



427 West 12800 South
 Draper, UT 84020

Test Report Certification

FCC ID	SWX-U6IWR
IC ID	6545-U6IWR
Equipment Under Test	U6-IW
Test Report Serial Number	TR6351_01
Date of Tests	13-15 July, 4-5 August 2021
Report Issue Date	27 August 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-IW
FCC ID	SWX-U6IWR
IC ID	6545A-U6IWR

On this 27th day of August 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: Kimberly Rodriguez



Reviewed By: Joseph W. Jackson

Revision History		
Revision	Description	Date
01	Original Report Release	27 August 2021

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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	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-IW
Serial Number	68D79A1F4699
Dimensions (cm)	7.06 x 11.46 x 2.85

2.2 Description of EUT

The U6-IW is an in-wall Wi-Fi 6 access point that can be mounted into a standard wall outlet. It includes 4 Gigabit Ethernet ports for wired connectivity, one of which offers PoE passthrough for an 802.3af device. U6-IW delivers an aggregate radio rate of 2.4 Gbps with 5 GHz (4x4 MU-MIMO and OFDMA) and 2.4 GHz (2x2 MIMO) radios. Location tracking is available via Bluetooth.

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-IW SN: 68D79A1F4699	Wifi Access Point	See section 2.4
BN: Ubiquiti MN: UVC G3 Flex SN: N/A	Video Camera	Shielded or Un-Shielded Cat 5e cable (Note 2)
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/Un-Shielded Cat 5/< 3 meters
Ethernet Ports	4	Shielded/Un-Shielded Cat 5/< 3 meters

2.5 Operating Environment

Power Supply	120 Volts AC to 48 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	24.6 - 26.5°C
Humidity	35.44 – 41.67%
Barometric Pressure	1017 mBar

2.6 Operating Modes

The U6-IW was connected to a laptop computer that runs test software providing constant transmission in the operating modes. The measurement within this report are corrected to reference a 100% duty cycle. A video camera was connected as ancillary equipment, through the U6-IW LAN port for active testing. All emission modes were investigated. The testing software enabled constant connectivity throughout emissions testing and ensured that correct operation is maintained.

2.7 EUT Exercise Software

Ubiquiti testing software Atheros Radio Test (ART) and firmware version 1.0 were utilized for the control of EUT transceivers.

2.8 Block Diagram of Test Configuration

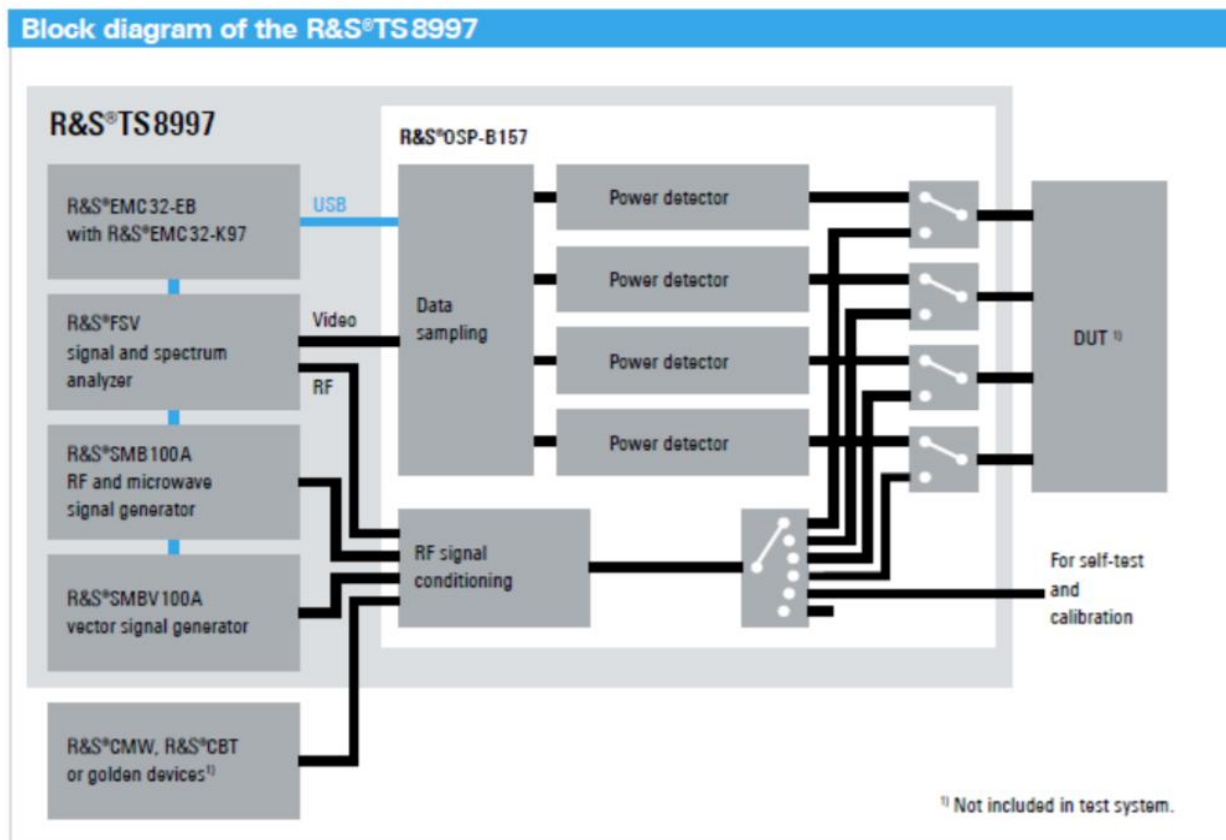


Diagram 1: Test Configuration Block Diagram

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 26000	NA
15.247(d)	RSS-247 § 5.4	Radiated Spurious Emissions	0.009 to 26000	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 2022. 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 30 June 2022. 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	5/26/2022
Cat6 ISN	Teseq	ISN T8-Cat6	UCL-2971	5/18/2020	5/18/2022
ISN	Teseq	ISN T800	UCL-2974	6/4/2021	6/4/2022
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

