



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-U6EP
IC ID	6545A-U6EP
Equipment Under Test	U6-Enterprise
Test Report Serial Number	TR6136_04
Date of Test(s)	18 – 25 May 2021
Report Issue Date	9 June 2021

Test Specification	Applicant
47 CFR FCC Part 15, Subpart C	Ubiquiti Inc. 685 Third Avenue New York, NY 10019 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 C. This report may be reproduced in full. Partial reproduction of this report may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	UniFi
Model Number	U6-Enterprise
FCC ID	SWX-U6EP
IC ID	6545A-U6EP

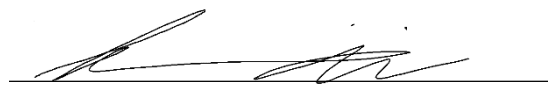
On this 9th day of June 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

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

Unified Compliance Laboratory



Written By: Joseph W. Jackson



Reviewed By: Alex Macon

Revision History		
Revision	Description	Date
01	Original Report Release	9 June 2021
02	Amended Sections 3.3.1 and 5.4	11 June 2021
03	Amended section 2.6	14 June 2021
04	Added information to section 5.1 Added detail to results section 5.3 Added array gain to section 5.6	18 August 2021

Table of Contents

1	Client Information.....	5
1.1	Applicant.....	5
1.2	Manufacturer.....	5
2	Equipment Under Test (EUT).....	6
2.1	Identification of EUT	6
2.2	Description of EUT	6
2.3	EUT and Support Equipment.....	6
2.4	Interface Ports on EUT	7
2.5	Operating Environment.....	7
2.6	Operating Modes.....	7
2.7	EUT Exercise Software.....	7
2.8	Block Diagram of Test Configuration	8
2.9	Modification Incorporated/Special Accessories on EUT.....	8
2.10	Deviation, Opinions Additional Information or Interpretations from Test Standard.....	8
3	Test Specification, Method and Procedures.....	9
3.1	Test Specification.....	9
3.2	Methods & Procedures.....	9
3.3	FCC Part 15, Subpart C	9
3.4	Results.....	10
3.5	Test Location	10
4	Test Equipment	11
4.1	Conducted Emissions at Mains Ports.....	11
4.2	Direct Connect at the Antenna Port Tests.....	11
4.3	Radiated Emissions.....	12
4.4	Equipment Calibration	13
4.5	Measurement Uncertainty.....	13
5	Test Results.....	14
5.1	§15.203 Antenna Requirements.....	14
5.2	Conducted Emissions at Mains Ports Data	14
5.3	§15.247(a)(2) Emissions Bandwidth.....	16
5.4	§15.247(b)(3) Maximum Average Output Power.....	17
5.5	§15.247(d) Spurious Emissions	19
5.6	§15.247(e) Maximum Average Power Spectral Density	33

1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UniFi
Model Number	U6-Enterprise
Serial Number	68D79A1F0D5A
Dimensions (cm)	22.0 x 22.0 x 4.8

2.2 Description of EUT

The U6-Enterprise is a four-stream WiFi 6 access point that provides up to 2.4 Gbps aggregate radio rate with 2.4 GHz (2x2), 5 GHz (4x4) and 6 GHz (4x4) radios. The U6-Enterprise is designed for indoor use. The U6-Enterprise has an Ethernet port for data transfer and is powered by an 803.2at PoE power adapter. The U6-Enterprise has a Bluetooth management radio to achieve setup and operation.

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

2.3 EUT and Support Equipment

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

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: UniFi MN: U6-Enterprise SN: 68D79A1F0D5A	WiFi Access Point	See Section 2.4
BN: Ubiquiti MN: UPOE-at SN: N/A	PoE Power Adapter	Shielded or Un-Shielded Cat 5e cable (Note 2)
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal 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	1	Shielded or Un-Shielded Cat 5e Cable/> 3 meters
Data	1	Shielded or Un-Shielded Cat 5e Cable/> 3 Meters

2.5 Operating Environment

Power Supply	120 Volts ac to 48 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	21.9 – 23.9 °C
Humidity	25.9 – 29.8 %
Barometric Pressure	1019 mBar

2.6 Operating Modes

The U6-Enterprise was connected to a personal computer laptop and tested using test software in order to enable a constant duty cycle of the WiFi transceiver. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 b/g/n/ax were investigated. All measurements are reported with the worst-case mode (802.11ax) unless otherwise stated.

2.7 EUT Exercise Software

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

2.8 Block Diagram of Test Configuration

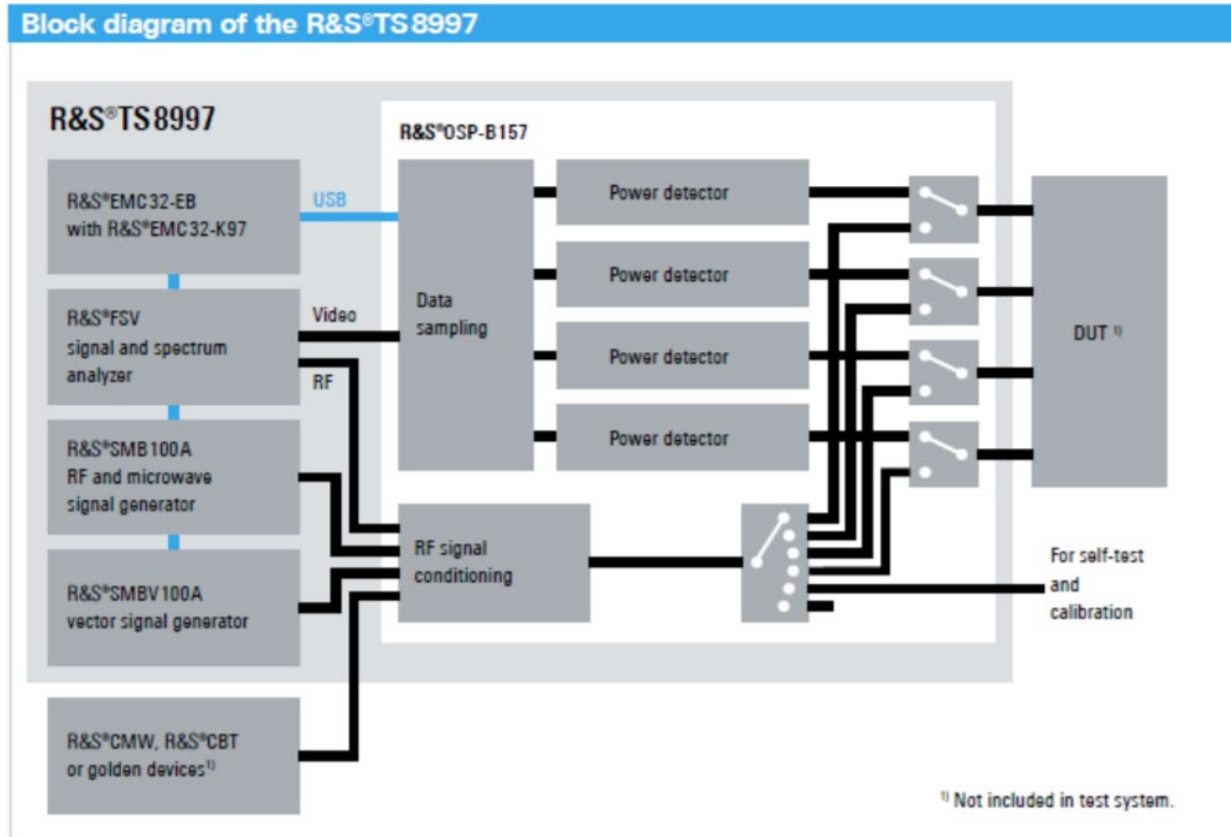


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

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

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

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

3 Test Specification, Method and Procedures

3.1 Test Specification

Title	47 CFR FCC Part 15, Subpart C 15.203, 15.207 and 15.247 Limits and methods of measurement of radio interference characteristics of radio frequency devices.
Purpose of Test	The tests were performed to demonstrate initial compliance

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.203

See test standard for details.

3.2.2 47 CFR FCC Part 15 Section 15.207

See test standard for details.

3.2.3 47 CFR FCC Part 15 Section 15.247

See test standard for details.

3.3 FCC Part 15, Subpart C

3.3.1 Summary of Tests

FCC Section	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.203	N/A	Antenna requirements	Structural Requirement	Compliant
15.207	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.247(a)	RSS-247 § 5.2	Bandwidth Requirement	2412 to 2462	Compliant
15.247(b)	RSS-247 § 5.4	Peak Output Power	2412 to 2462	Compliant
15.247(d)	RSS-247 § 5.4	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.247(d)	RSS-247 § 5.4	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.247(e)	RSS-247 § 5.2	Peak Power Spectral Density	2412 to 2462	Compliant

The testing was performed according to the procedures in ANSI C63.10-2013, KDB 558074 and 47 CFR Part 15. Where applicable, KDB 662911 was followed to sum required measurements.

