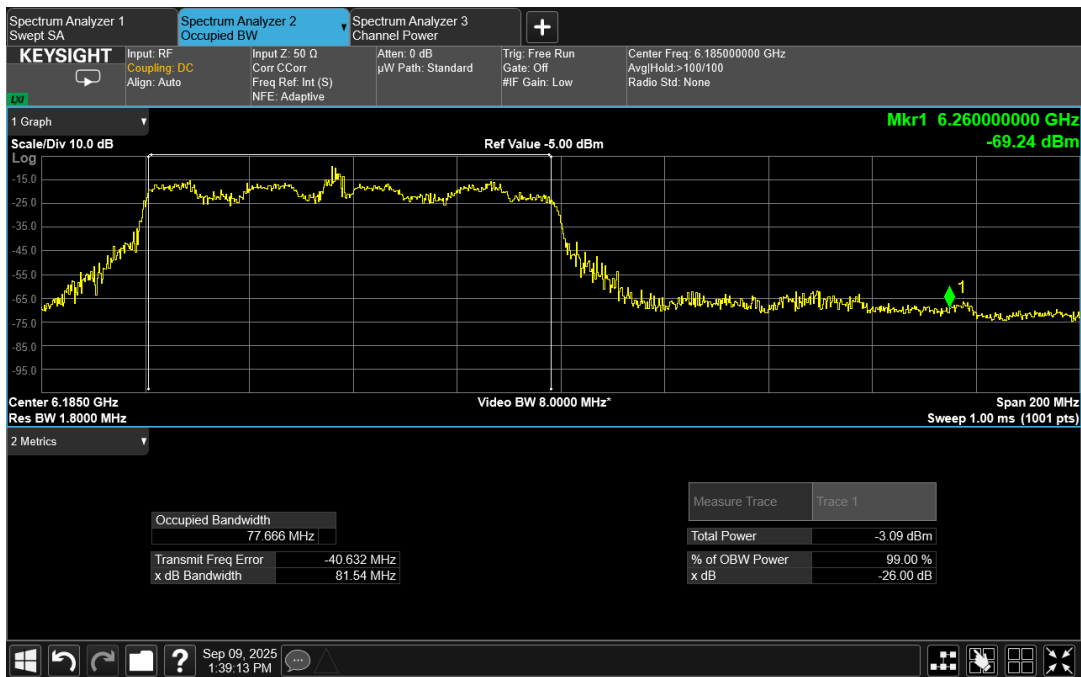
Plot 1: AWGN Signal BW/Power Details



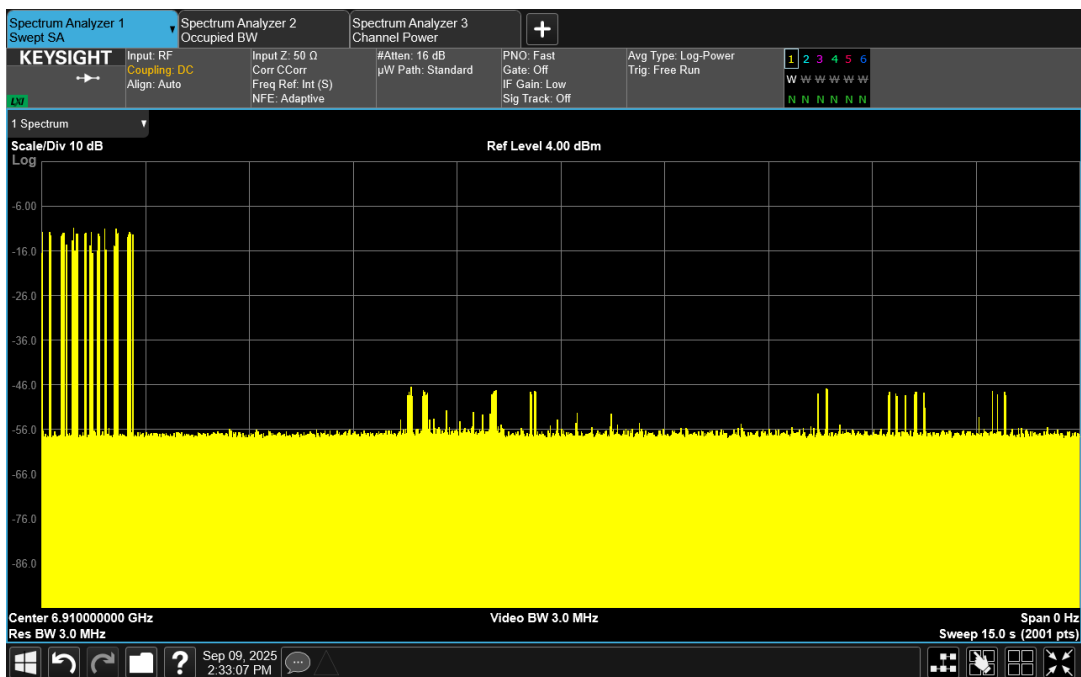
Plot 2: AWGN Signal Detection 20MHz



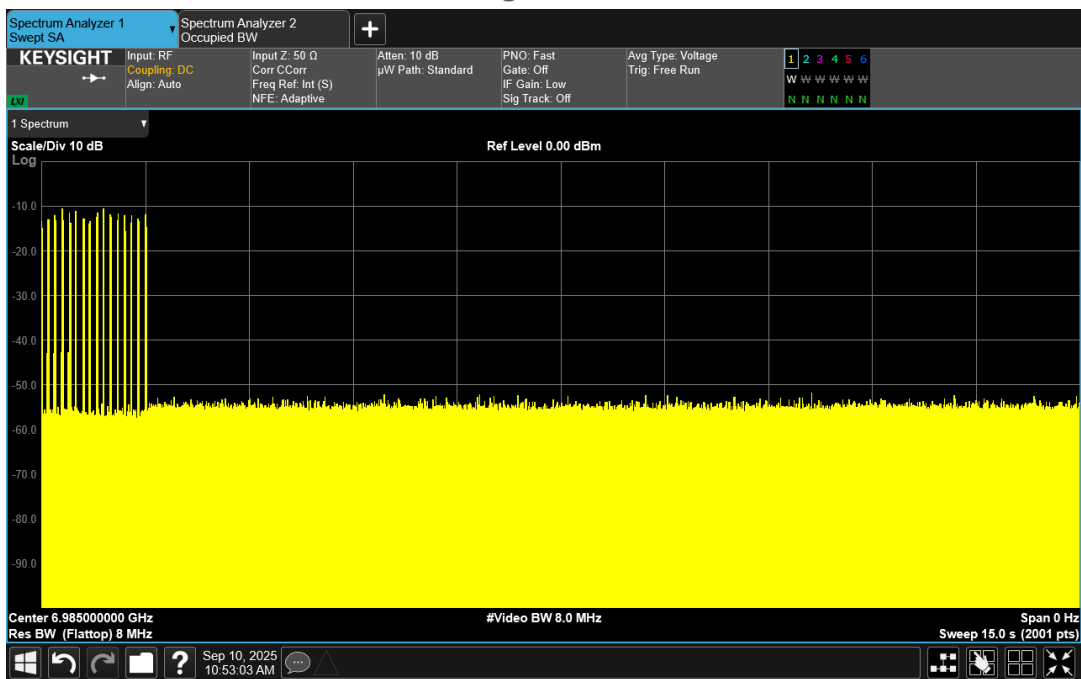
Plot 3: EUT 160MHz Bandwidth



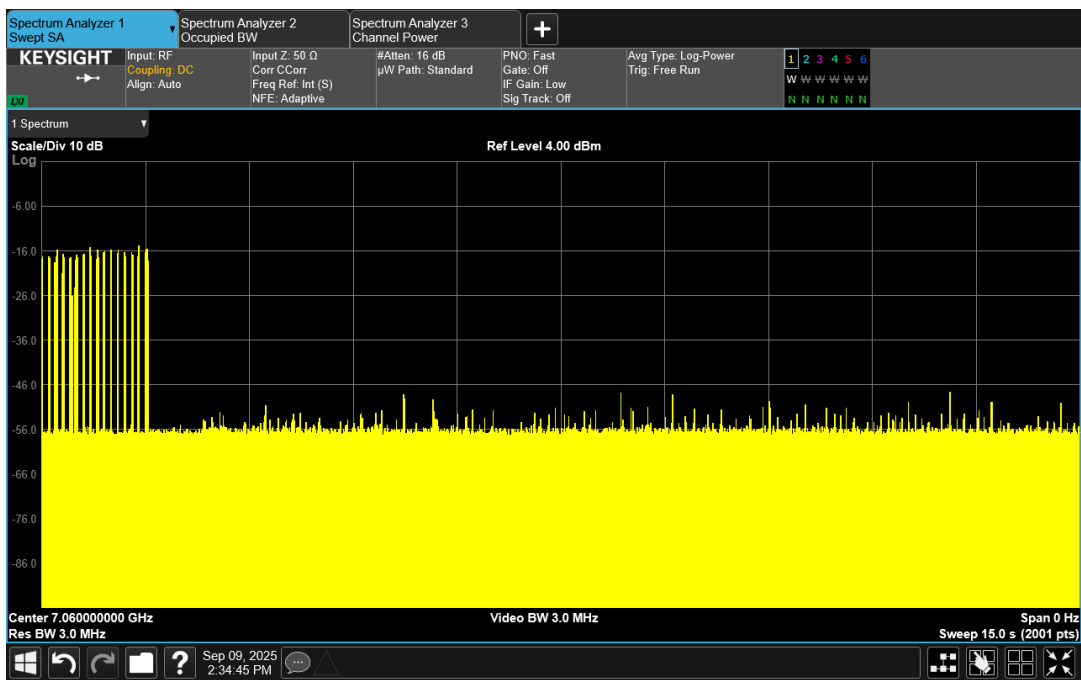
Plot 4: EUT 160MHz Bandwidth Reduction



Plot 5: AWGN Signal Detection 160MHz



Plot 6: AWGN Signal Detection 160MHz



Plot 7: AWGN Signal Detection 160MHz

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

Band	BW _{EUT}	F _{c1}	F _{c2}	Reduce Transmission (dBm)	Stop Tx AWGN Power (dBm)	Adjusted Power (dBm)	Limit (dBm)	Margin (dB)	Result Detection >90%