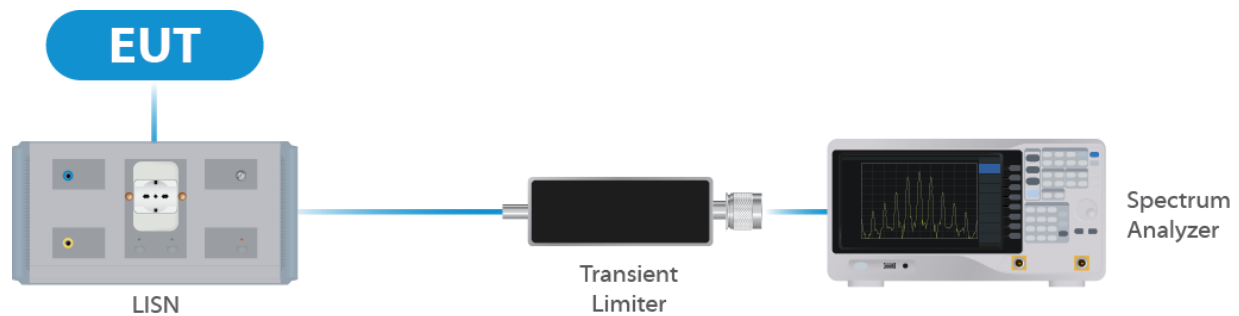


Figure 1: Conducted Emissions Test

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

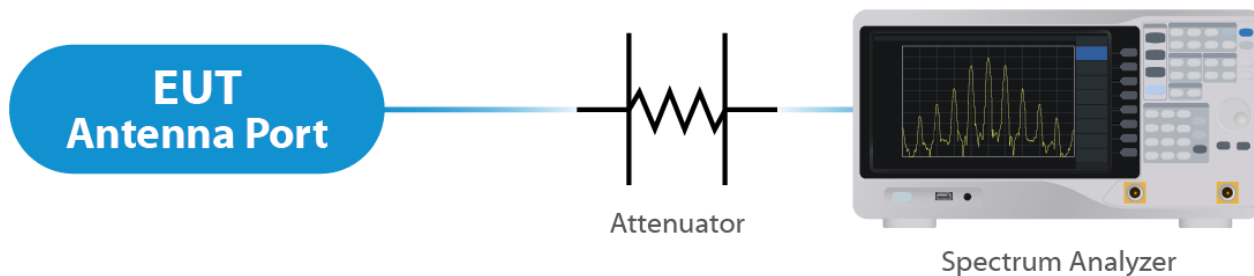


Figure 2: Direct Connect at the Antenna Port Test



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	6/21/2021	6/21/2022
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	7/8/2021	7/8/2022
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

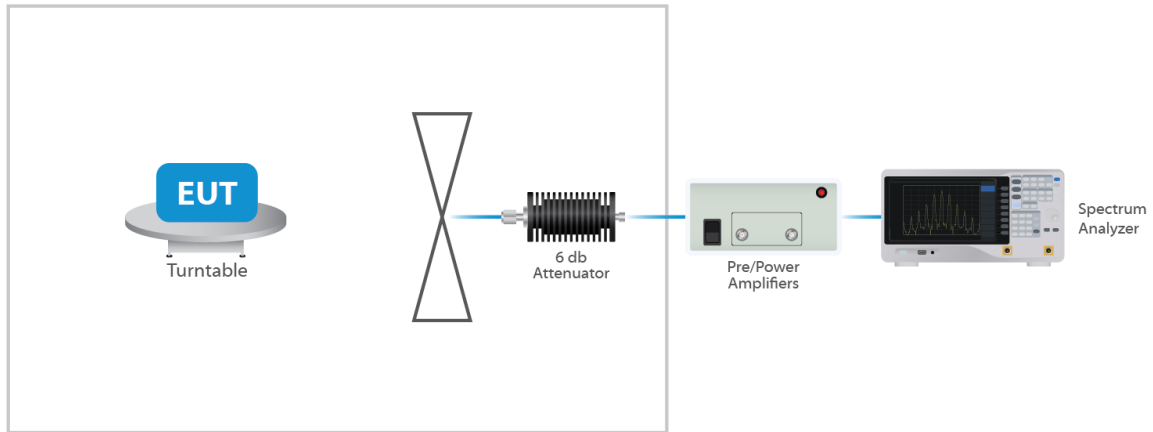


Figure 4: Radiated Emissions Test

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 antenna. The maximum gain of the antenna per chain is 4 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable.

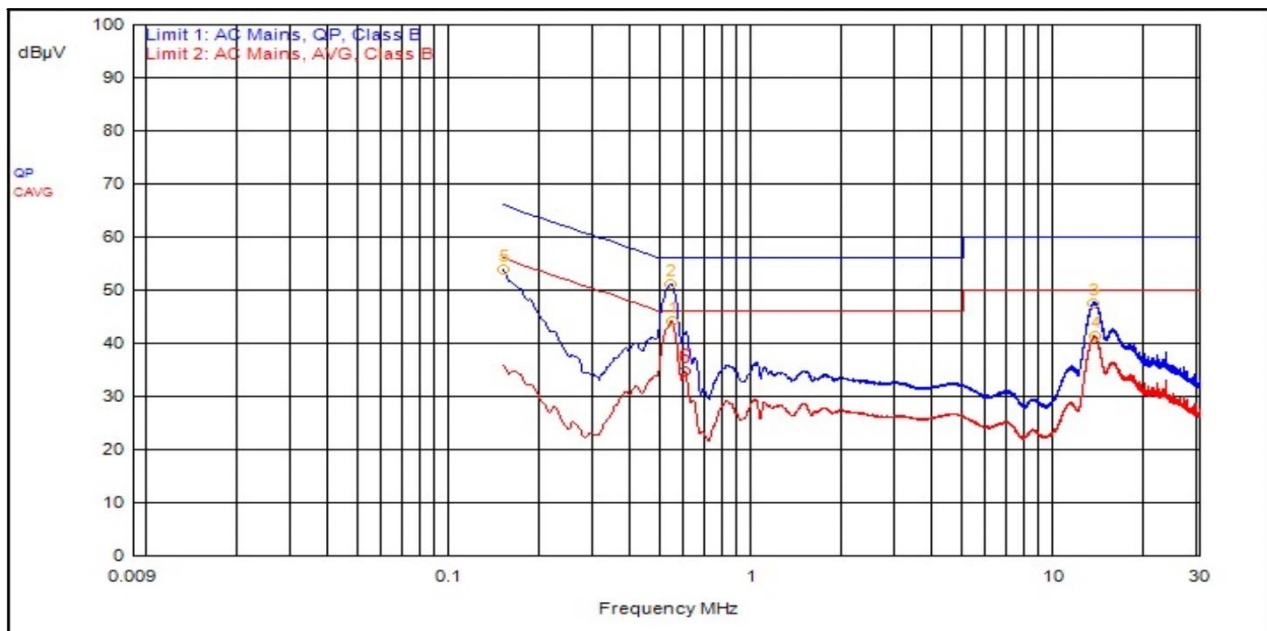
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;