3.4 Results

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

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 3-Meter and 10-Meter chambers located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2021. This site has also been registered with Innovations, Science and Economic Development (ISED) department and was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until June 30, 2021. Unified Compliance Laboratory has been assigned 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	9/18/2020	9/17/2021
LISN	AFJ	LS16C/10	UCL-2512	5/26/2020	5/26/2021
Cat6 ISN	Teseq	ISN T8-Cat6	UCL-2971	5/18/2020	5/18/2022
ISN	Teseq	ISN T800	UCL-2974	6/1/2020	6/1/2021
LISN	Com-Power	LIN-120C	UCL-2612	5/19/2021	5/19/2022
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

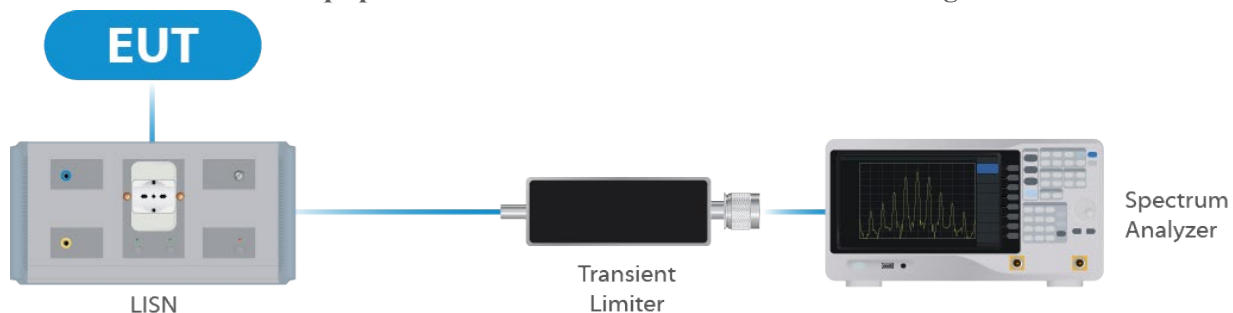


Figure 1: Conducted Emissions Test

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	8/24/2020	8/24/2021
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	9/8/2020	9/8/2021
Switch Extension	R&S	OSP-150W	UCL-2870	3/3/2021	3/3/2022

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

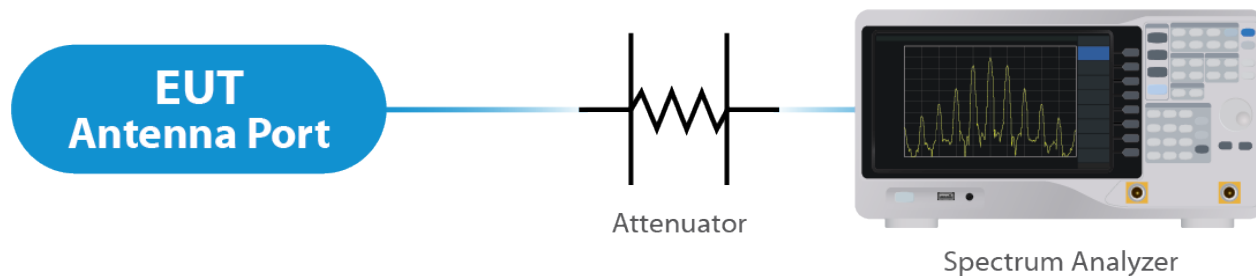


Figure 2: Direct Connect at the Antenna Port Test



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	6/1/2020	8/1/2021
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	9/10/2020	9/10/2021
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	7/8/2020	7/8/2021
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	11/16/2020	11/16/2021
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	5/21/2020	5/21/2022
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	9/29/2020	9/29/2021
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

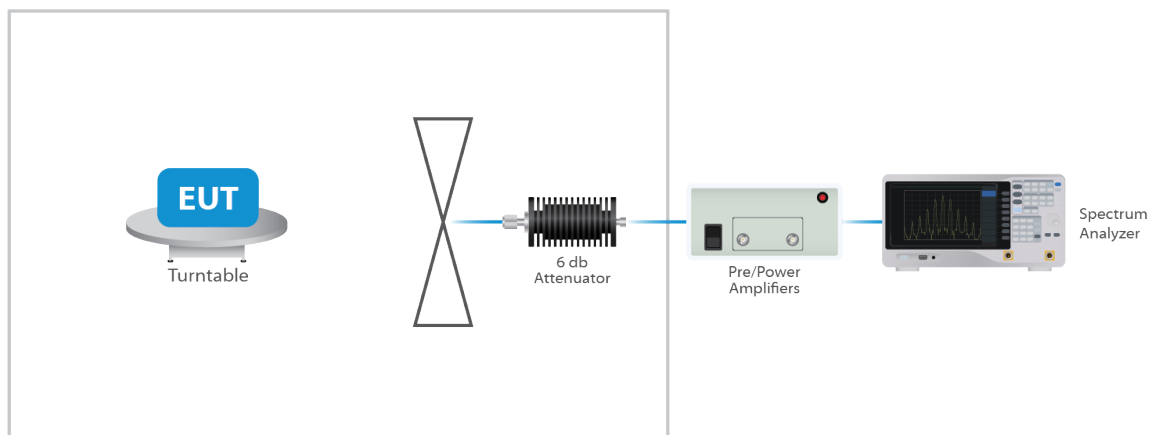


Figure 4: Radiated Emissions Test

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 folding antenna structure. The maximum gain of the antenna per chain is 3.2 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

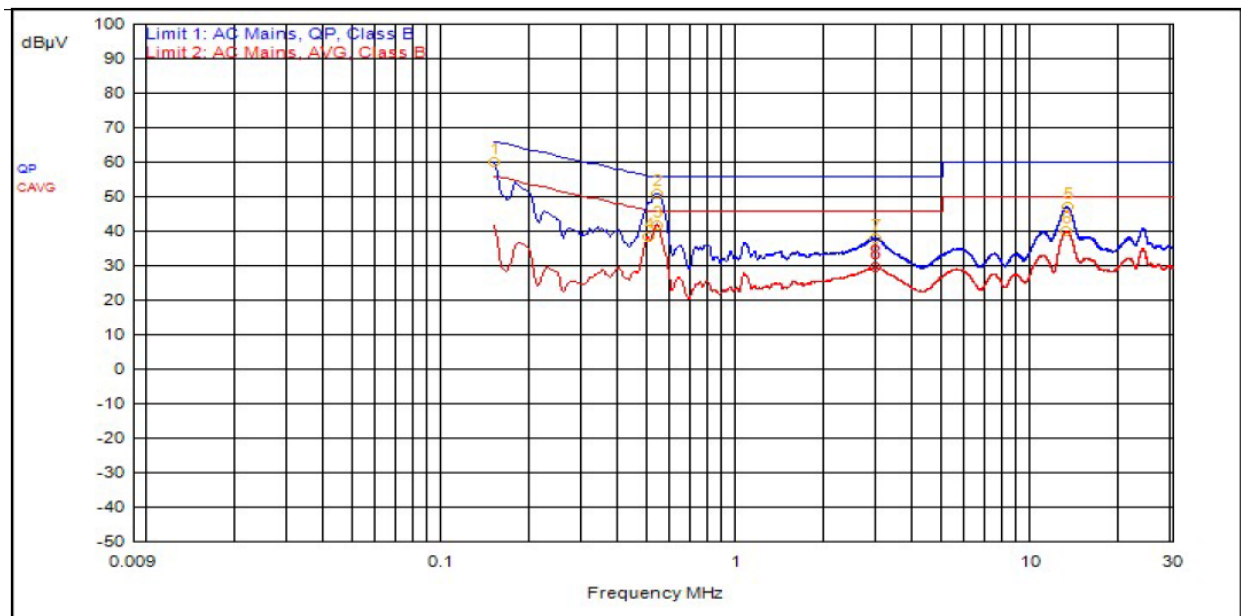
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;

