



427 West 12800 South
 Draper, UT 84020

Test Report Certification

FCC ID	SWX-UX
ISED ID	6545A-UX
Equipment Under Test	UX
Test Report Serial Number	TR8068_01
Date of Test(s)	April 20 Through May 1, 2023
Report Issue Date	May 4, 2023

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E RSS-GEN Issue 5	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.



NVLAP LAB CODE 600241-0

Certification of Engineering Report

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

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

On this 4th day of May 2023, I individually and for Unified Compliance Laboratory certify that the 4ytstatements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith.

Although NVLAP has accredited the Unified Compliance Laboratory testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. federal government.

Unified Compliance Laboratory



Written By: Clay Allred



Reviewed By: Richard L. Winter

Revision History		
Revision	Description	Date
01	Original Report Release	May 4, 2023

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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	UX
Serial Number	N/A
Dimensions (cm)	9.8 x 9.8 x 2.8

2.2 Description of EUT

The UX is a WiFi 6 access point designed for wide-ranging wireless coverage while maintain overall network capacity. The UX delivers and aggregate radio rate of up to 2.7 Gbps with 5 GHz (2x2) and 2.4 GHz (2x2) radios. The UX uses a sophisticated antenna design to offer excellent range. The UX has a Bluetooth management radio for easy in setup and administration of the wireless system. The UX is power from a USB C connector.

The table below show the channels used within the different modulation bandwidths.

Band	WiFi Mode	Modulation Bandwidth	Modulation Type	Frequency (MHz)
UNII-3	a	20 MHz	OFDM	5745, 5775, 5825
	n	20 MHz	HT	5745, 5775, 5825
	n	40 MHz	HT	5755, 5775, 5795
	ac	20 MHz	VHT	5745, 5775, 5825
	ac	40 MHz	VHT	5755, 5775, 5795
	ac	80 MHz	VHT	5775
	ax	20 MHz	HE	5745, 5775, 5825
	ax	40 MHz	HE	5755, 5775, 5795
	ax	80 MHz	HE	5775

This report covers the circuitry of the device subject to FCC Part 15, Subpart E. The circuitry of the device subject to FCC Part 15 Subpart B was found to be compliant and is covered under a separate Unified Compliance Laboratory test report.

2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: UBIQUITI MN: UX SN: N/A	Wireless Access Point	See Section 2.4
BN: UBIQUITI MN: GP-M015-QC SN: N/A	USB C Power Adapter	See Section 2.4
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	LAN Port / 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
AC / USB-C	1	2 conductor power cord/80 cm
LAN	1	Un-shielded Cat 5e cable/5 meter
WAN	1	Un-shielded Cat 5e cable/5 meter

2.5 Operating Environment

Power Supply	120 VAC
AC Mains Frequency	60 Hz
Temperature	21.3 – 23.2 °C
Humidity	22.3 – 28.5 %
Barometric Pressure	1015 mBar

2.6 Operating Modes

The UX 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 a/n/ac/ax were investigated. All measurements are reported with the worst-case mode (802.11ax) unless otherwise stated.

2.7 EUT Exercise Software

EUT firmware version 1.0 was used to operate the transmitter using a constant transmit mode.

2.8 Block Diagram of Test Configuration

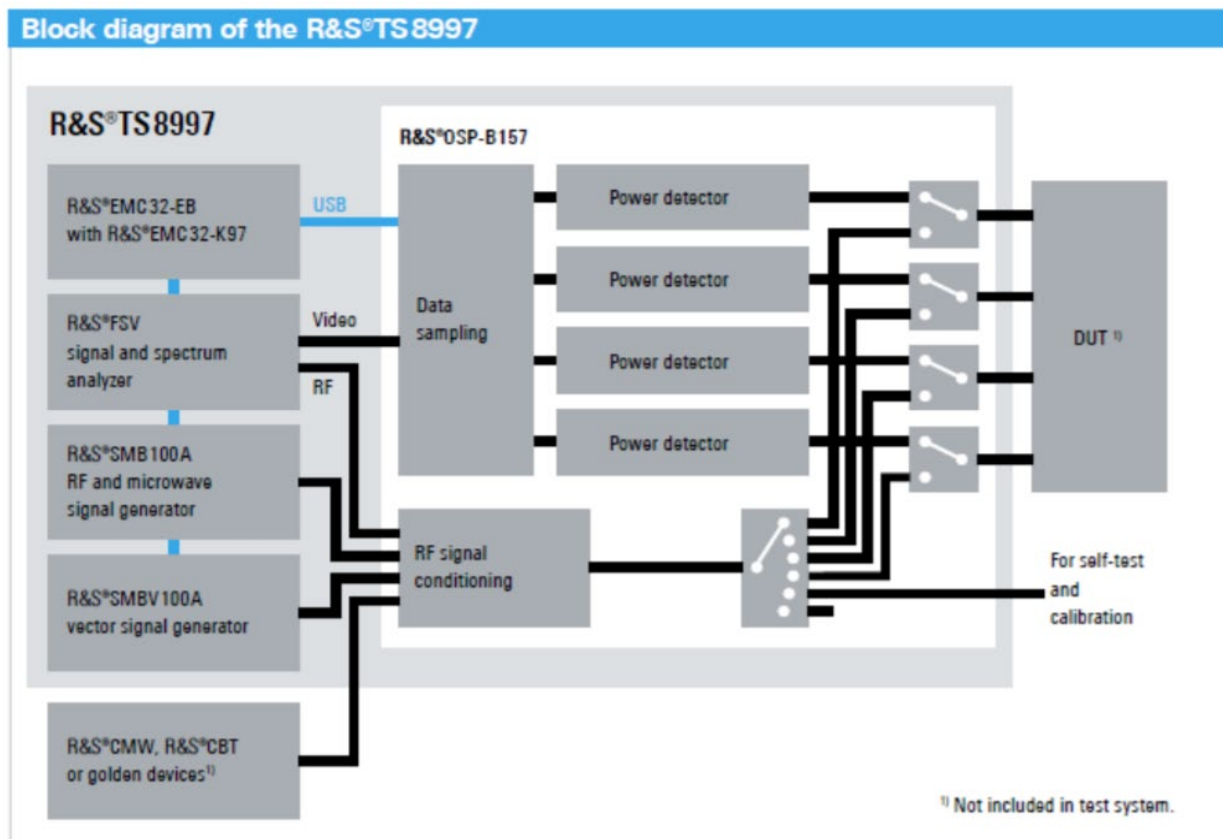


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

There were no modifications made to the EUT during testing to comply with the specification.

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

There were no deviations, opinions, additional information or interpretations from the test specification.

3 Test Specification, Method and Procedures

3.1 Test Specification

Title	47 CFR FCC Part 15, Subpart E, Section 15.407 Limits and methods of measurement of radio interference characteristics of Unlicensed National Information Infrastructure Devices
Purpose of Test	The tests were performed to demonstrate initial compliance

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.407

See test standard for details.

3.3 FCC Part 15, Subpart E

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.407(a)	N/A	Antenna requirements	Structural Requirement	Compliant
15.407(b)	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(c)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	5725 to 5850	Compliant
15.407(e)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5725 to 5850	Compliant
15.407(f)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.407(g)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(h)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5725 to 5850	Compliant

The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements.

3.4 Results

In the configuration tested, the EUT complied with the requirements of the specification.

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 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 2023. 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 2023.

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

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

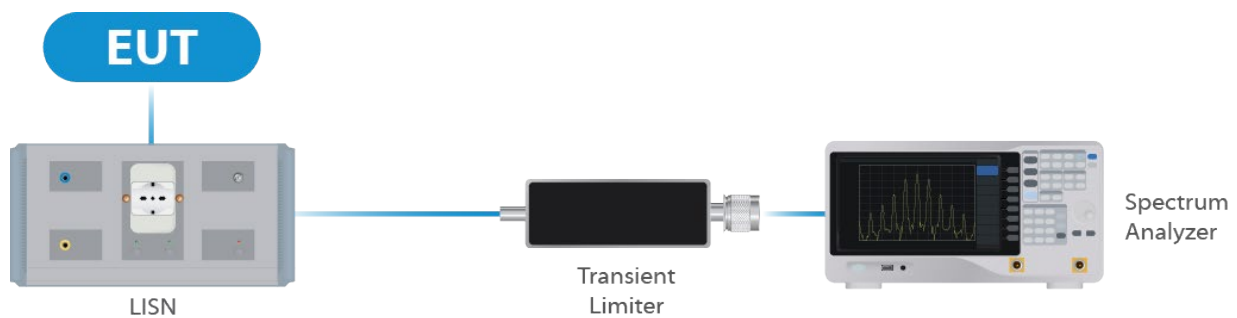


Figure 1: Conducted Emissions Test

4.2 Direct Connect at the Antenna Port Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	R&S	FSV40	UCL-2861	11/7/2022	11/7/2023
Signal Generator	R&S	SMB100A	UCL-2864	N/A	N/A
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Switch Extension	R&S	OSP-B157WX	UCL-2867	2/22/2023	2/22/2024
Switch Extension	R&S	OSP-150W	UCL-2870	2/22/2023	2/22/2024