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

Results

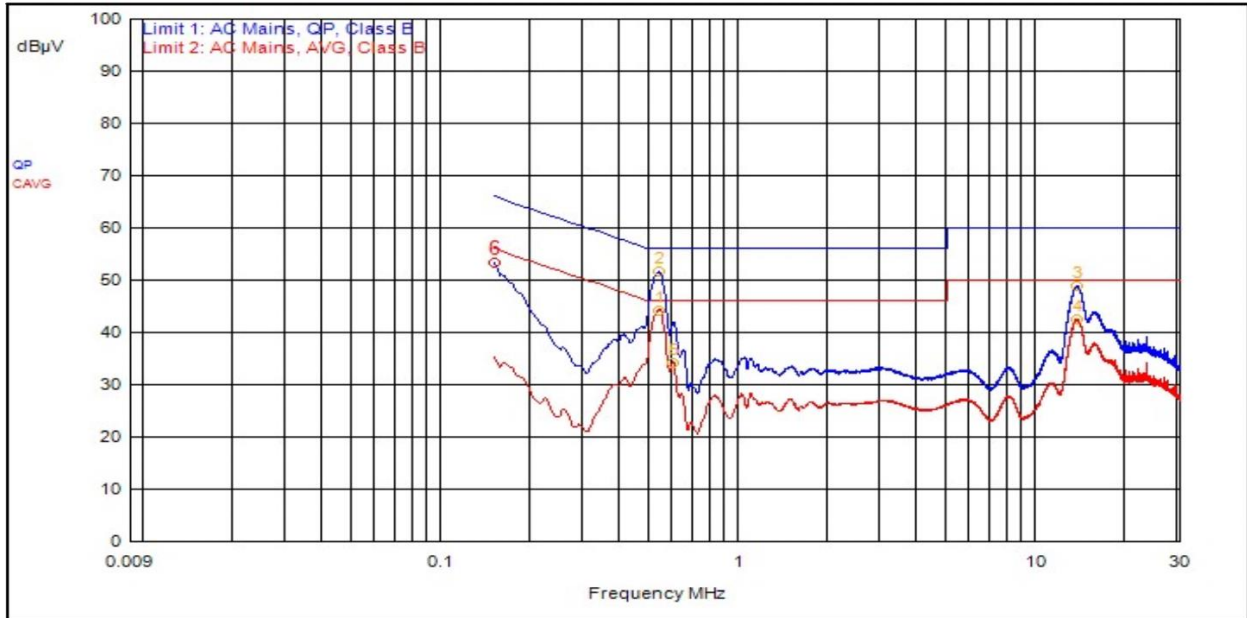
The EUT complied with the specification.

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	534,000kHz	12.4	0.0		QPeak	38.6	51.1	56.0	-4.9		
5	150,000kHz	12.4	0.0		QPeak	41.5	53.9	66.0	-12.1		
3	13.398MHz	12.4	0.2		QPeak	35.0	47.6	60.0	-12.4		
1	540,000kHz	12.4	0.0		C_AVG	31.8	44.2			46.0	-1.8
4	13.440MHz	12.4	0.2		C_AVG	28.6	41.3			50.0	-8.7
6	594,000kHz	12.4	0.0		C_AVG	22.2	34.6			46.0	-11.4

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	531,000kHz	12.4	0.0		QPeak	39.2	51.6	56.0	-4.4		
3	13.533MHz	12.4	0.2		QPeak	36.2	48.8	60.0	-11.2		
6	150,000kHz	12.4	0.0		QPeak	41.1	53.4	66.0	-12.6		
1	531,000kHz	12.4	0.0		C_AVG	31.8	44.2			46.0	-1.8
4	13.503MHz	12.4	0.2		C_AVG	29.8	42.5			50.0	-7.5
5	591,000kHz	12.4	0.0		C_AVG	21.8	34.2			46.0	-11.8

Graph 2: Conducted Emissions Plot - Line 1

Results

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	14.50	8.20
	2437	15.20	10.05
	2462	13.30	7.25
g	2412	16.30	15.75
	2437	28.10	16.15
	2462	16.30	16.10
n 20	2412	17.70	17.25
	2437	18.80	17.40
	2462	17.50	14.50
n 40	2422	37.75	33.70
	2437	37.50	35.75
	2452	37.75	34.95
ax 20	2412	18.90	13.85
	2437	19.20	18.80
	2462	19.00	17.40
ax 40	2422	37.75	34.90
	2437	37.75	34.95
	2452	37.25	32.20

Results

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 24.22 dBm or 246.24 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 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
CCK 20	2412	Mcs0	22	23.04	27.04
	2437	Mcs0	22.5	23.44	27.44
	2457	Mcs0	20	21.35	25.35
	2462	Mcs0	20	21.65	25.65
OFDM 20	2412	Mcs0	18.5	19.95	23.95
	2417	Mcs0	20	21.1	25.1
	2437	Mcs0	21.5	22.6	26.6
	2457	Mcs0	20.5	21.94	25.94
	2462	Mcs0	18	19.55	23.55
HT 20	2412	Mcs0	19	20	24
	2417	Mcs0	20.5	21.24	25.24
	2437	Mcs0	22	22.78	26.78
	2457	Mcs0	20.5	21.64	25.64
	2462	Mcs0	19	20.14	24.14
HT 40	2422	Mcs0	17	18.04	22.04
	2437	Mcs0	17.5	18.77	22.77
	2452	Mcs0	15.5	17.07	21.07
ax 20	2412	Mcs0	18	18.67	22.67
	2417	Mcs0	19	19.45	23.45
	2437	Mcs0	21	21.4	25.4
	2457	Mcs0	19	19.84	23.84
	2462	Mcs0	18	18.75	22.75
ax 40	2422	Mcs0	17	18.03	22.03
	2437	Mcs0	17.5	18.79	22.79
	2452	Mcs0	15.5	17.06	21.06

Results

In the configuration tested, the maximum 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

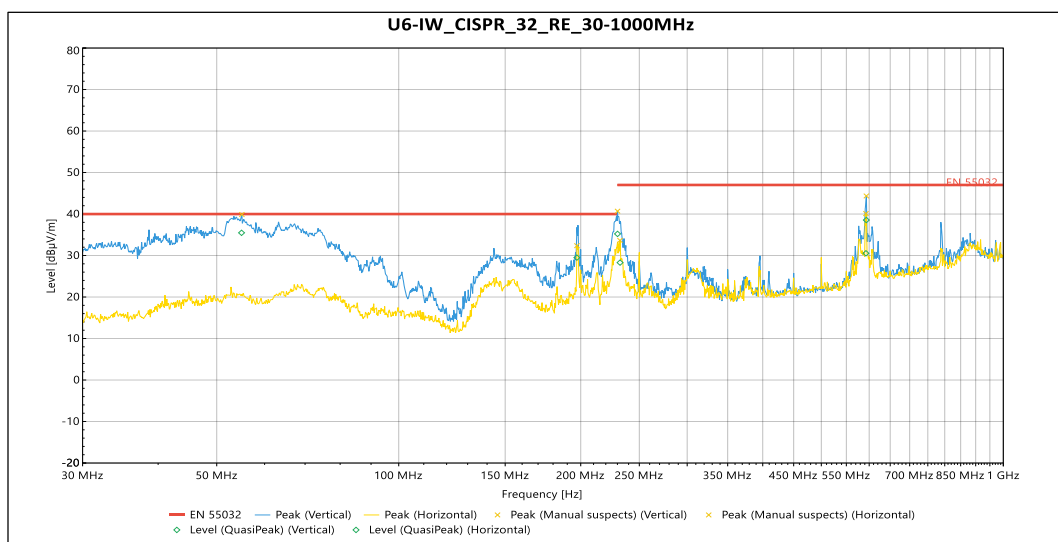
5.5 §15.247(d) Spurious Emissions

5.5.1 Radiated Spurious Emissions

The ranges from the lowest frequency used and generated by the device to the tenth harmonic of the highest fundamental emissions were investigated. These tests were used to measure any emissions radiated in the restricted bands. The following tables show the measurements of those emissions that lay within the restricted bands of §15.205. Worst-case scenarios are measured at a distance of 1 meter for frequencies above 18GHz. The noise floor was a minimum of 6 dB below the required limits with emissions in the restricted bands meeting the limits specified in §15.209. Spurious emission data for each frequency range and plots of band edge are shown below.