For PSD measurements Array Gain = 10 log(NANT/NSS) dB = 3.01dB

Results

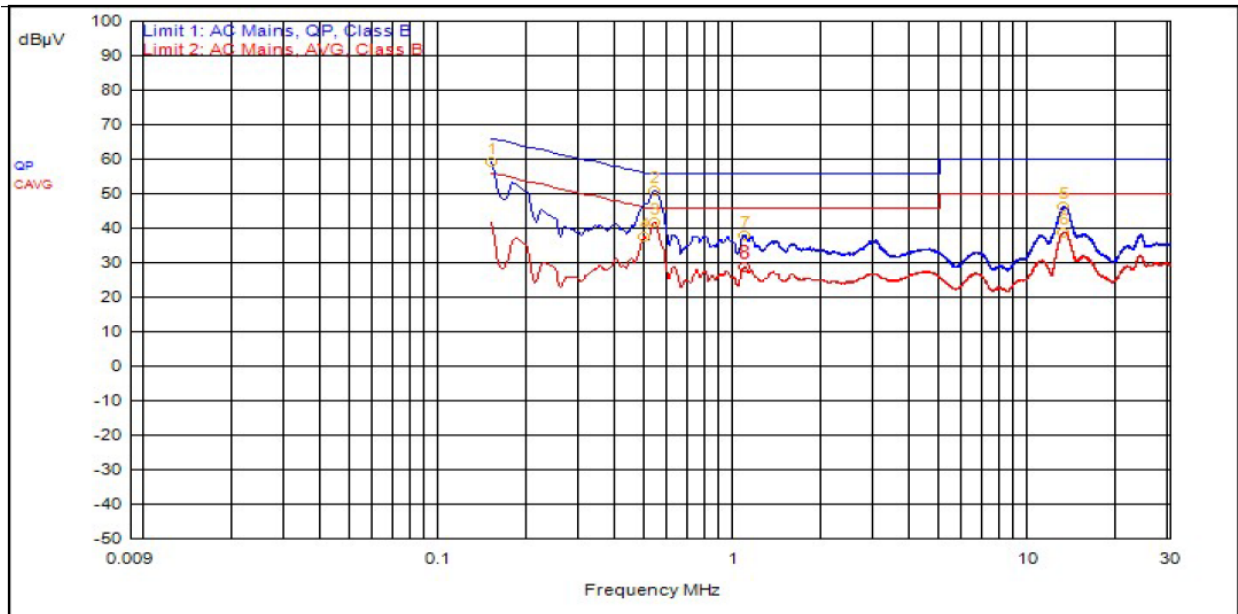
The EUT complied with the specification

5.2 Conducted Emissions at Mains Ports Data



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	531,000kHz	12.4			QPeak	38.4	50.8	56.0	-5.2		
1	150,000kHz	12.4			QPeak	47.5	59.9	66.0	-6.1		
5	13.080MHz	12.4			QPeak	34.5	46.9	60.0	-13.1		
7	2.940MHz	12.3			QPeak	25.7	38.0	56.0	-18.0		
3	531,000kHz	12.4			C_AVG	29.4	41.8			46.0	-4.2
4	498,000kHz	12.4			C_AVG	25.9	38.3			46.0	-7.8
6	12.963MHz	12.4			C_AVG	27.5	39.9			50.0	-10.1
8	2.928MHz	12.3			C_AVG	17.2	29.5			46.0	-16.5

Graph 1: Conducted Emissions Plot - Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	534,000kHz	12.4			QPeak	38.3	50.7	56.0	-5.3		
1	150,000kHz	12.4			QPeak	46.8	59.2	66.0	-6.8		
5	13.041MHz	12.4			QPeak	33.7	46.2	60.0	-13.8		
7	1.083MHz	12.4			QPeak	25.4	37.8	56.0	-18.2		
3	537,000kHz	12.4			C_AVG	29.2	41.6			46.0	-4.4
4	495,000kHz	12.4			C_AVG	25.1	37.5			46.1	-8.6
6	13.041MHz	12.4			C_AVG	26.4	38.8			50.0	-11.2
8	1.083MHz	12.4			C_AVG	16.3	28.7			46.0	-17.3

Graph 2: Conducted Emissions Plot – Line 1

Result

The EUT complied with the specification limit.

5.3 §15.247(a)(2) Emissions Bandwidth

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

Mode	Frequency (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth (MHz)
b	2412	13.1	8.20
	2437	13.6	8.65
	2462	13.2	8.20
g	2412	16.3	16.35
	2437	16.4	13.9
	2462	16.3	16.4
n 20	2412	17.5	17.0
	2437	17.5	16.75
	2462	17.5	17.25
n 40	2422	37.75	37.5
	2437	37.5	35.7
	2452	37.75	34.8
ax 20	2412	18.7	13.95
	2437	18.9	16.8
	2462	18.8	17.65
ax 40	2422	37.5	32.75
	2437	37.75	33.0
	2452	37.75	18.25

Result

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

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

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

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

The maximum average RF conducted output power measured for this device was 24.76 dBm or 299.23 mW. The limit is 30 dBm or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 3.2 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
CCK 20	2412	Mcs0	33	19.45	22.65
	2417	Mcs0	35	22.69	25.89
	2422	Mcs0	42	23.42	26.62
	2427	Mcs0	42	24.00	27.20
	2432	Mcs0	41	24.68	27.88
	2437	Mcs0	43	24.76	27.96
	2452	Mcs0	40	23.14	26.34
	2457	Mcs0	37	22.71	25.91
OFDM 20	2462	Mcs0	36	21.82	25.02
	2412	Mcs0	20	18.19	21.39
	2417	Mcs0	26	20.17	23.37
	2422	Mcs0	31	21.73	24.93
	2427	Mcs0	33	21.88	25.08
	2432	Mcs0	34	22.65	25.85
	2437	Mcs0	32	22.59	25.79
	2442	Mcs0	31	22.07	25.27
	2447	Mcs0	30	21.54	24.74
	2452	Mcs0	28	21.08	24.28
HT 20	2457	Mcs0	25	19.97	23.17
	2462	Mcs0	21	19.00	22.20
	2412	Mcs0	24	16.71	19.91
	2417	Mcs0	29	20.33	23.53
	2422	Mcs0	32	21.74	24.94
	2427	Mcs0	34	22.29	25.49
	2432	Mcs0	37	22.82	26.02
2437	Mcs0	38	22.65	25.85	
2442	Mcs0	37	21.68	24.88	

	2447	Mcs0	33	21.55	24.75
	2452	Mcs0	33	21.55	24.75
	2457	Mcs0	29	20.05	23.25
	2462	Mcs0	25	17.28	20.48
HT 40	2422	Mcs0	17	13.96	17.16
	2437	Mcs0	22	15.54	18.74
	2452	Mcs0	16	13.76	16.96
ax 20	2412	Mcs0	22	15.33	18.53
	2417	Mcs0	27	19.93	23.13
	2422	Mcs0	32	20.44	23.64
	2427	Mcs0	34	21.41	24.61
	2432	Mcs0	36	21.43	24.63
	2437	Mcs0	38	22.24	25.44
	2442	Mcs0	36	21.23	24.43
	2447	Mcs0	33	20.77	23.97
	2452	Mcs0	32	20.18	23.38
	2457	Mcs0	30	19.20	22.40
	2462	Mcs0	21	15.87	19.07
ax 40	2422	Mcs0	17	13.98	17.18
	2437	Mcs0	21	16.03	19.23
	2452	Mcs0	17	13.74	16.94

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 plot within the Annex)

* Gated EIRP shown in the Annex is the conducted measurement

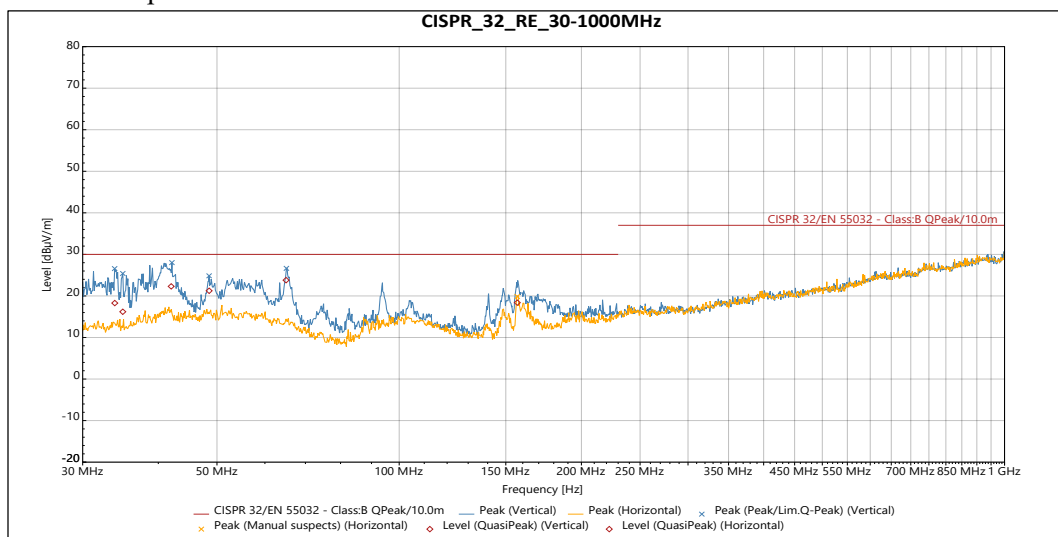
5.5 §15.247(d) Spurious Emissions

5.5.1 Radiated Spurious Emissions in the Restricted Bands of §15.205

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

Correction Factor = Antenna Factor + Cable Loss - Pre-amp 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.