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

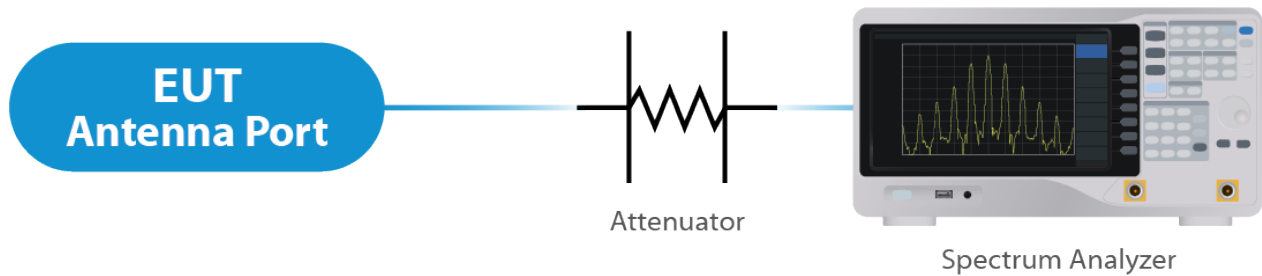


Figure 2: Direct Connect at the Antenna Port Test



Figure 3: Output Power Measurement

4.3 Radiated Emissions

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	Keysight	N9038A	UCL-2778	1/27/2023	1/27/2024
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	10/7/2021	10/7/2023
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3062	2/22/2023	2/22/2025
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3071	1/11/2023	1/11/2025
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	9/22/2022	9/22/2024
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	1/27/2023	1/27/2025
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	6/09/2022	6/09/2024
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	12/9/2022	12/9/2023
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

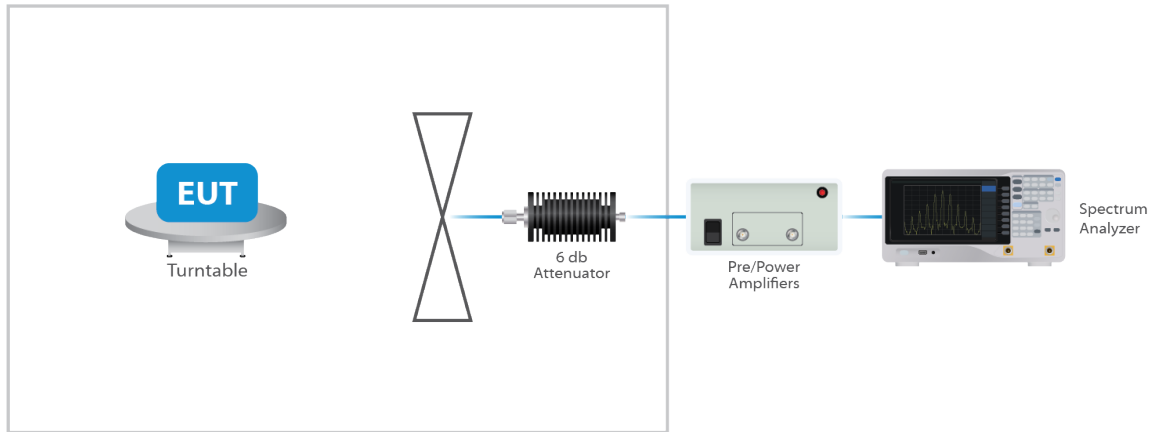


Figure 4: Radiated Emissions Test

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 (\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 integral antenna. Per the manufacturer, the Maximum gain of the antenna is 4.5 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;

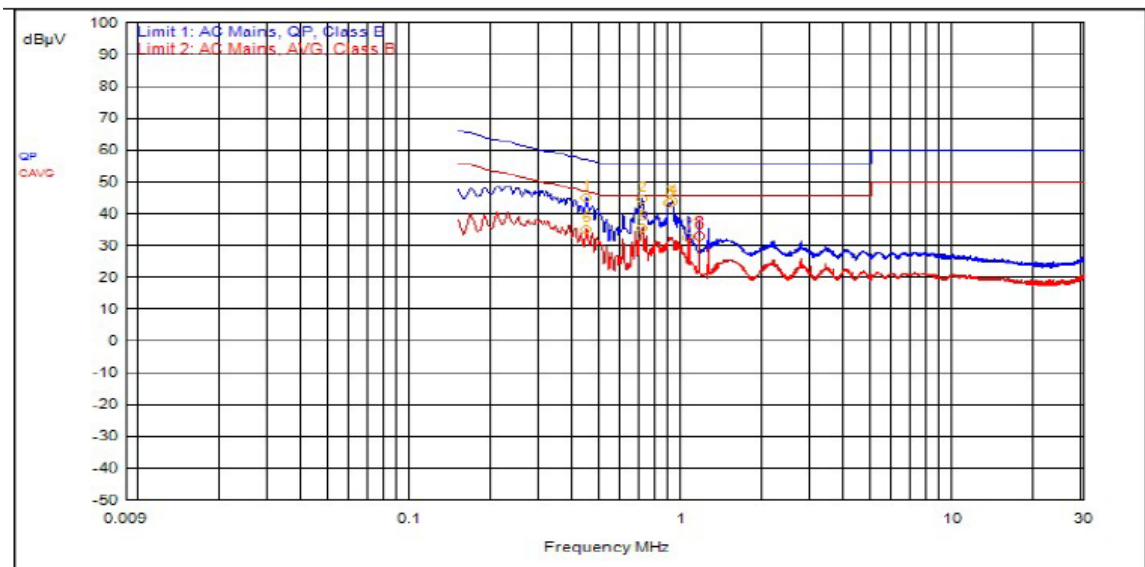
For PSD measurements when Nss=1: Array Gain = $10 \log(N_{ant}/N_{ss})$ dB = 3.01dB; Direction gain = Ant Gain + Array Gain or 7.51dB (4.5 dBi + 3.01 dB)

Results

The EUT complied with the specification

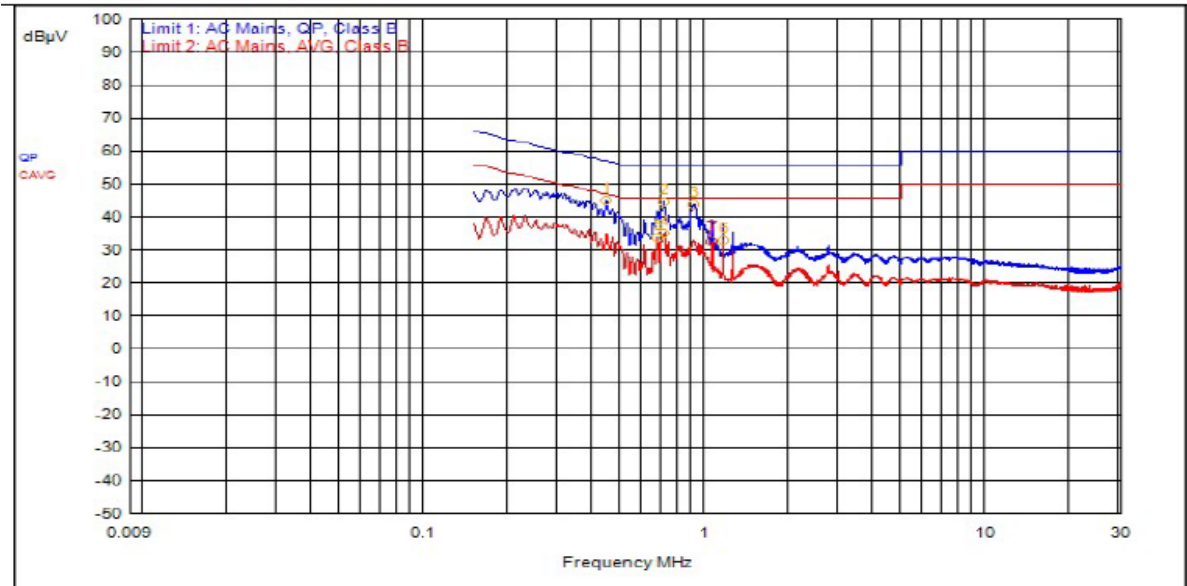
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	708,000kHz	12.4	0.0		QPeak	32.0	44.4	56.0	-11.6		
1	444,000kHz	12.4	0.0		QPeak	32.7	45.1	57.0	-11.9		
4	921,000kHz	12.4	0.1		QPeak	31.1	43.6	56.0	-12.4		
3	891,000kHz	12.4	0.1		QPeak	30.9	43.4	56.0	-12.6		
5	444,000kHz	12.4	0.0		C_AVG	22.8	35.2			47.0	-11.8
6	711,000kHz	12.4	0.0		C_AVG	22.9	35.3			46.0	-10.7
7	1.056MHz	12.4	0.1		C_AVG	20.2	32.7			46.0	-13.3
8	1.152MHz	12.4	0.1		C_AVG	20.3	32.8			46.0	-13.2

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	708,000kHz	12.4	0.0		QPeak	32.3	44.7	56.0	-11.3		
1	444,000kHz	12.4	0.0		QPeak	32.6	45.0	57.0	-12.0		
3	909,000kHz	12.4	0.1		QPeak	31.1	43.7	56.0	-12.3		
4	708,000kHz	12.4	0.0		C_AVG	22.8	35.2			46.0	-10.8
5	672,000kHz	12.4	0.0		C_AVG	21.3	33.8			46.0	-12.2
6	1.152MHz	12.4	0.1		C_AVG	20.3	32.8			46.0	-13.2
7	1.056MHz	12.4	0.1		C_AVG	20.1	32.6			46.0	-13.4

Result

The EUT complied with the specification limit.