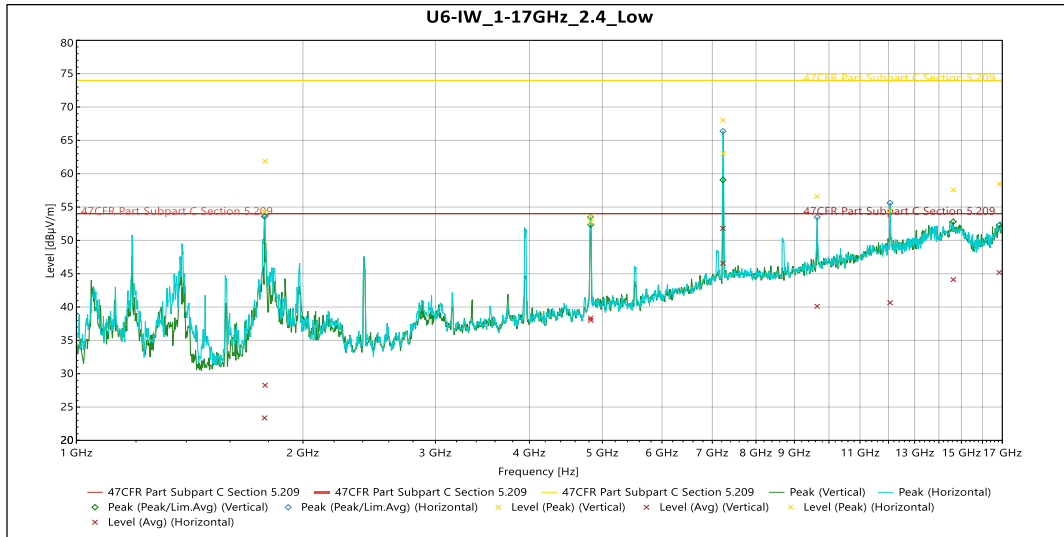
Correction Factor = Antenna Factor + Cable Loss - Pre-amp Gain, and is added to the Receiver Reading
Results

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



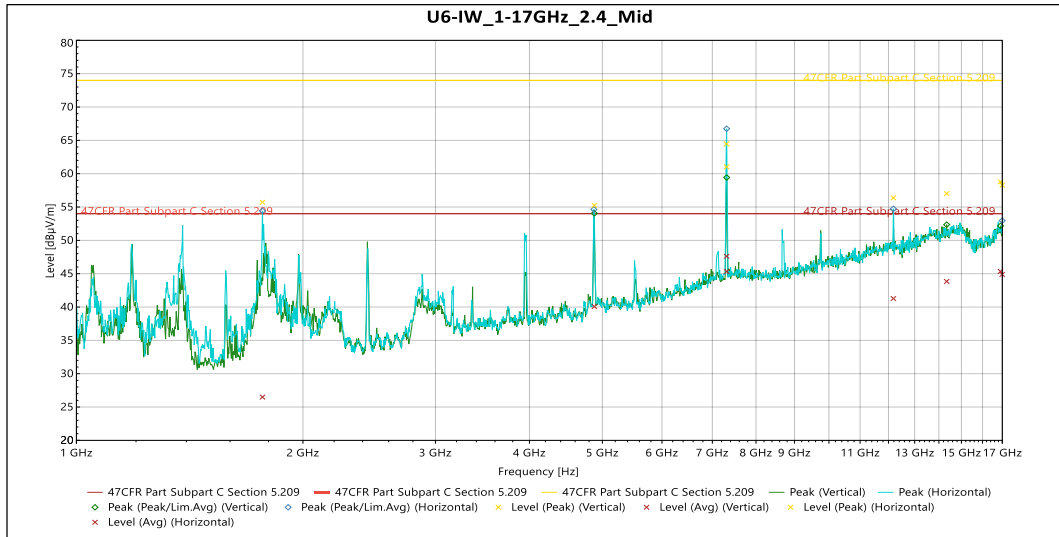
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Meas. Time	RBW	Meas.Time	Correction (dB)
QuasiPeak	54.959 MHz	35.471	40	-4.529	259	3.416	Vertical	15	120000	0.001	-12.73
QuasiPeak	230.09 MHz	35.209	47	-11.791	125	1.12	Vertical	15	120000	0.001	-13.498
QuasiPeak	593.54 MHz	38.548	47	-8.452	4	2.957	Vertical	15	120000	0.001	-5.374
QuasiPeak	197.08 MHz	29.5	40	-10.5	225	3.882	Horizontal	15	120000	0.001	-13.826
QuasiPeak	232.32 MHz	28.288	47	-18.712	258	3.921	Horizontal	15	120000	0.001	-13.365
QuasiPeak	592.59 MHz	30.544	47	-16.456	50	3.855	Horizontal	15	120000	0.001	-5.407