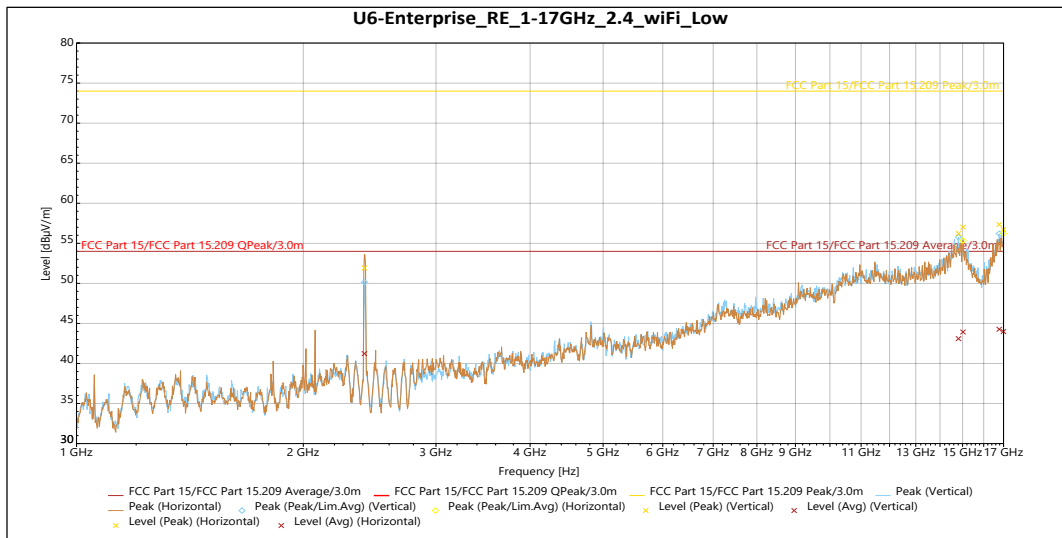
Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	33.896 MHz	18.279	30	-11.721	81	1.106	Vertical	-15.184
QuasiPeak	34.945 MHz	16.188	30	-13.812	319	1.946	Vertical	-14.833
QuasiPeak	42.009 MHz	22.297	30	-7.703	73	2.164	Vertical	-12.832
QuasiPeak	48.534 MHz	21.24	30	-8.76	20	2.62	Vertical	-12.359
QuasiPeak	65.031 MHz	23.786	30	-6.214	108	2.835	Vertical	-14.684

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	156.72 MHz	18.377	30	-11.623	235	3.995	Horizontal	-17.354

Table 4: Radiated Emissions 30 – 1000 MHz


Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	14.814 GHz	56.232	74	-17.768	96	3.798	Vertical	9.131
Peak	16.778 GHz	57.352	74	-16.648	283	3.281	Vertical	11.572

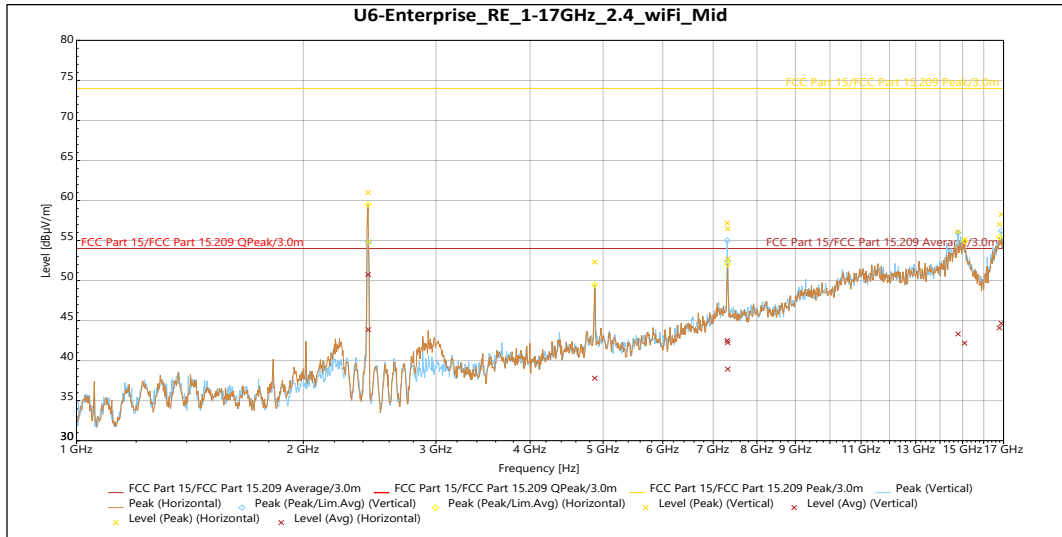
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	14.814 GHz	43.102	54	-10.898	96	3.798	Vertical	9.131
Avg	16.778 GHz	44.274	54	-9.726	283	3.281	Vertical	11.572

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	15.019 GHz	57.021	74	-16.979	317	1.643	Horizontal	10.152
Peak	16.995 GHz	56.734	74	-17.266	61	3.661	Horizontal	11.454

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	15.019 GHz	43.927	54	-10.073	317	1.643	Horizontal	10.152
Avg	16.995 GHz	43.979	54	-10.021	61	3.661	Horizontal	11.454

Table 5: Transmitting at the Lowest Frequency 1 – 17 GHz


Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	7.3064 GHz	57.201	74	-16.799	341	2.321	Vertical	-1.714
Peak	7.3166 GHz	56.472	74	-17.528	345	2.654	Vertical	-1.745
Peak	14.792 GHz	56.088	74	-17.912	115	1.674	Vertical	9.355
Peak	16.884 GHz	58.261	74	-15.739	323	1.643	Vertical	12.084

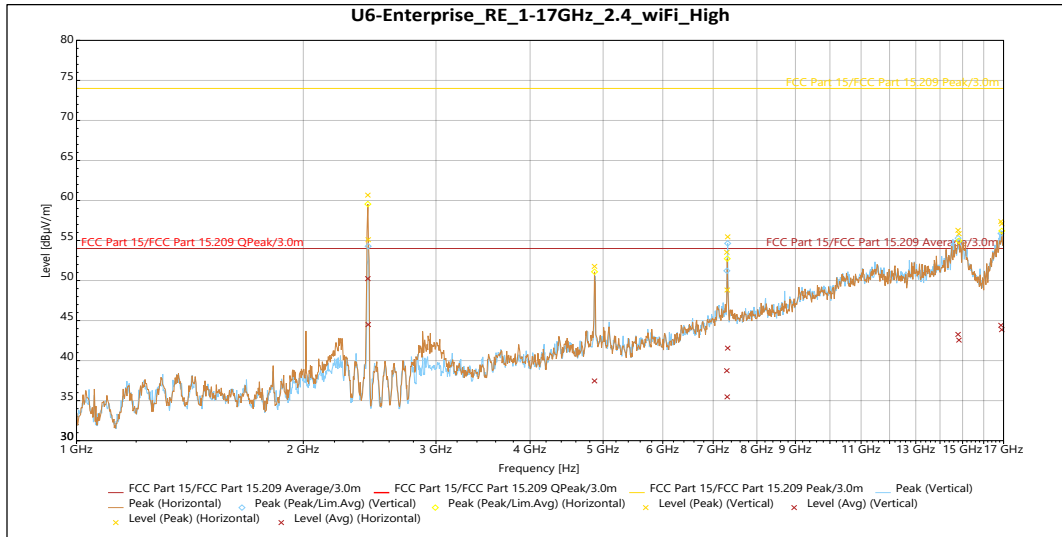
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	7.3064 GHz	42.506	54	-11.494	341	2.321	Vertical	-1.714
Avg	7.3166 GHz	42.249	54	-11.751	345	2.654	Vertical	-1.745
Avg	14.792 GHz	43.335	54	-10.665	115	1.674	Vertical	9.355
Avg	16.884 GHz	44.653	54	-9.347	323	1.643	Vertical	12.084

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	2.4385 GHz	60.994	74	-13.006	323	2.316	Horizontal	-14.328
Peak	4.8731 GHz	52.308	74	-21.692	29	2.159	Horizontal	-8.358
Peak	7.3165 GHz	52.695	74	-21.305	40	3.665	Horizontal	-1.745
Peak	15.092 GHz	55.139	74	-18.861	332	3.789	Horizontal	8.664
Peak	16.792 GHz	57.03	74	-16.97	327	3.742	Horizontal	11.602

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	2.4385 GHz	50.745	54	-3.255	323	2.316	Horizontal	-14.328
Avg	4.8731 GHz	37.797	54	-16.203	29	2.159	Horizontal	-8.358
Avg	7.3165 GHz	38.929	54	-15.071	40	3.665	Horizontal	-1.745
Avg	15.092 GHz	42.181	54	-11.819	332	3.789	Horizontal	8.664
Avg	16.792 GHz	44.077	54	-9.923	327	3.742	Horizontal	11.602

Table 6: Transmitting at the Middle Frequency 1 – 17 GHz


Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	2.4389 GHz	55.1	74	-18.9	8	3.307	Vertical	-14.325
Peak	7.2979 GHz	53.53	74	-20.47	341	2.307	Vertical	-1.631
Peak	7.3172 GHz	55.465	74	-18.535	343	2.658	Vertical	-1.747
Peak	14.795 GHz	56.279	74	-17.721	8	1.647	Vertical	9.386
Peak	16.869 GHz	57.381	74	-16.619	249	2.221	Vertical	11.967