5.3 §15.403(i) 26 dB Emissions Bandwidth

All chains were measured under the guidance of KDB 789033 Section II.C. and KDB 66291 D01. Please see associated annex for details on instrument settings.

Modulation (BW)	Frequency (MHz)	Data Rate	99%	26dB
OFDM / A 20	5745	Mcs0	25.3	37.0
OFDM / A	5775	Mcs0	25.5	38.3
OFDM / A	5825	Mcs0	30.0	39.9
HT / N 20	5745	Mcs0	24.0	34.8
HT / N 20	5775	Mcs0	23.9	38.4
HT / N 20	5825	Mcs0	28.8	40.0
HT / N 20	5755	Mcs0	48.8	76.4
HT / N 20	5775	Mcs0	50.0	79.6
HT / N 20	5795	Mcs0	51.0	79.2
VHT / AC 20	5745	Mcs0	23.4	38.7
VHT / AC 20	5775	Mcs0	24.2	39.2
VHT / AC 20	5825	Mcs0	23.5	38.1
VHT / AC 40	5755	Mcs0	48.4	79.9
VHT / AC 40	5775	Mcs0	49.0	78.7
VHT / AC 40	5795	Mcs0	52.8	78.4
VHT / AC 80	5775	Mcs0	75.5	85.5
HE / AX 20	5745	Mcs0	23.5	38.6
HE / AX 20	5775	Mcs0	24.2	39.7
HE / AX 20	5825	Mcs0	23.2	39.3
HE / AX 40	5755	Mcs0	43.3	77.8
HE / AX 40	5775	Mcs0	44.8	78.1
HE / AX 40	5795	Mcs0	46.0	79.9
HE / AX 80	5775	Mcs0	77.5	97.5

Result

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

The 26 dB bandwidths are reported for information purposes. 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 66291 D01. Please see associated annex for details on instrument settings.

The maximum average RF conducted output power measured for this device was 25.75 dBm or 375.8 mW. The limit is 30 dBm, or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 4.5 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP	Measured PSD
OFDM 20	5745	Mcs0	48	25.68	30.18	11.68
OFDM 20	5775	Mcs0	48	25.40	29.90	11.43
OFDM 20	5825	Mcs0	48	25.75	30.25	11.42
HT 20	5745	Mcs0	48	25.51	30.01	10.99
HT 20	5775	Mcs0	48	25.21	29.71	10.76
HT 20	5825	Mcs0	47	25.20	29.70	10.34
HT 40	5755	Mcs0	47	25.59	30.09	8.25
HT 40	5775	Mcs0	47	25.33	29.83	7.91
HT 40	5795	Mcs0	47	25.40	29.90	8.26
VHT 20	5745	Mcs0	48	25.42	29.92	10.91
VHT 20	5775	Mcs0	48	25.19	29.69	10.70
VHT 20	5825	Mcs0	46	24.62	29.12	9.77
VHT 40	5755	Mcs0	47	25.53	30.03	8.30
VHT 40	5775	Mcs0	47	25.29	29.79	7.86
VHT 40	5795	Mcs0	47	25.40	29.90	8.24
VHT 80	5775	Mcs0	44	23.48	27.98	3.56
HE 20	5745	Mcs0	48	25.43	29.93	10.64
HE 20	5775	Mcs0	48	25.13	29.63	10.43
HE 20	5825	Mcs0	46	24.60	29.10	9.59
HE 40	5755	Mcs0	47	25.41	29.91	8.09
HE 40	5775	Mcs0	47	25.17	29.67	7.69
HE 40	5795	Mcs0	47	25.29	29.79	7.96
HE 80	5775	Mcs0	45	23.90	28.40	4.05

Result

In the configuration tested, the maximum summed average RF output power was less than 1 watt; 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

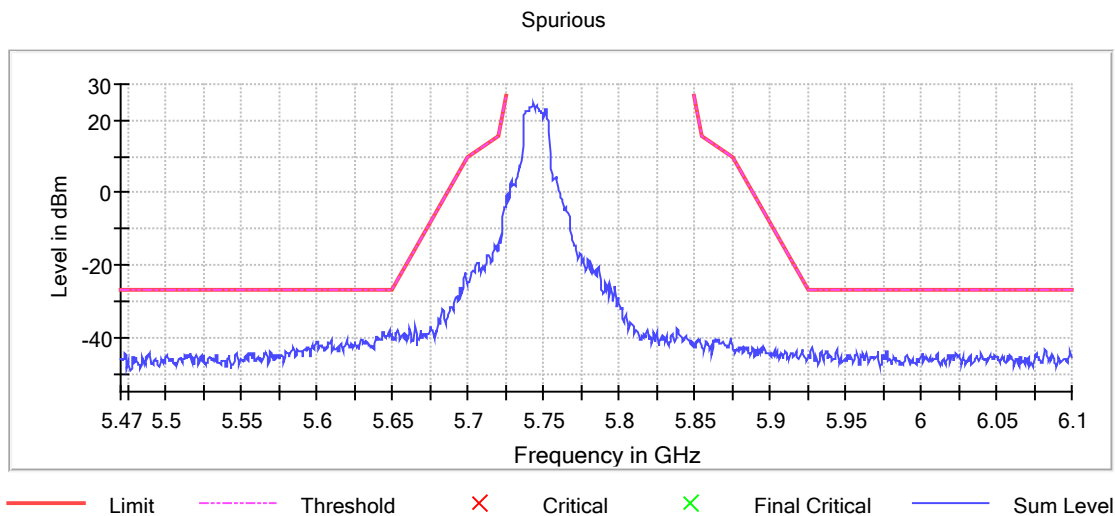
5.5.1 Conducted Spurious Emissions

The frequency ranges from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental frequency was investigated to measure any antenna-conducted emissions. The graphs show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown within the annex below are plots with the EUT turned to the upper and lower channels with the antenna gain of 4.5 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

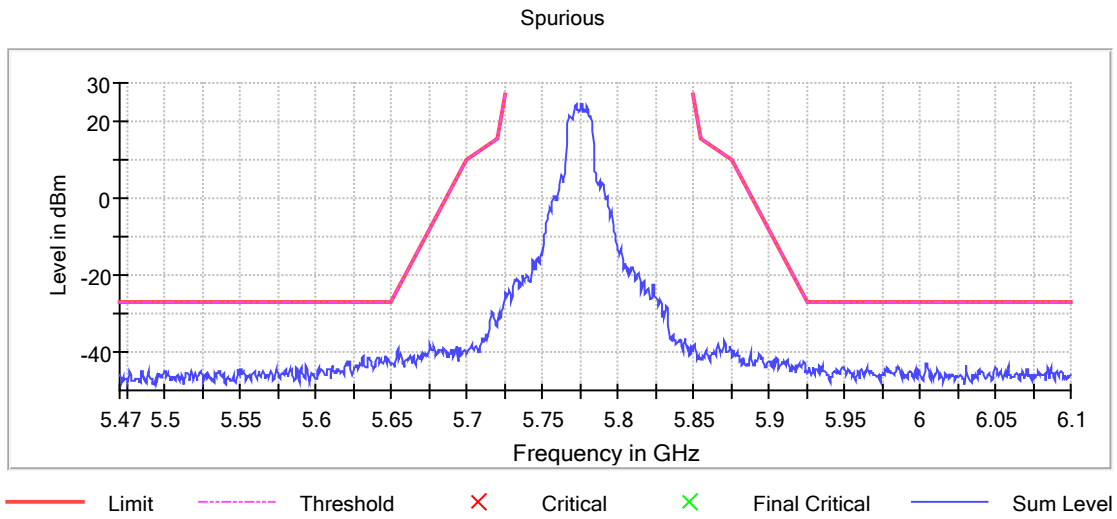
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Result

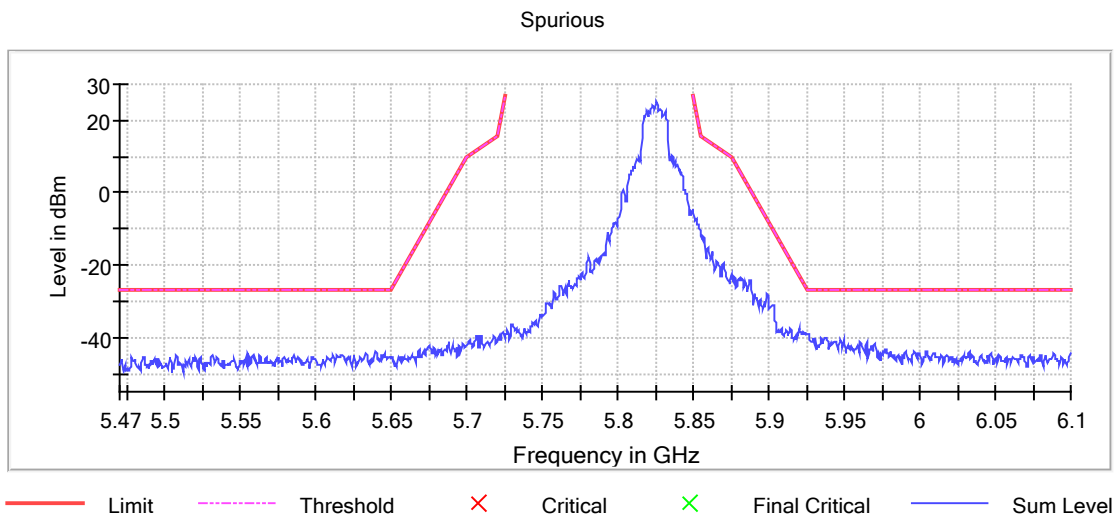
Conducted spurious emissions were attenuated below the limit; therefore, the EUT complies with the specification.