UNII-5 5.925 - 6.425GHz	20	6135	6135	-46	-44	-62.8	-50	-12.8	Pass
	160	6185	6110	-46	-44	-62.8	-50	-12.8	Pass
			6185	-45	-33	-51.8	-50	-1.8	Pass
			6260	-53	-51	-69.8	-50	-19.8	Pass
	320	6265	6110	-51	-49	-67.8	-50	-17.8	Pass
			6265	-46	-42	-60.8	-50	-10.8	Pass
			6410	-51	-42	-60.8	-50	-10.8	Pass
UNII-6 6.425 - 6.525GHz	20	6455	6455	-48	-44	-62.8	-50	-12.8	Pass
	160	6505	6430	-48	-42	-60.8	-50	-10.8	Pass
			6505	-46	-42	-60.8	-50	-10.8	Pass
			6580	-47	-43	-61.8	-50	-11.8	Pass
UNII-7 6.525 - 6.875GHz	20	6695	6695	-51	-48	-66.8	-50	-16.8	Pass
	160	6665	6595	-51	-48	-66.8	-50	-16.8	Pass
			6665	-45	-33	-51.8	-50	-1.8	Pass
			6740	-51	-47	-65.8	-50	-15.8	Pass
	320	6745	6590	-51	-46	-64.8	-50	-14.8	Pass
			6745	-46	-42	-60.8	-50	-10.8	Pass
UNII-8 6.875 - 7.125GHz	20	7015	7015	-46	-42	-60.8	-50	-10.8	Pass
	160	6985	6910	-49	-47	-65.8	-50	-15.8	Pass
			6985	-53	-32	-50.8	-50	-0.8	Pass
			7060	-47	-44	-62.8	-50	-12.8	Pass

Min. Antenna Gain (dBi)	12	Ports	Path Loss (dBm)	AWGN BW (Clock)	
Max Threshold Level (TL)	-50	6G0 - 6G4	-18.8	23MHz	

Table 10: 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 --