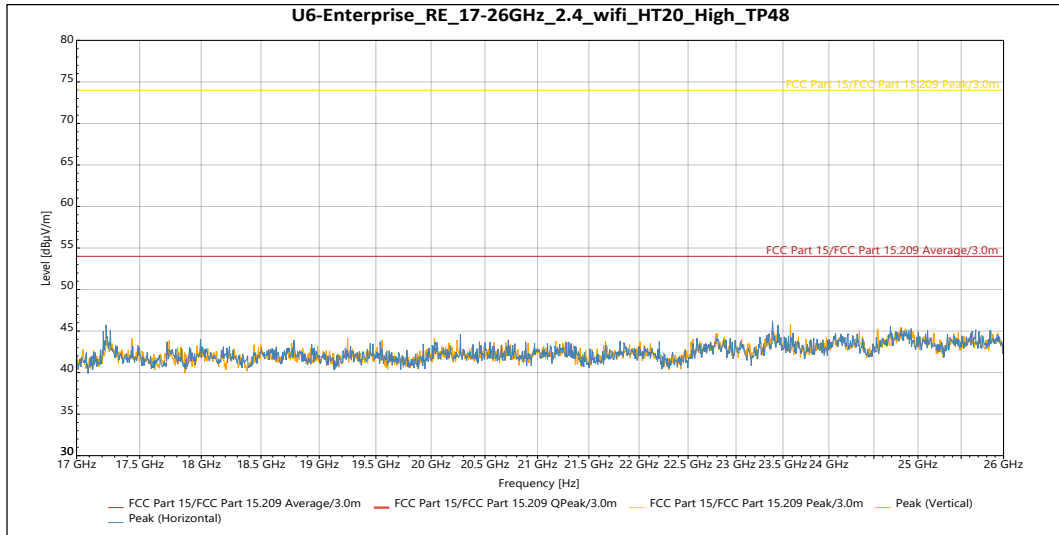
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	2.4389 GHz	44.502	54	-9.498	8	3.307	Vertical	-14.325
Avg	7.2979 GHz	38.737	54	-15.263	341	2.307	Vertical	-1.631
Avg	7.3172 GHz	41.564	54	-12.436	343	2.658	Vertical	-1.747
Avg	14.795 GHz	43.268	54	-10.732	8	1.647	Vertical	9.386
Avg	16.869 GHz	44.406	54	-9.594	249	2.221	Vertical	11.967

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	2.4363 GHz	60.668	74	-13.332	328	1.5	Horizontal	-14.34
Peak	4.8703 GHz	51.767	74	-22.233	359	1.644	Horizontal	-8.467
Peak	7.3064 GHz	48.818	74	-25.182	297	2.2	Horizontal	-1.714
Peak	14.835 GHz	55.847	74	-18.153	309	2.15	Horizontal	8.837
Peak	16.909 GHz	57.09	74	-16.91	114	4	Horizontal	11.499

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	2.4363 GHz	50.241	54	-3.759	328	1.5	Horizontal	-14.34
Avg	4.8703 GHz	37.461	54	-16.539	359	1.644	Horizontal	-8.467
Avg	7.3064 GHz	35.475	54	-18.525	297	2.2	Horizontal	-1.714
Avg	14.835 GHz	42.565	54	-11.435	309	2.15	Horizontal	8.837
Avg	16.909 GHz	43.861	54	-10.139	114	4	Horizontal	11.499

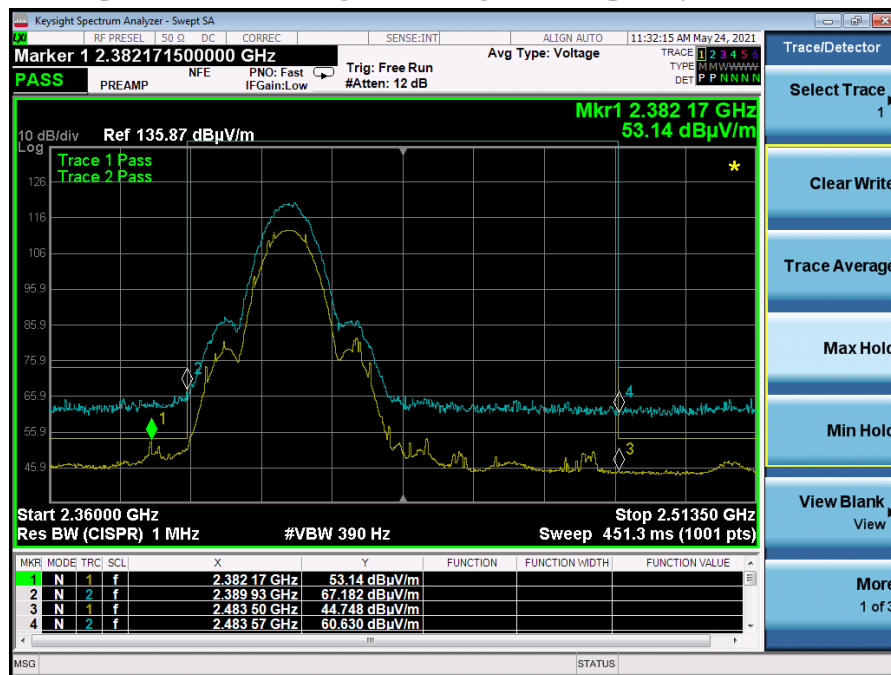
Table 7: Transmitting at the Highest Frequency 1 – 17 GHz



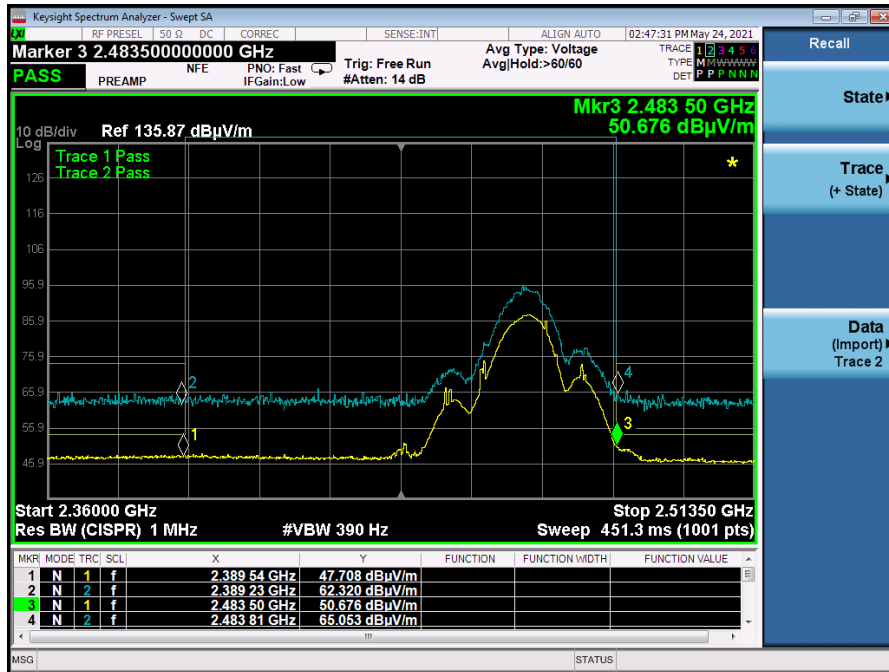
Vertical – No significant emissions were observed from 17 – 40 GHz

Horizontal – No significant emissions were observed from 17 – 40 GHz

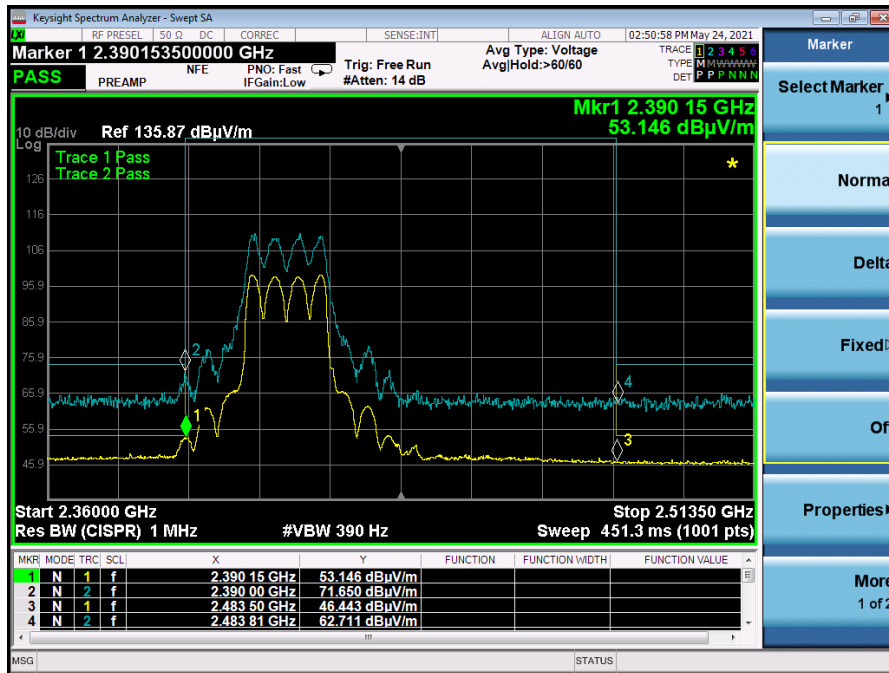
Graph 3: Transmitting at the Highest Frequency 17 – 40 GHz