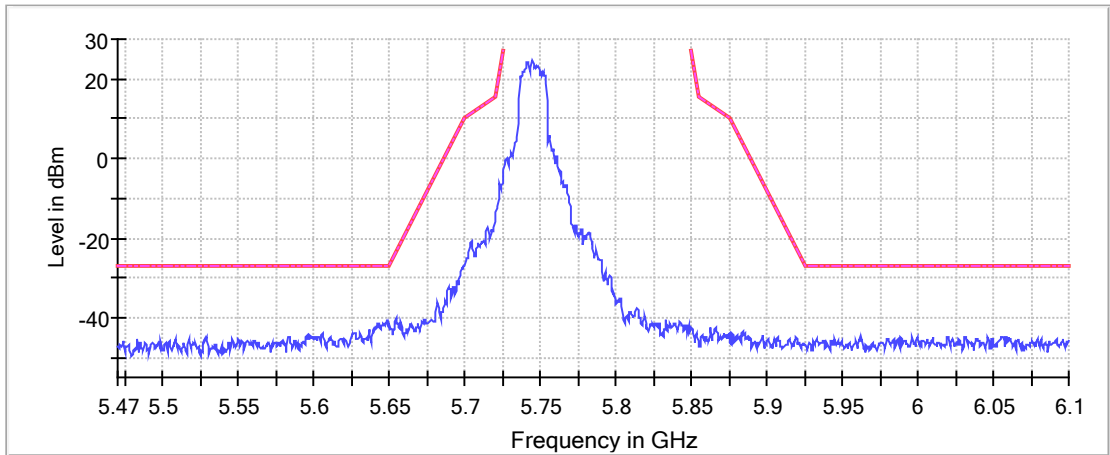
Graph 1: 20 MHz A Mode Low



Graph 2: 20 MHz A Mode Mid

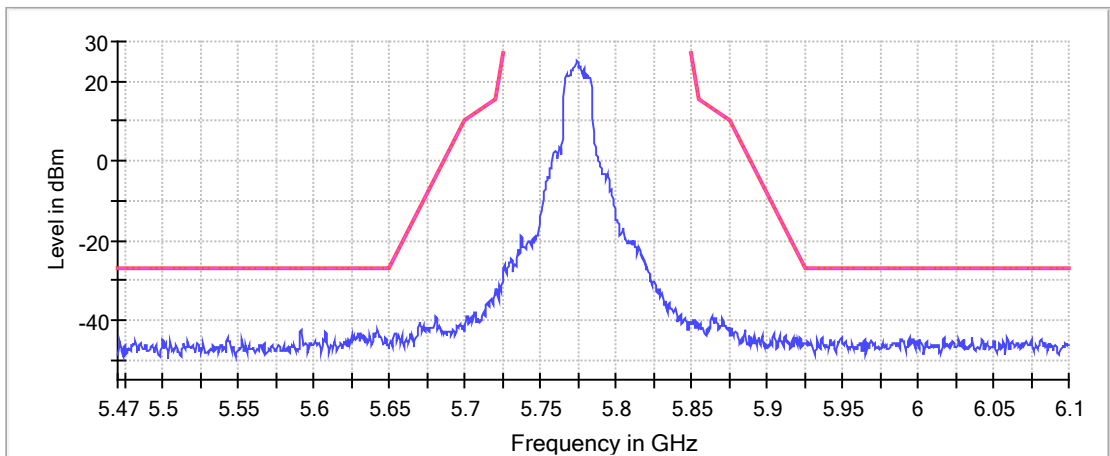


Graph 3: 20 MHz A Mode High



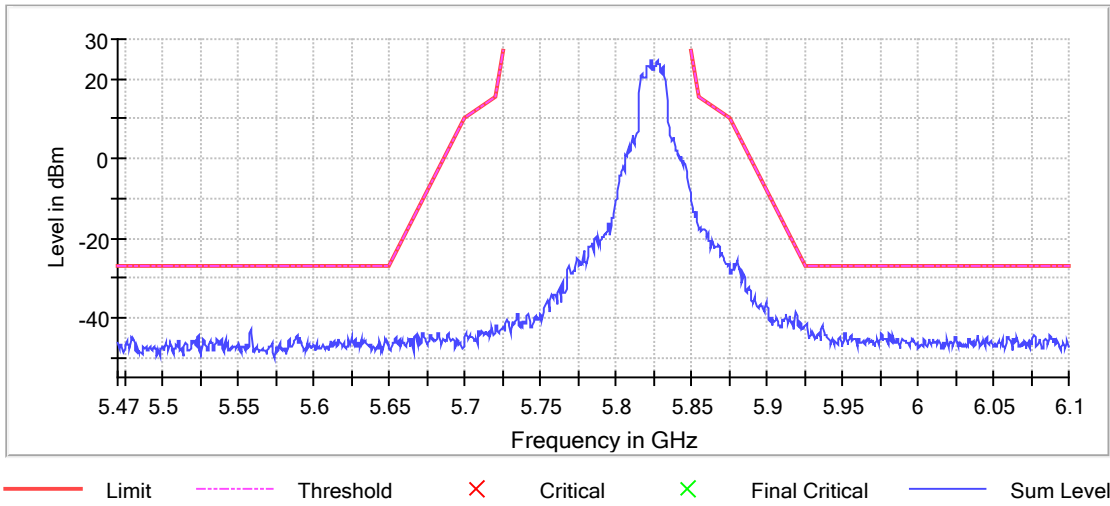
— Limit - - - - Threshold × Critical × Final Critical — Sum Level