Table 4: Radiated Emissions 30 - 1000 MHz



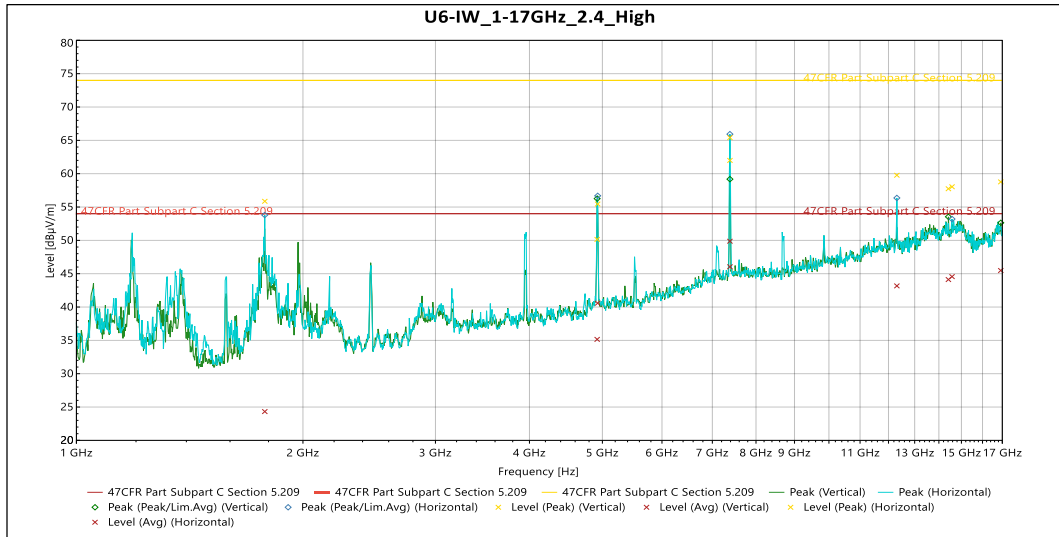
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW	Meas.Time	Correction (dB)
Peak	1.7784 GHz	54.279	74	-19.721	142	2.001	Vertical	5	1000000	0	-9.591
Peak	4.8245 GHz	52.751	74	-21.249	350	1.643	Vertical	5	1000000	0	0.177
Peak	7.2319 GHz	63.015	74	-10.985	24	2.182	Vertical	5	1000000	0	7.216
Peak	14.633 GHz	57.575	74	-16.425	229	2.186	Vertical	5	1000000	0	14.916
Peak	16.844 GHz	58.46	74	-15.54	300	2.566	Vertical	5	1000000	0	16.925
Avg	1.7784 GHz	23.366	54	-30.634	142	2.001	Vertical	5	1000000	0	-9.591
Avg	4.8245 GHz	38.023	54	-15.977	350	1.643	Vertical	5	1000000	0	0.177
Avg	7.2319 GHz	46.567	54	-7.433	24	2.182	Vertical	5	1000000	0	7.216
Avg	14.633 GHz	44.114	54	-9.886	229	2.186	Vertical	5	1000000	0	14.916
Avg	16.844 GHz	45.179	54	-8.821	300	2.566	Vertical	5	1000000	0	16.925
Peak	1.7811 GHz	61.881	74	-12.119	175	2.363	Horizontal	5	1000000	0	-9.569
Peak	4.822 GHz	53.594	74	-20.406	1	1.824	Horizontal	5	1000000	0	0.16
Peak	7.2311 GHz	68.043	74	-5.957	1	1.5	Horizontal	5	1000000	0	7.211
Peak	9.6465 GHz	56.583	74	-17.417	22	3.267	Horizontal	5	1000000	0	8.742
Peak	12.058 GHz	54.418	74	-19.582	124	3.617	Horizontal	5	1000000	0	12.773
Avg	1.7811 GHz	28.272	54	-25.728	175	2.363	Horizontal	5	1000000	0	-9.569
Avg	4.822 GHz	38.328	54	-15.672	1	1.824	Horizontal	5	1000000	0	0.16
Avg	7.2311 GHz	51.797	54	-2.203	1	1.5	Horizontal	5	1000000	0	7.211
Avg	9.6465 GHz	40.113	54	-13.887	22	3.267	Horizontal	5	1000000	0	8.742
Avg	12.058 GHz	40.655	54	-13.345	124	3.617	Horizontal	5	1000000	0	12.773

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



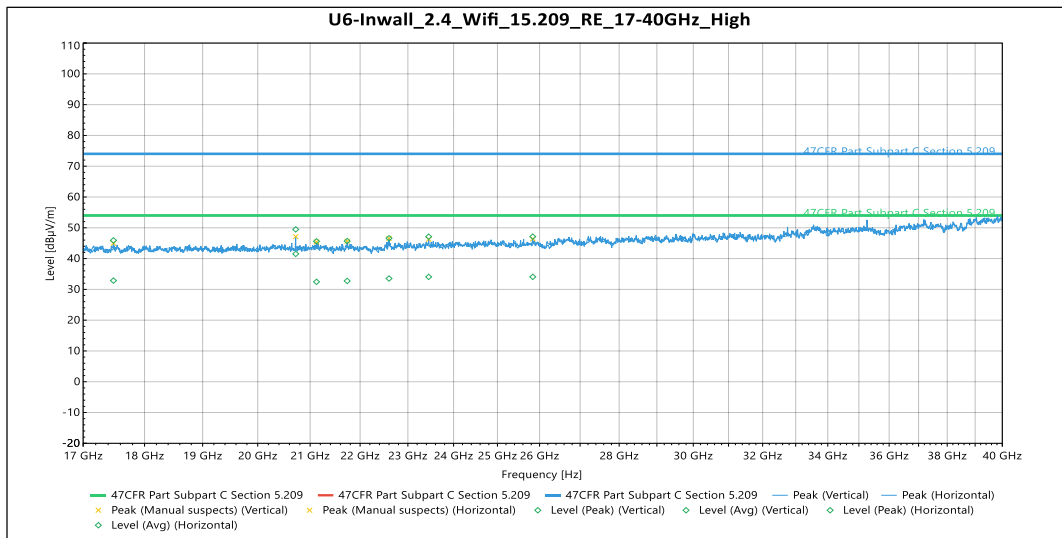
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW	Meas.Time	Correction (dB)
Peak	4.8786 GHz	55.249	74	-18.751	348	1.5	Vertical	5	1000000	0	0.303
Peak	7.314 GHz	61.029	74	-12.971	331	4	Vertical	5	1000000	0	7.58
Peak	14.339 GHz	57.021	74	-16.979	77	3.444	Vertical	5	1000000	0	14.763
Peak	16.905 GHz	58.765	74	-15.235	262	3.444	Vertical	5	1000000	0	17.171
Avg	4.8786 GHz	40.071	54	-13.929	348	1.5	Vertical	5	1000000	0	0.303
Avg	7.314 GHz	45.334	54	-8.666	331	4	Vertical	5	1000000	0	7.58
Avg	14.339 GHz	43.836	54	-10.164	77	3.444	Vertical	5	1000000	0	14.763
Avg	16.905 GHz	45.34	54	-8.66	262	3.444	Vertical	5	1000000	0	17.171
Peak	1.767 GHz	55.71	74	-18.29	163	1.828	Horizontal	5	1000000	0	-9.666
Peak	7.312 GHz	64.466	74	-9.534	323	2.032	Horizontal	5	1000000	0	7.584
Peak	12.182 GHz	56.378	74	-17.622	359	3.263	Horizontal	5	1000000	0	12.719
Peak	16.994 GHz	58.281	74	-15.719	29	3.793	Horizontal	5	1000000	0	16.767
Avg	1.767 GHz	26.494	54	-27.506	163	1.828	Horizontal	5	1000000	0	-9.666
Avg	7.312 GHz	47.61	54	-6.39	323	2.032	Horizontal	5	1000000	0	7.584
Avg	12.182 GHz	41.285	54	-12.715	359	3.263	Horizontal	5	1000000	0	12.719
Avg	16.994 GHz	44.893	54	-9.107	29	3.793	Horizontal	5	1000000	0	16.767