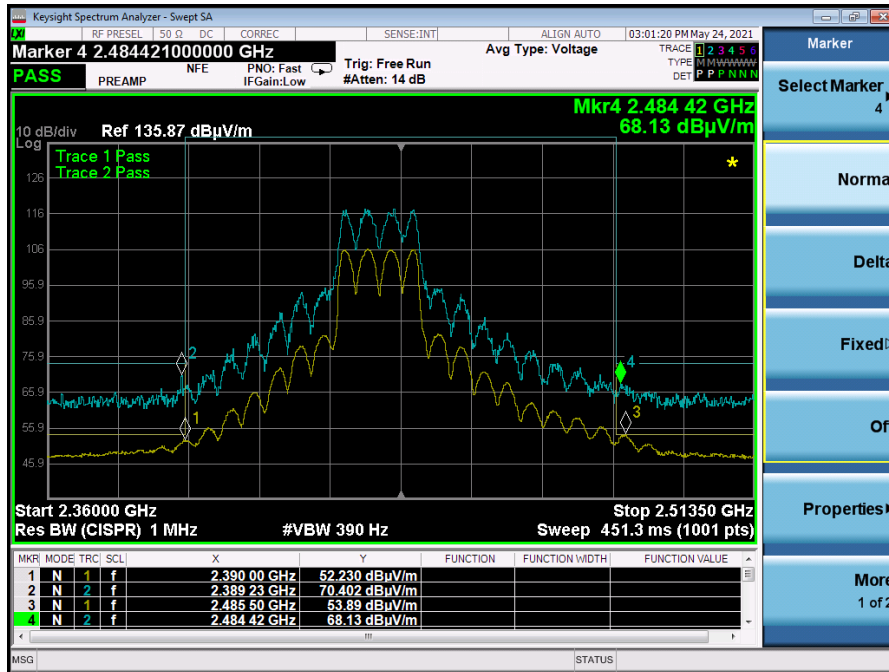
Graph 4: Lower Band Edge Plot – 2412 MHz – b Mode



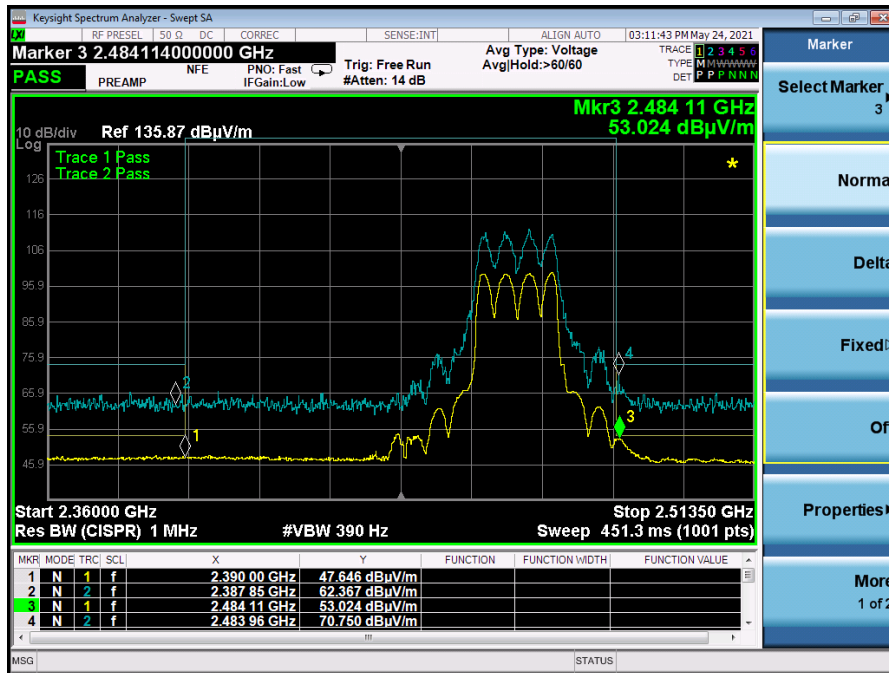
Graph 5: Upper Band Edge Plot – 2462 – b Mode



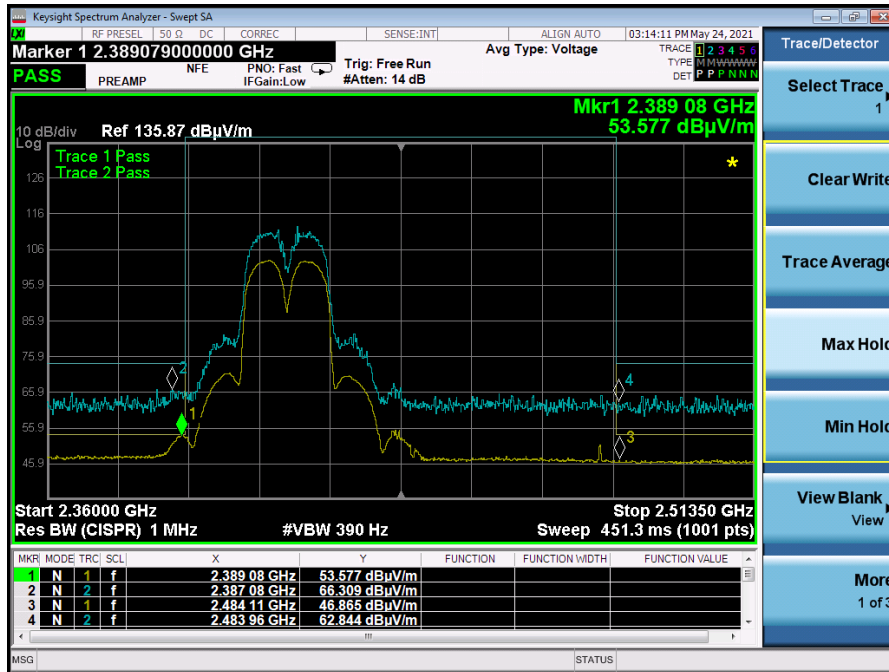
Graph 6: Lower Band Edge Plot – 2412 MHz – g Mode



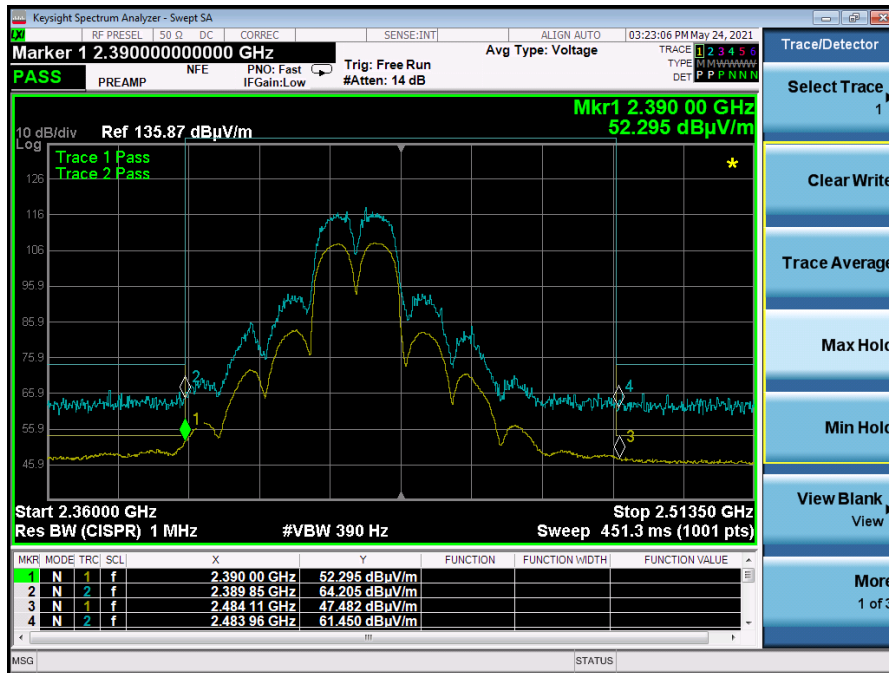
Graph 7: Middle Band Edge Plot – 2432 – g Mode



Graph 8: Upper Band Edge Plot – 2462 – g Mode



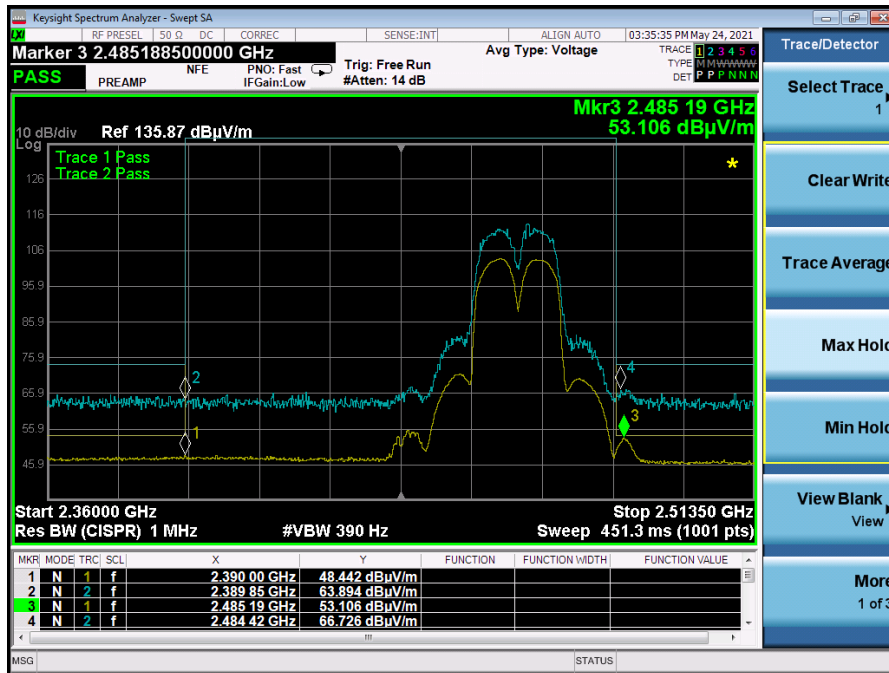
Graph 9: Lower Band Edge Plot – 2412 MHz – n20 Mode