Graph 4: 20 MHz N Mode Low

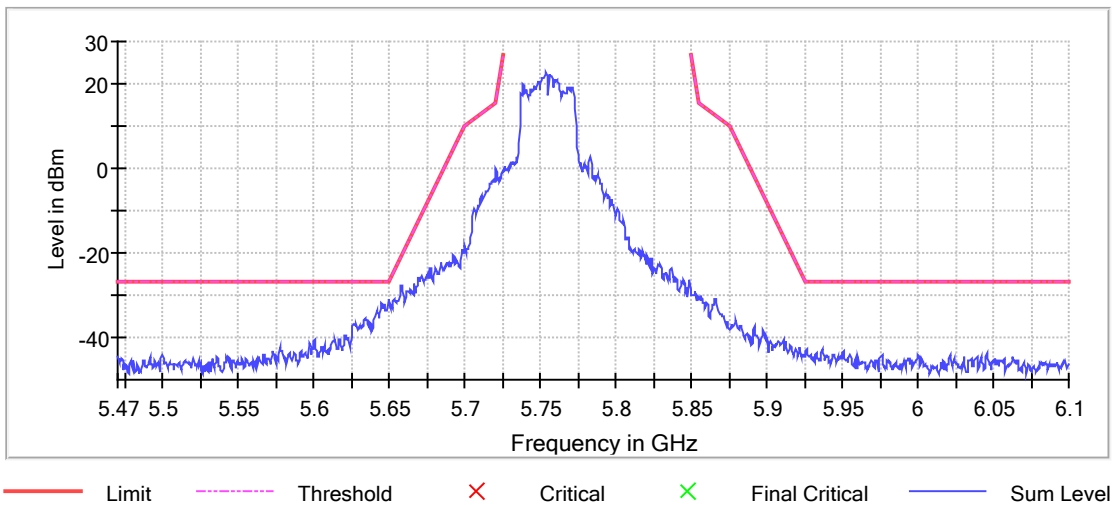


— Limit - - - - Threshold × Critical × Final Critical — Sum Level

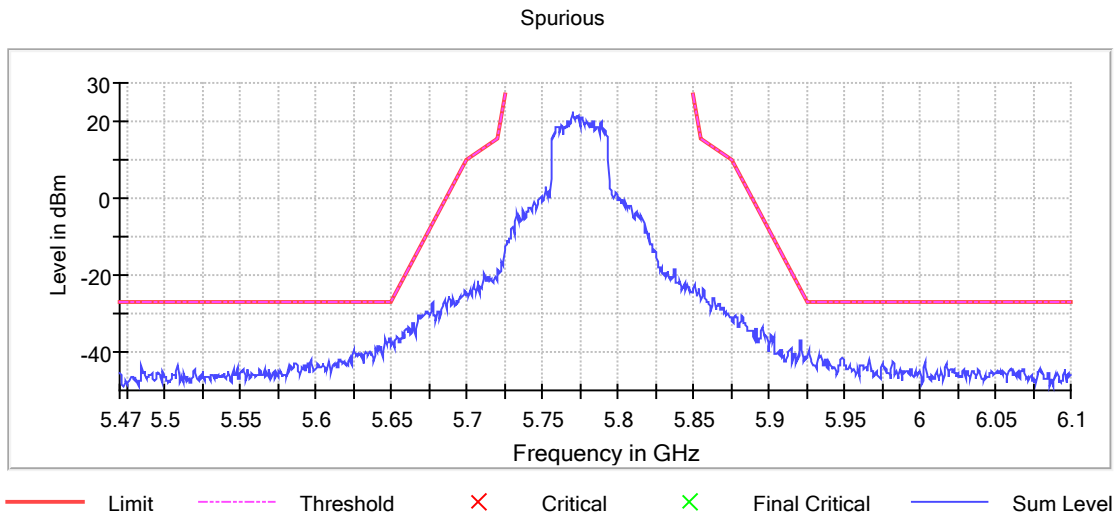
Graph 5: 20 MHz N Mode Mid



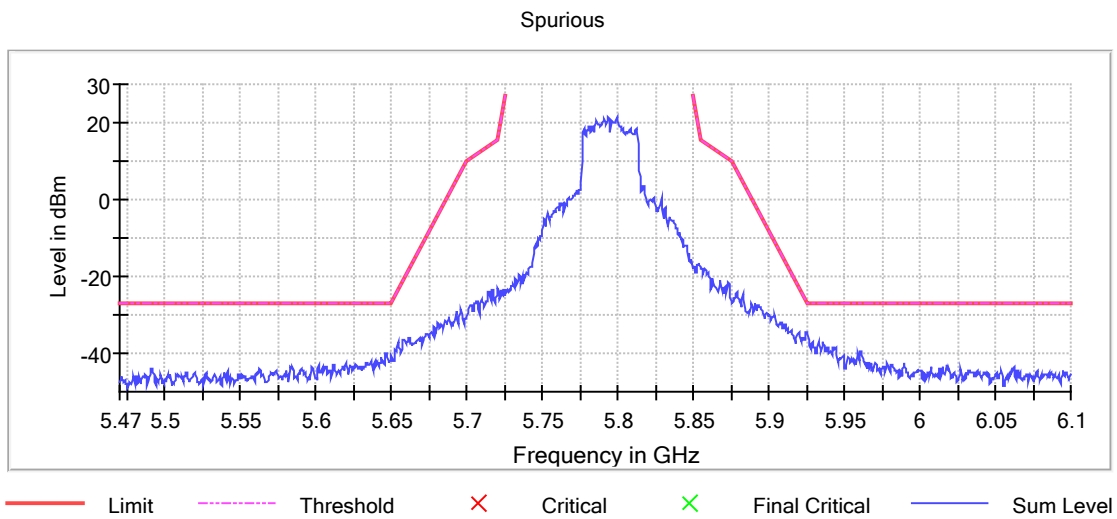
Graph 6: 20 MHz N Mode High



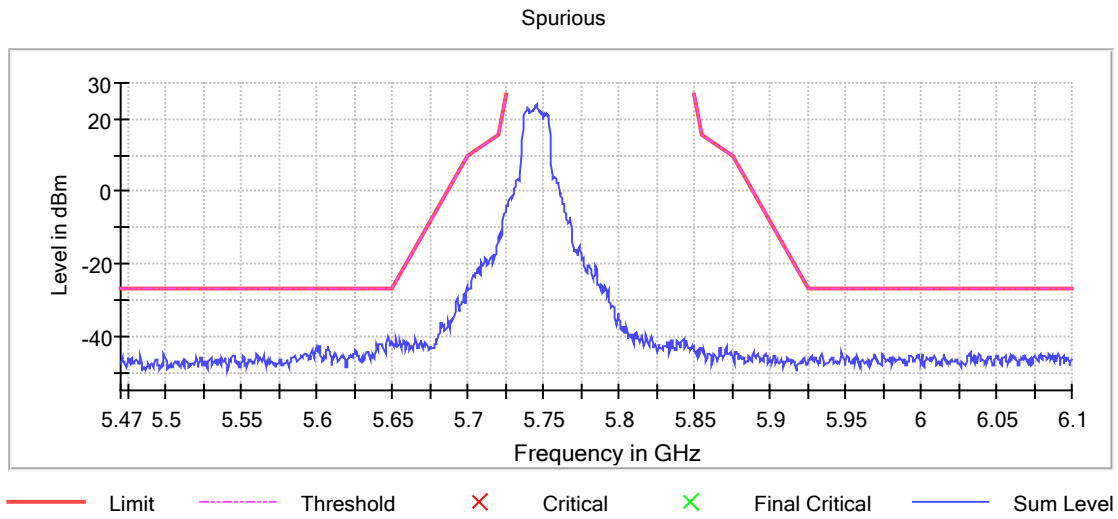
Graph 7: 40 MHz N Mode Low



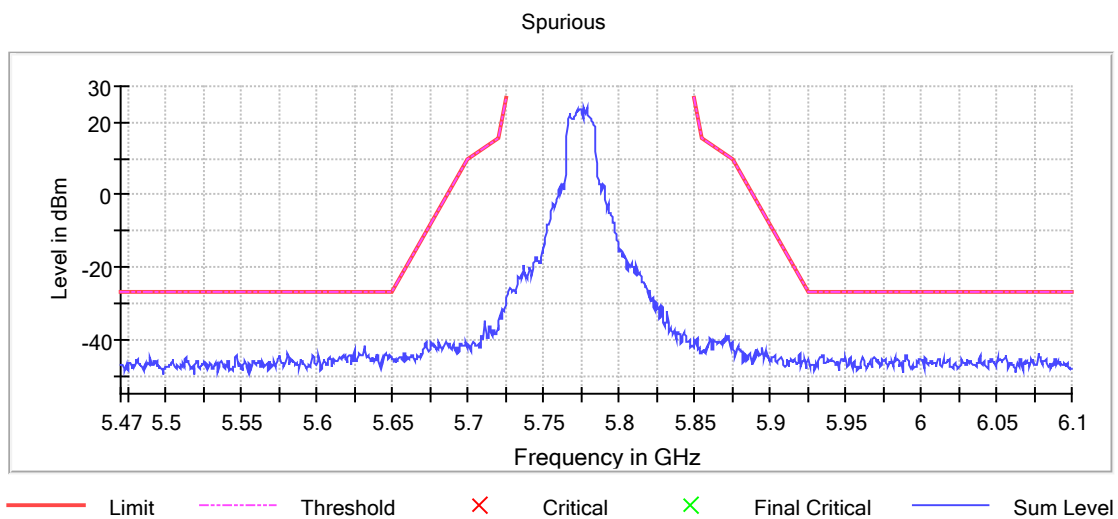
Graph 8: 40 MHz N Mode Mid



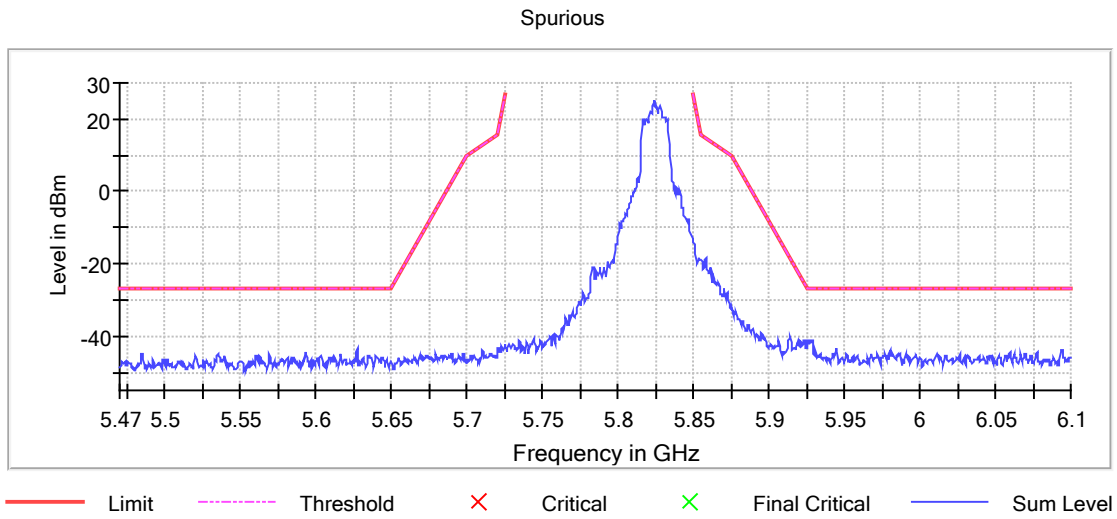
Graph 9: 40 MHz N Mode High



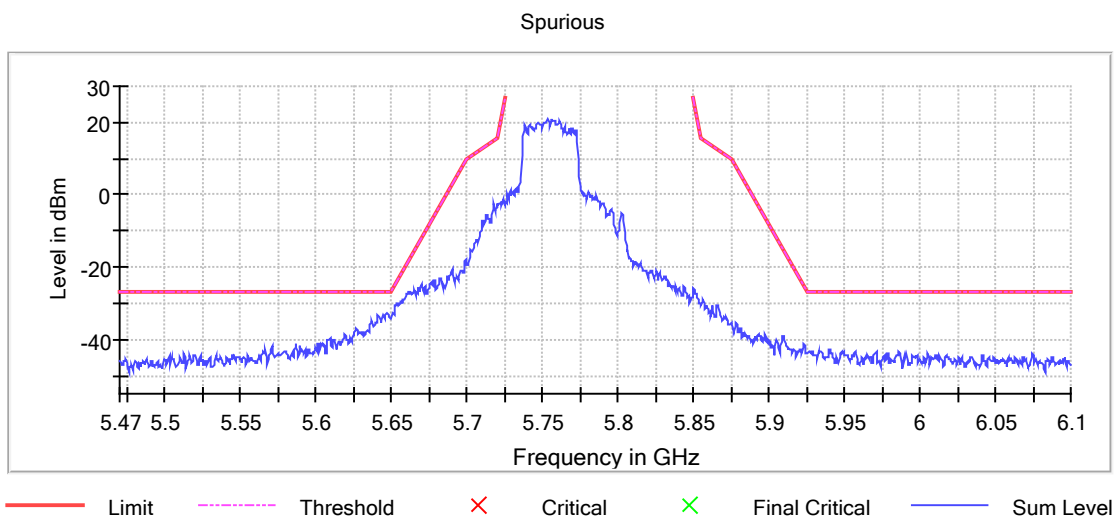
Graph 10: 20 MHz AC Mode Low



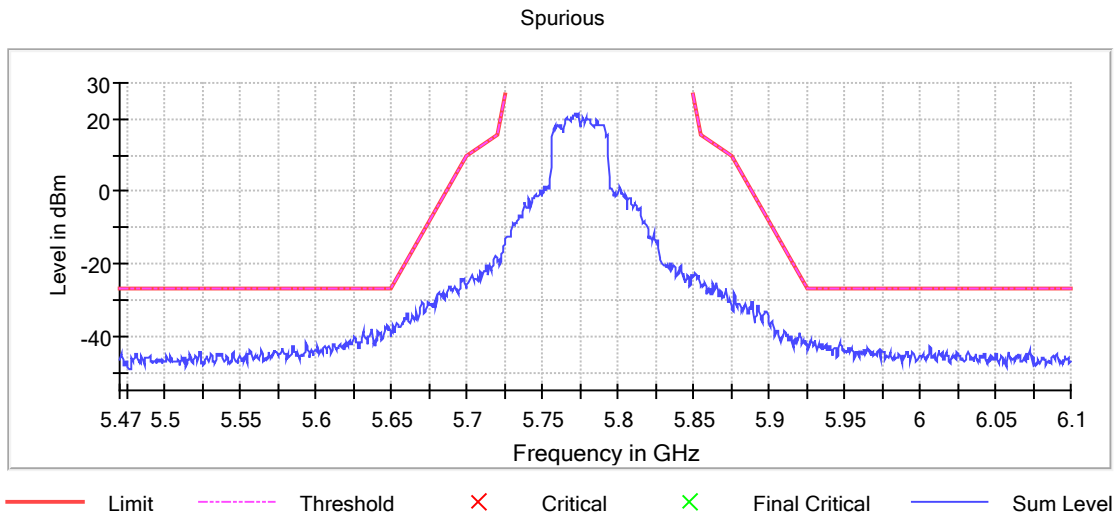
Graph 11: 20 MHz AC Mode Mid



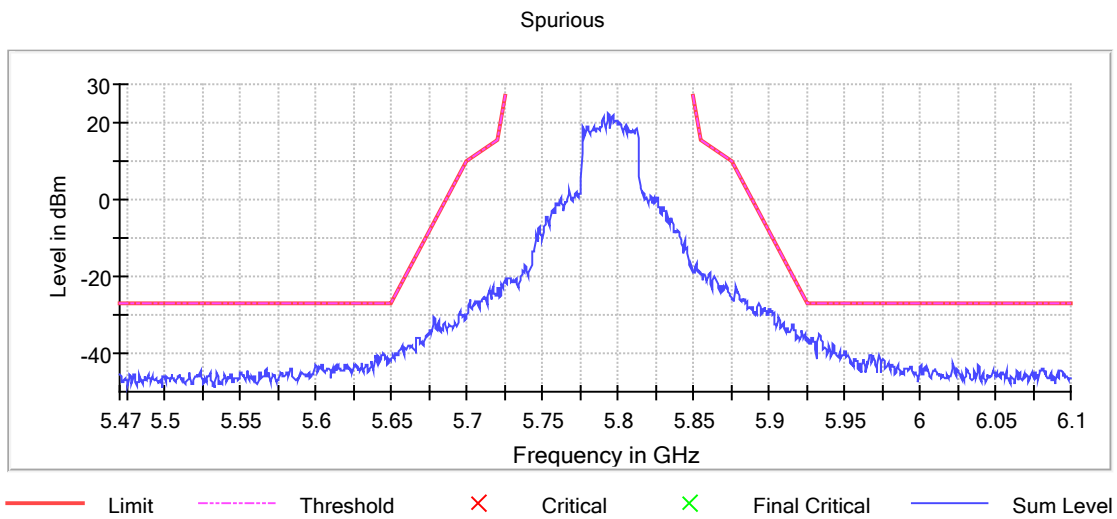
Graph 12: 20 MHz AC Mode High



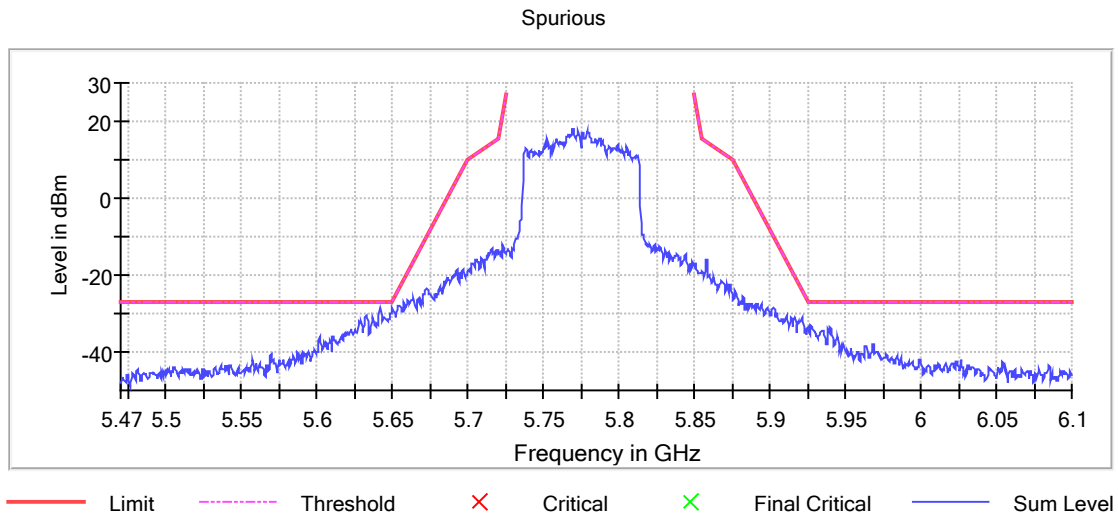
Graph 13: 40 MHz AC Mode Low



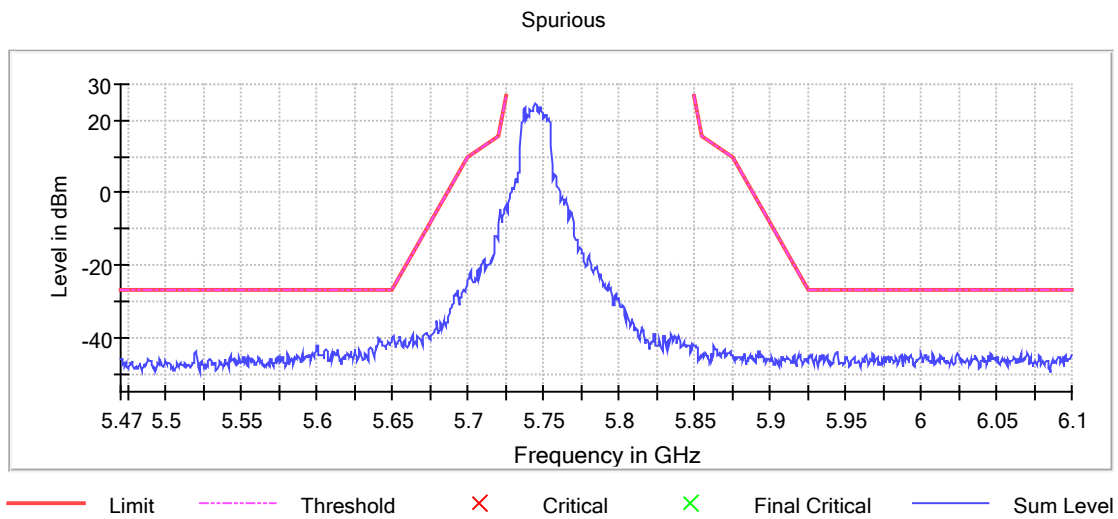
Graph 14: 40 MHz AC Mode Mid



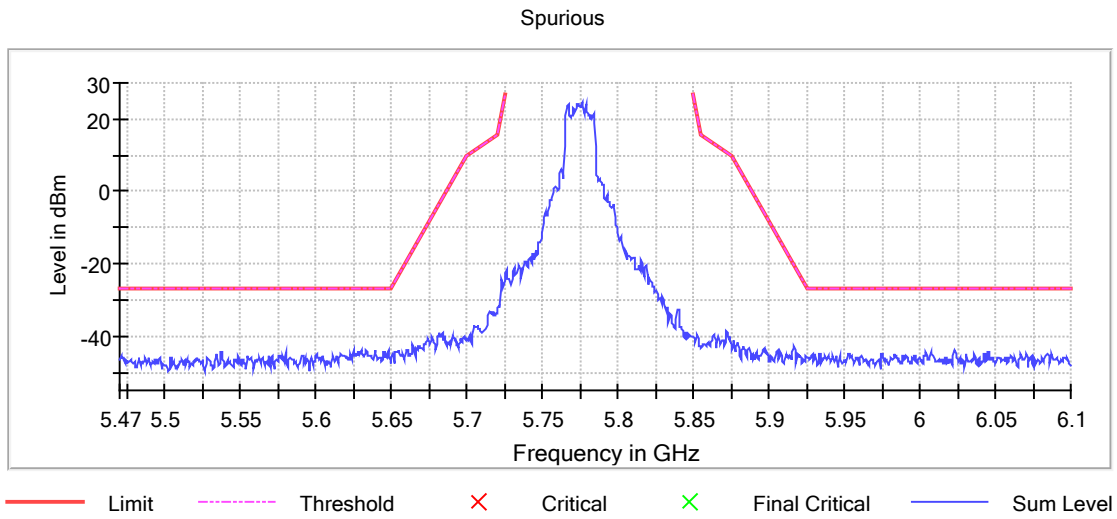
Graph 15: 40 MHz AC Mode High



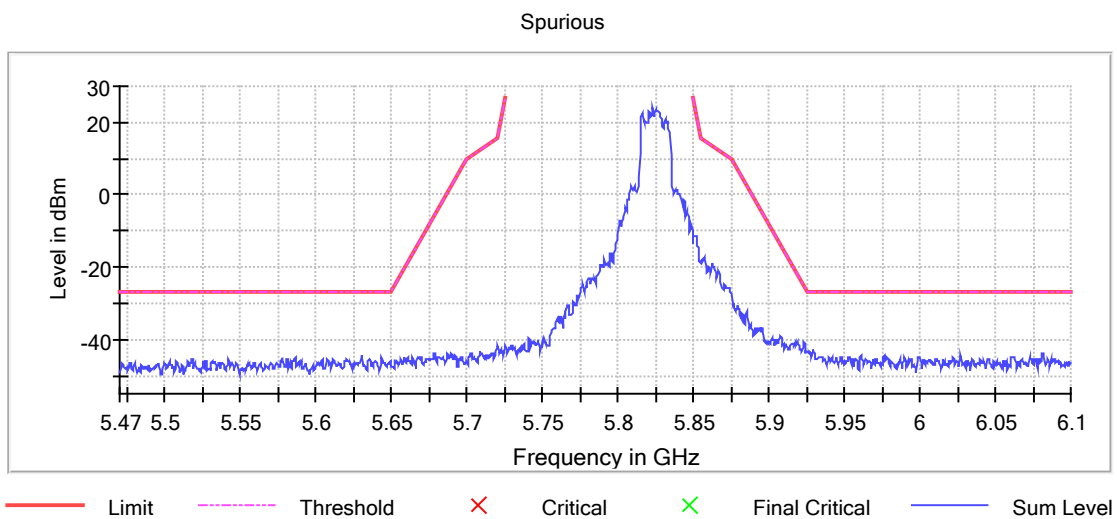
Graph 16: 80 MHz AC Mode



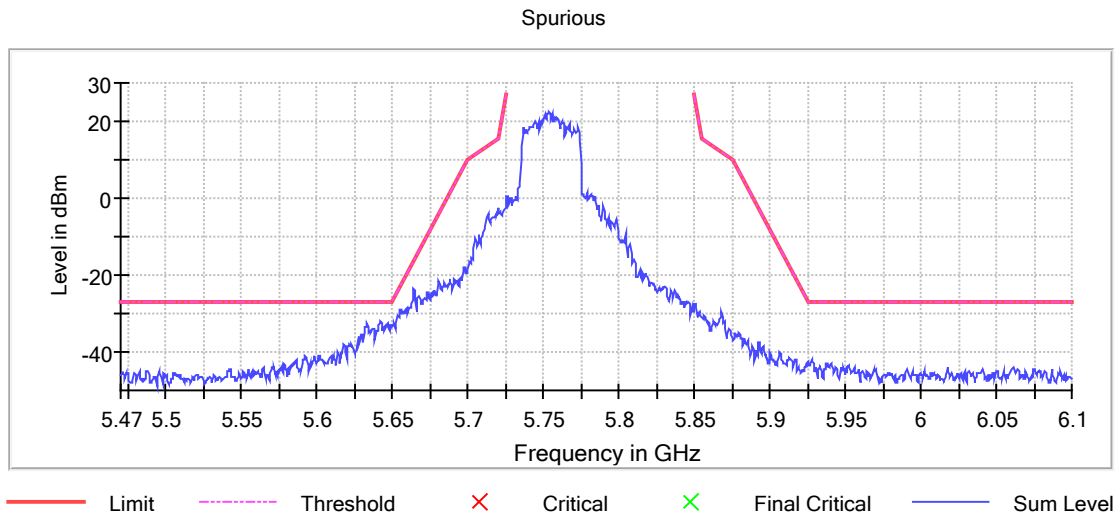
Graph 17: 20 MHz AX Mode Low



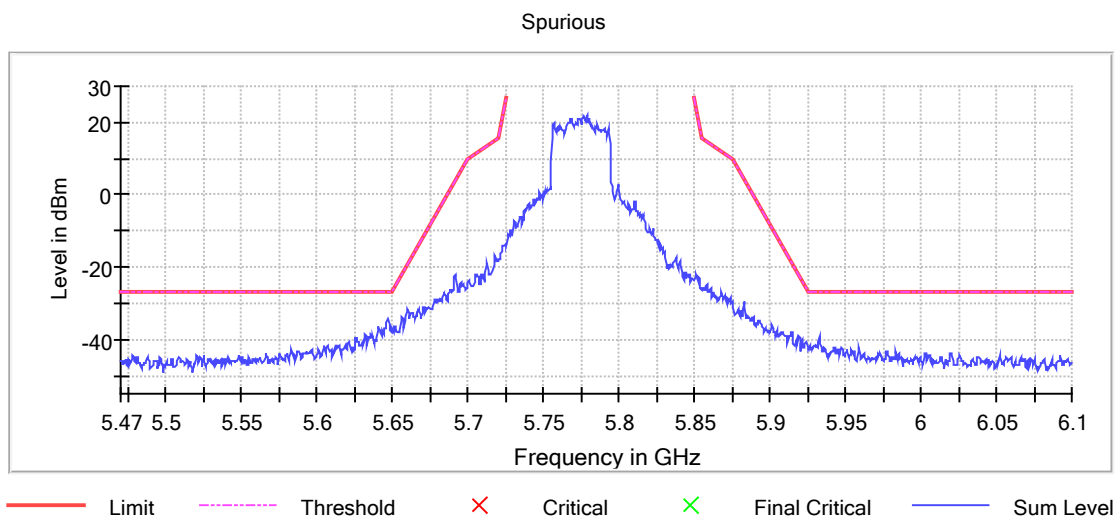
Graph 18: 20 MHz AX Mode Mid



Graph 19: 20 MHz AX Mode High

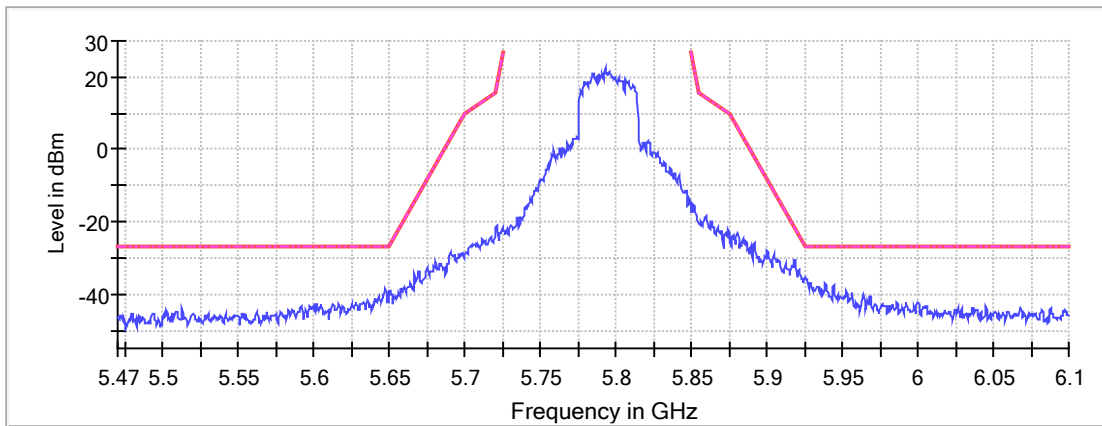


Graph 20: 40 MHz AX Mode Low



Graph 21: 40 MHz AX Mode Mid

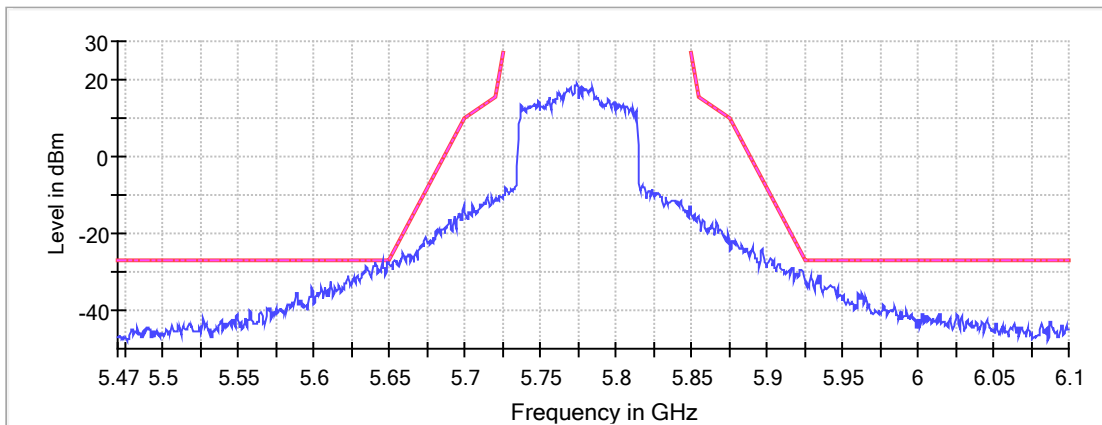
Spurious



— Limit - - - - Threshold × Critical × Final Critical — Sum Level

Graph 22: 40 MHz AX Mode High

Spurious



— Limit - - - - Threshold × Critical × Final Critical — Sum Level

Graph 23: 80 MHz AX Mode