Table 6: Transmitting on Middle Frequency 1 - 17 GHz



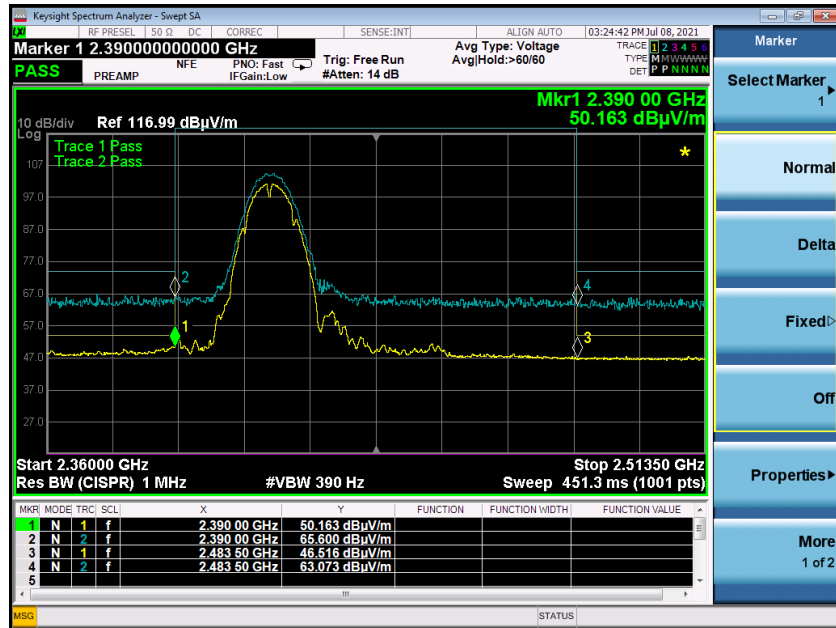
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Meas. Time (s)	RBW	Meas. Time	Correction (dB)
Peak	4.9204 GHz	50.143	74	-23.857	96	3.617	Vertical	5	1000000	0	0.458
Peak	7.3872 GHz	61.99	74	-12.01	344	3.621	Vertical	5	1000000	0	7.687
Peak	14.414 GHz	57.738	74	-16.262	246	1.688	Vertical	5	1000000	0	14.775
Peak	16.92 GHz	58.767	74	-15.233	40	1.828	Vertical	5	1000000	0	17.137
Avg	4.9204 GHz	35.153	54	-18.847	96	3.617	Vertical	5	1000000	0	0.458
Avg	7.3872 GHz	46.042	54	-7.958	344	3.621	Vertical	5	1000000	0	7.687
Avg	14.414 GHz	44.115	54	-9.885	246	1.688	Vertical	5	1000000	0	14.775
Avg	16.92 GHz	45.485	54	-8.515	40	1.828	Vertical	5	1000000	0	17.137
Peak	1.7797 GHz	55.859	74	-18.141	332	1.5	Horizontal	5	1000000	0	-9.576
Peak	4.9281 GHz	55.446	74	-18.554	309	1.647	Horizontal	5	1000000	0	0.474
Peak	7.3867 GHz	65.408	74	-8.592	353	1.643	Horizontal	5	1000000	0	7.687
Peak	12.311 GHz	59.766	74	-14.234	7	2.721	Horizontal	5	1000000	0	12.622
Peak	14.575 GHz	58.045	74	-15.955	7	2.182	Horizontal	5	1000000	0	15.113
Avg	1.7797 GHz	24.316	54	-29.684	332	1.5	Horizontal	5	1000000	0	-9.576
Avg	4.9281 GHz	40.582	54	-13.418	309	1.647	Horizontal	5	1000000	0	0.474
Avg	7.3867 GHz	49.868	54	-4.132	353	1.643	Horizontal	5	1000000	0	7.687
Avg	12.311 GHz	43.168	54	-10.832	7	2.721	Horizontal	5	1000000	0	12.622
Avg	14.575 GHz	44.56	54	-9.44	7	2.182	Horizontal	5	1000000	0	15.113

Table 7: Transmitting on Highest Frequency 1 - 17 GHz

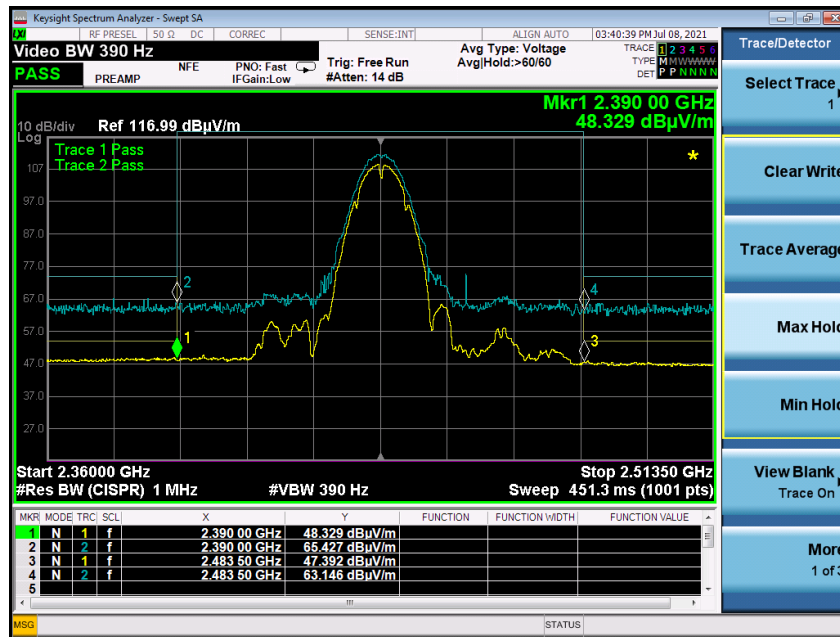


Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Meas. Time (s)	RBW	Meas. Time	Correction (dB)
Peak	21.125 GHz	45.598	74	-28.402	56	Vertical	5	1000000	0	-5.517
Peak	21.737 GHz	45.678	74	-28.322	78	Vertical	5	1000000	0	-5.52
Peak	22.6 GHz	46.603	74	-27.397	291	Vertical	5	1000000	0	-5.325
Peak	25.836 GHz	47.141	74	-26.859	16	Vertical	5	1000000	0	-5.542
Avg	21.125 GHz	32.454	54	-21.546	56	Vertical	5	1000000	0	-5.517
Avg	21.737 GHz	32.739	54	-21.261	78	Vertical	5	1000000	0	-5.52
Avg	22.6 GHz	33.525	54	-20.475	291	Vertical	5	1000000	0	-5.325
Avg	25.836 GHz	34.057	54	-19.943	16	Vertical	5	1000000	0	-5.542
Peak	17.487 GHz	45.917	74	-28.083	128	Horizontal	5	1000000	0	-5.946
Peak	20.72 GHz	49.486	74	-24.514	62	Horizontal	5	1000000	0	-5.439
Peak	23.45 GHz	47.113	74	-26.887	298	Horizontal	5	1000000	0	-4.471
Avg	17.487 GHz	32.858	54	-21.142	128	Horizontal	5	1000000	0	-5.946
Avg	20.72 GHz	41.524	54	-12.476	62	Horizontal	5	1000000	0	-5.439
Avg	23.45 GHz	34.06	54	-19.94	298	Horizontal	5	1000000	0	-4.471