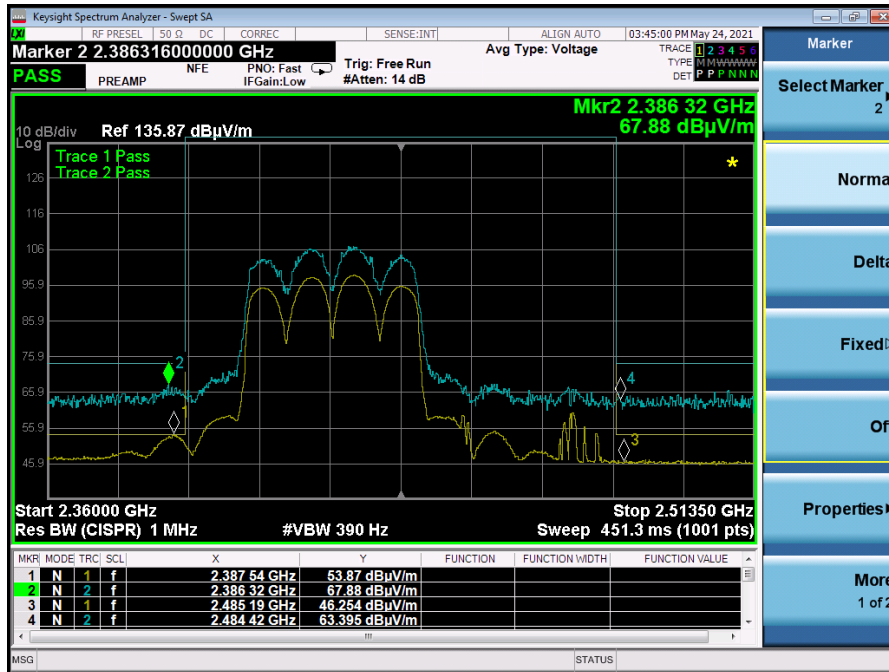
Graph 10: Middle Band Edge Plot – 2427 – n20 Mode



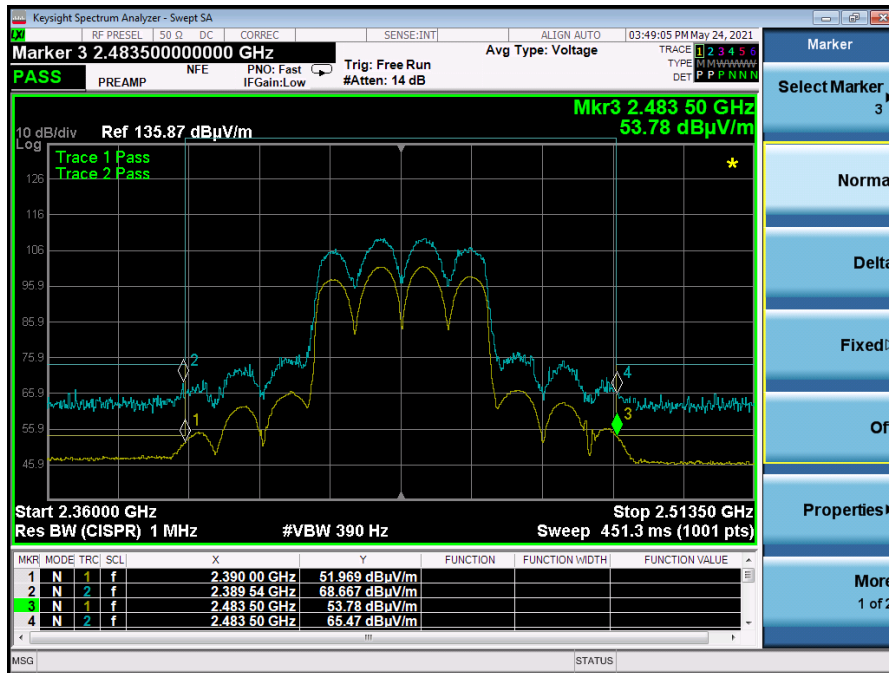
Graph 11: Middle Band Edge Plot – 2437 – n20 Mode



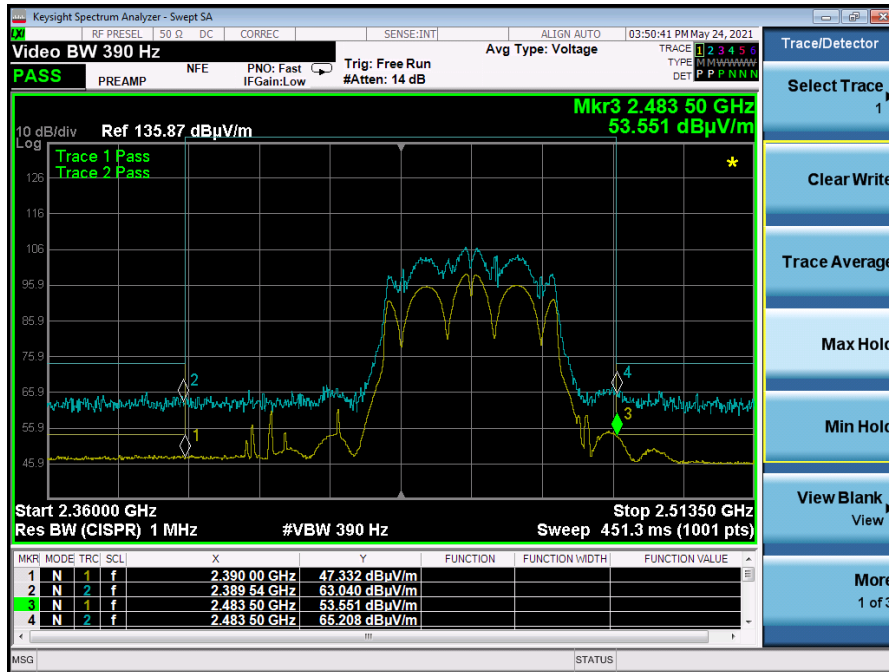
Graph 12: Upper Band Edge Plot – 2462 – n20 Mode



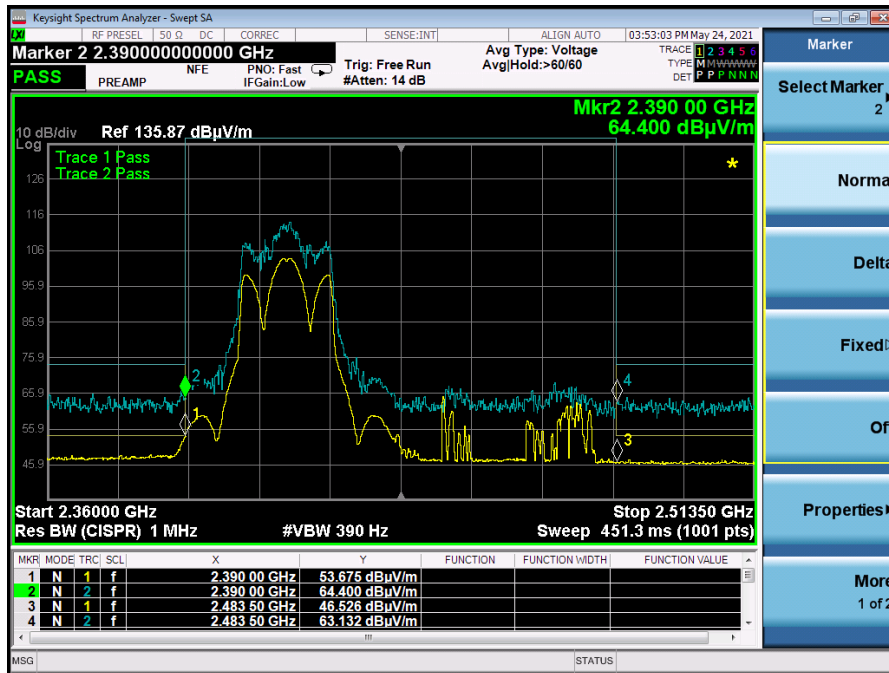
Graph 13: Lower Band Edge Plot – 2422 MHz – n40 Mode