5.5.2 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 TP48.

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

Result

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

Frequency	Detector	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
11.491 GHz	PK	59.519	74	-14.481	207	3.311	Vertical	1 MHz	2.617
11.491 GHz	AV	44.351	54	-9.649	207	3.311	Vertical	1 MHz	2.617
11.484 GHz	PK	57.578	74	-16.422	321	3.798	Horizontal	1 MHz	2.826
11.484 GHz	AV	44.65	54	-9.35	321	3.798	Horizontal	1 MHz	2.826
17.235 GHz	PK	60.777	74	-13.223	50	1.5	Vertical	1 MHz	-2.31
22.972 GHz	PK	60.438	74	-13.562	116	1.5	Vertical	1 MHz	-1.214
28.713 GHz	PK	51.142	74	-22.858	188	1.5	Vertical	1 MHz	0.699
17.235 GHz	AV	46.021	54	-7.979	50	1.5	Vertical	1 MHz	-2.31
22.972 GHz	AV	44.867	54	-9.133	116	1.5	Vertical	1 MHz	-1.214
28.713 GHz	AV	36.985	54	-17.015	188	1.5	Vertical	1 MHz	0.699

Table 4: Transmitting on the Lowest Frequency 5745 MHz

Frequency	Detector	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
11.545 GHz	PK	57.698	74	-16.302	212	3.311	Vertical	1 MHz	2.342
11.545 GHz	AV	43.432	54	-10.568	212	3.311	Vertical	1 MHz	2.342
11.549 GHz	PK	56.861	74	-17.139	331	3.802	Horizontal	1 MHz	2.366
11.549 GHz	AV	43.328	54	-10.672	331	3.802	Horizontal	1 MHz	2.366
17.324 GHz	PK	59.029	74	-14.971	44	1.5	Vertical	1 MHz	-2.2
23.109 GHz	PK	57.943	74	-16.057	42	1.5	Vertical	1 MHz	-0.441
28.883 GHz	PK	56.812	74	-17.188	75	1.5	Vertical	1 MHz	-0.097
17.324 GHz	AV	45.203	54	-8.797	44	1.5	Vertical	1 MHz	-2.2