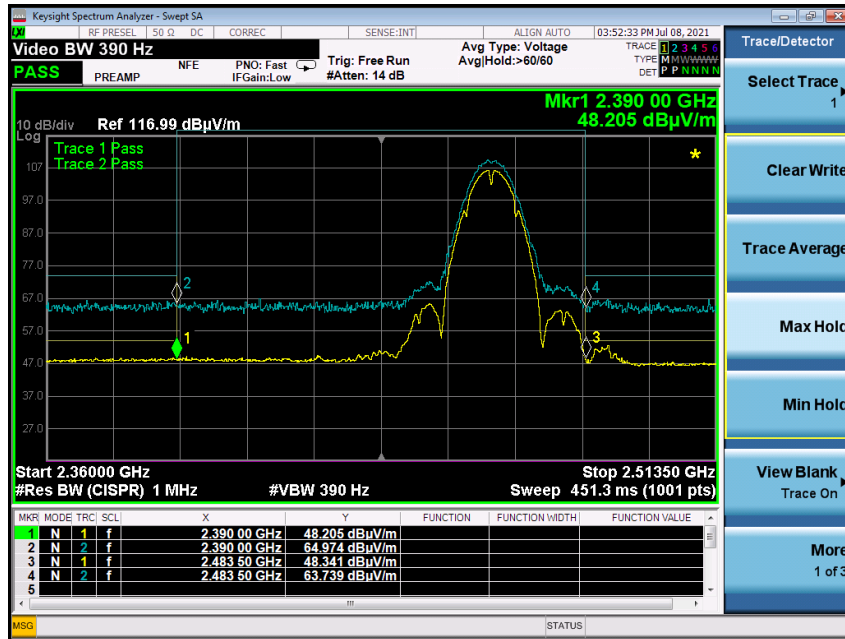
Table 8: Transmitting on Highest Frequency 17 - 26 GHz (worse case)



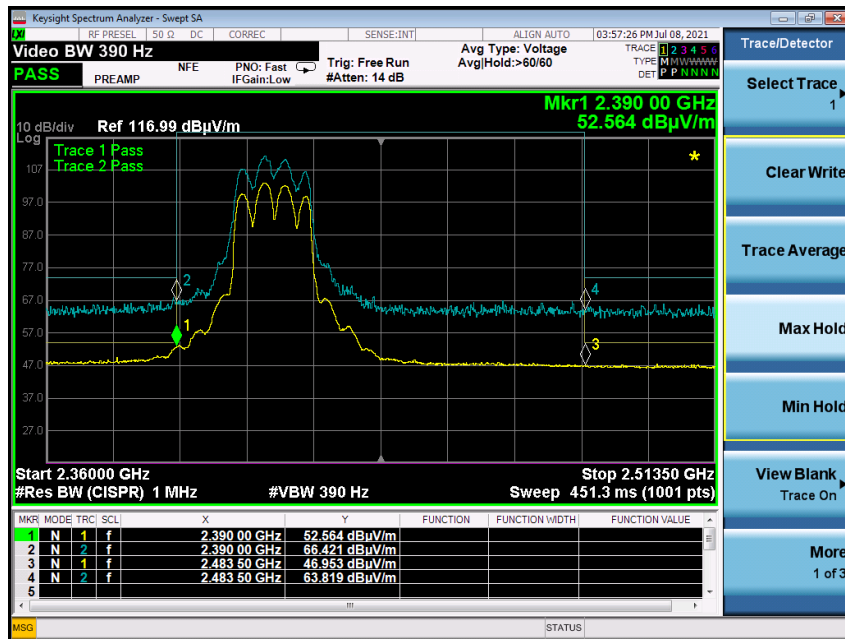
Graph 3: Lower Band Edge - 2412 MHz - b Mode



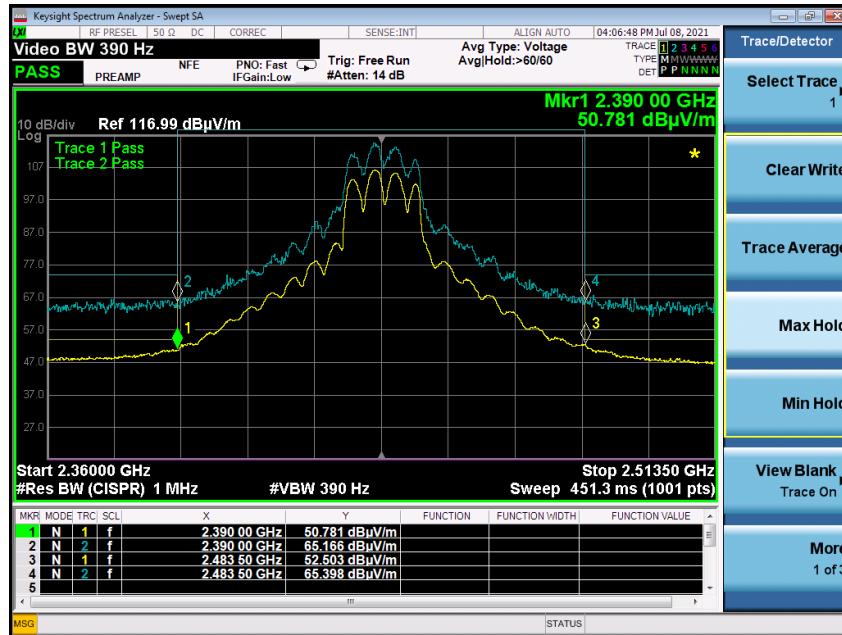
Graph 4: Middle Band Edge - 2437 MHz - b Mode



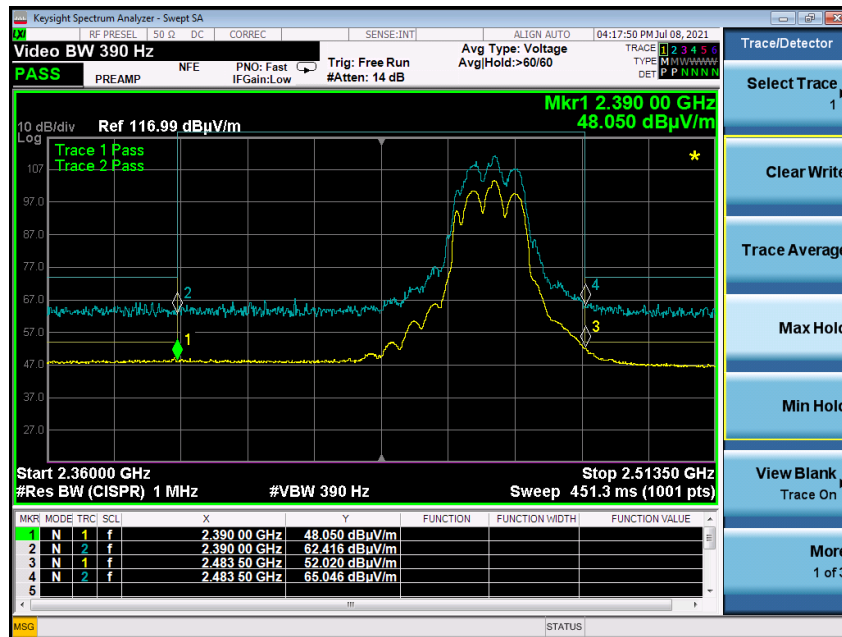
Graph 5: Upper Band Edge - 2462 MHz - b Mode