Graph 14: Middle Band Edge Plot – 2437 – n40 Mode



Graph 15: Upper Band Edge Plot – 2452 – n40 Mode



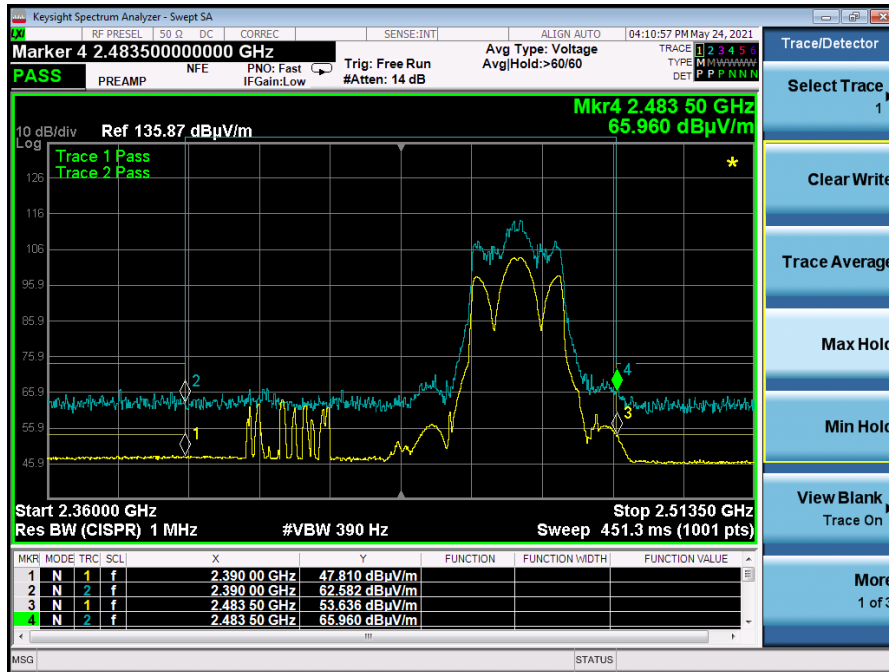
Graph 16: Lower Band Edge Plot – 2412 MHz – ax20 Mode



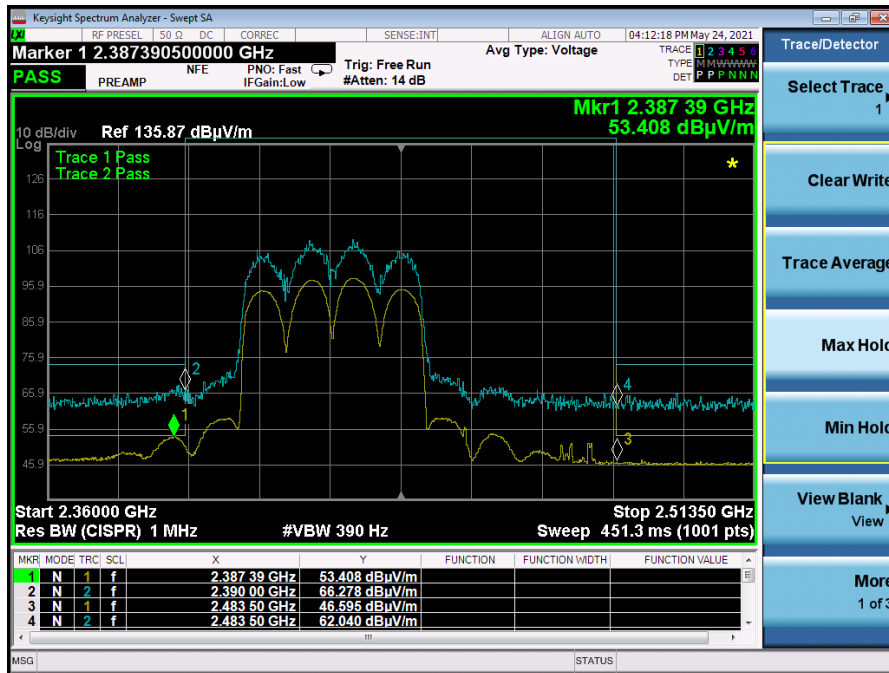
Graph 17: Middle Band Edge Plot – 2422– ax20 Mode



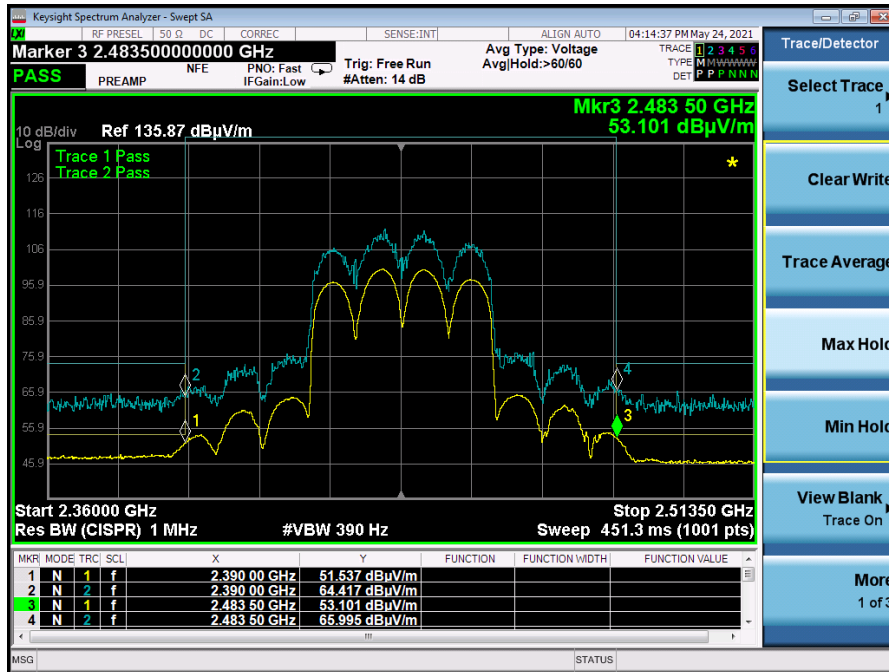
Graph 18: Middle Band Edge Plot – 2437 – ax20 Mode



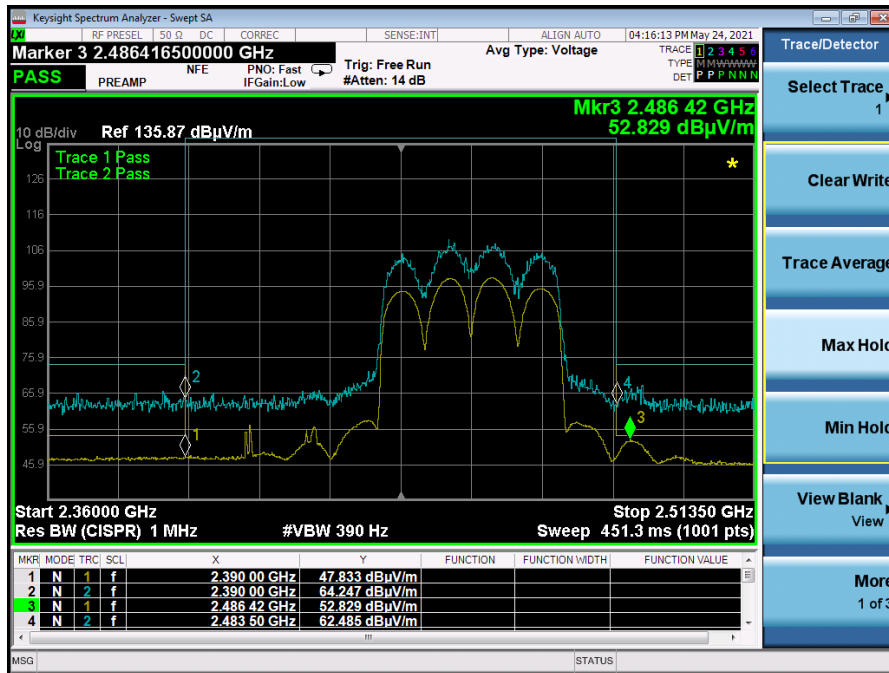
Graph 19: Upper Band Edge Plot – 2462 – ax20 Mode



Graph 20: Lower Band Edge Plot – 2422 MHz – ax20 Mode



Graph 21: Middle Band Edge Plot – 2437 – ax40 Mode



Graph 22: Upper Band Edge Plot – 2452 – ax40 Mode

5.6 §15.247(e) Maximum Average Power Spectral Density

All chains were measured and summed under the guidance of KDB 558074 Section 8.4. and KDB 66291 D01. Please see associated annex for details on instrument settings.

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. **The antenna gain is 3.2 dBi + Array gain of 3.01 dB which is a total of 6.21 dBi.**

Results of this testing are summarized.

Mode	Frequency (MHz)	Measurement (dBm)	Criteria (dBm)
b	2412	-9.81	8.0
	2437	-4.77	8.0
	2462	-8.31	8.0
g	2412	-25.04	8.0
	2437	-18.14	8.0
	2462	-24.81	8.0
n 20	2412	-21.03	8.0
	2437	-13.48	8.0
	2462	-20.00	8.0
n 40	2422	-27.09	8.0
	2437	-23.64	8.0
	2452	-27.89	8.0
ax 20	2412	-23.98	8.0
	2437	-15.81	8.0
	2462	-24.32	8.0
ax 40	2422	-28.74	8.0
	2437	-26.09	8.0
	2452	-28.50	8.0

Result

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

-- End of Test Report --