23.109 GHz	AV	43.148	54	-10.852	42	1.5	Vertical	1 MHz	-0.441
28.883 GHz	AV	42.542	54	-11.458	75	1.5	Vertical	1 MHz	-0.097
17.326 GHz	PK	62.567	74	-11.433	49	1.5	Horizontal	1 MHz	-2.21
23.103 GHz	PK	64.363	74	-9.637	57	1.5	Horizontal	1 MHz	-0.48
28.877 GHz	PK	60.638	74	-13.362	77	1.5	Horizontal	1 MHz	-0.166
17.326 GHz	AV	47.777	54	-6.223	49	1.5	Horizontal	1 MHz	-2.21
23.103 GHz	AV	50.867	54	-3.133	57	1.5	Horizontal	1 MHz	-0.48
28.877 GHz	AV	47.347	54	-6.653	77	1.5	Horizontal	1 MHz	-0.166

Table 5: Transmitting on the Middle Frequency 5775 MHz

Frequency	Detector	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	RBW (Hz)	Correction (dB)
11.65 GHz	Pk	57.405	74	-16.595	220	3.307	Vertical	1 MHz	2.259
11.65 GHz	AV	43.769	54	-10.231	220	3.307	Vertical	1 MHz	2.259
17.472 GHz	Pk	61.131	74	-12.869	48	1.5	Vertical	1 MHz	-2.252
23.292 GHz	Pk	58.528	74	-15.472	52	1.5	Vertical	1 MHz	-0.893
17.472 GHz	AV	48.05	54	-5.95	48	1.5	Vertical	1 MHz	-2.252
23.292 GHz	AV	43.031	54	-10.969	52	1.5	Vertical	1 MHz	-0.893
17.478 GHz	Pk	62.332	74	-11.668	197	1.5	Horizontal	1 MHz	-2.312
23.298 GHz	Pk	64.436	74	-9.564	52	1.5	Horizontal	1 MHz	-0.822
29.117 GHz	Pk	60.47	74	-13.53	75	1.5	Horizontal	1 MHz	-0.168
17.478 GHz	AV	47.819	54	-6.181	197	1.5	Horizontal	1 MHz	-2.312
23.298 GHz	AV	50.361	54	-3.639	52	1.5	Horizontal	1 MHz	-0.822
29.117 GHz	AV	45.493	54	-8.507	75	1.5	Horizontal	1 MHz	-0.168

Table 6: Transmitting on the Highest Frequency 5825 MHz

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 66291 D01. Please see associated annex for details on instrument settings.

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 30 dBm in any 500 kHz band during any time interval of continuous transmission. Results of this testing are summarized.

As per KDB 662911, When the EUT is using spatial-multiplexing in HE modes, there is not additional array gain to accommodate. When the EUT uses Nss=1 data rates, the antenna gain is 4.5 dBi + Array gain of 3.01 dB which is a total of 7.51 dBi

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP	Measured PSD
OFDM 20	5745	Mcs0	48	25.68	30.18	11.68
OFDM 20	5775	Mcs0	48	25.40	29.90	11.43
OFDM 20	5825	Mcs0	48	25.75	30.25	11.42
HT 20	5745	Mcs0	48	25.51	30.01	10.99
HT 20	5775	Mcs0	48	25.21	29.71	10.76
HT 20	5825	Mcs0	47	25.20	29.70	10.34
HT 40	5755	Mcs0	47	25.59	30.09	8.25
HT 40	5775	Mcs0	47	25.33	29.83	7.91
HT 40	5795	Mcs0	47	25.40	29.90	8.26
VHT 20	5745	Mcs0	48	25.42	29.92	10.91
VHT 20	5775	Mcs0	48	25.19	29.69	10.70
VHT 20	5825	Mcs0	46	24.62	29.12	9.77
VHT 40	5755	Mcs0	47	25.53	30.03	8.30
VHT 40	5775	Mcs0	47	25.29	29.79	7.86
VHT 40	5795	Mcs0	47	25.40	29.90	8.24
VHT 80	5775	Mcs0	44	23.48	27.98	3.56
HE 20	5745	Mcs0	48	25.43	29.93	10.64
HE 20	5775	Mcs0	48	25.13	29.63	10.43
HE 20	5825	Mcs0	46	24.60	29.10	9.59
HE 40	5755	Mcs0	47	25.41	29.91	8.09
HE 40	5775	Mcs0	47	25.17	29.67	7.69
HE 40	5795	Mcs0	47	25.29	29.79	7.96
HE 80	5775	Mcs0	45	23.90	28.40	4.05

Result

The maximum summed average power spectral density was less than the limit of 30 dBm; therefore, the EUT complies with the specification.

-- End of Test Report --