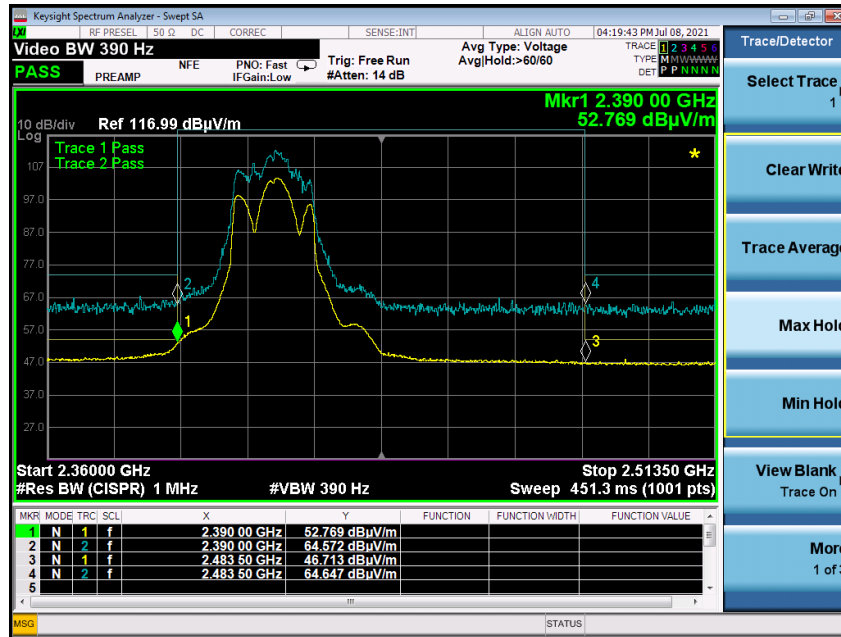
Graph 6: Lower Band Edge - 2412 MHz - g Mode



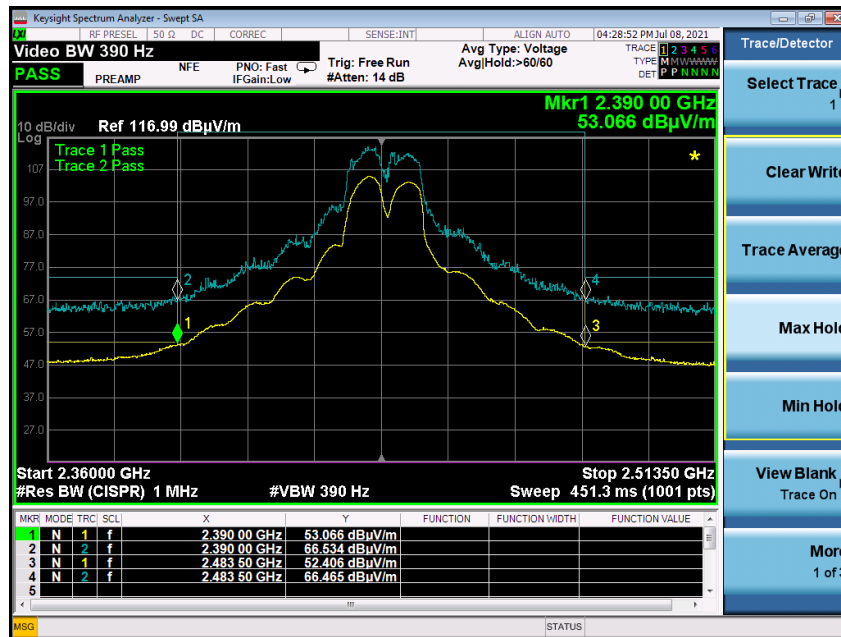
Graph 7: Middle Band Edge - 2437 MHz - g Mode



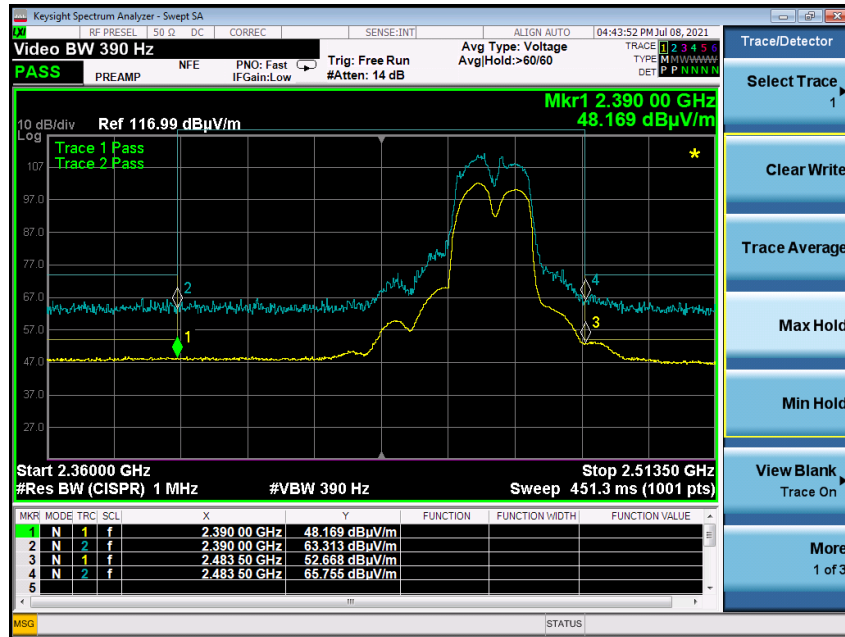
Graph 8: Upper Band Edge - 2462 MHz - g Mode



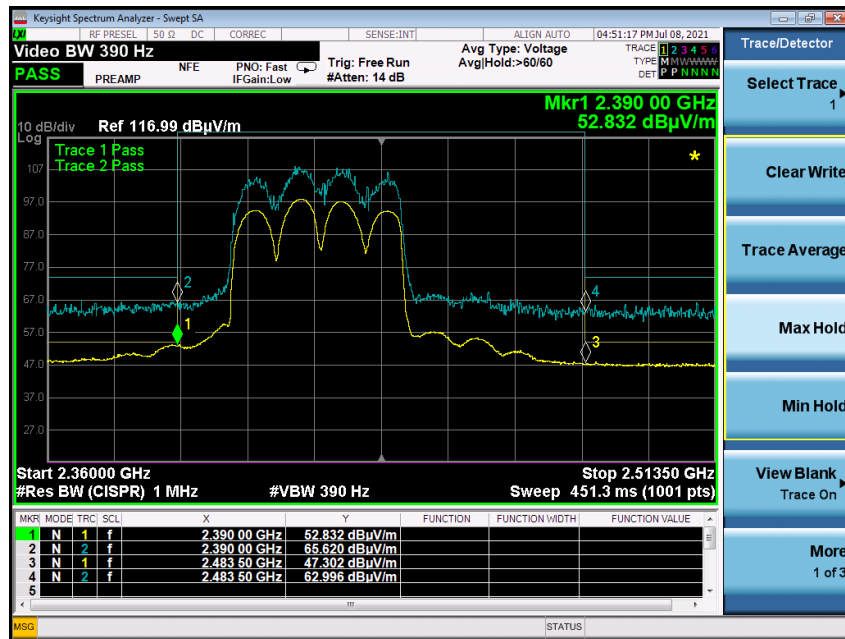
Graph 9: Lower Band Edge - 2412 MHz – n20 Mode



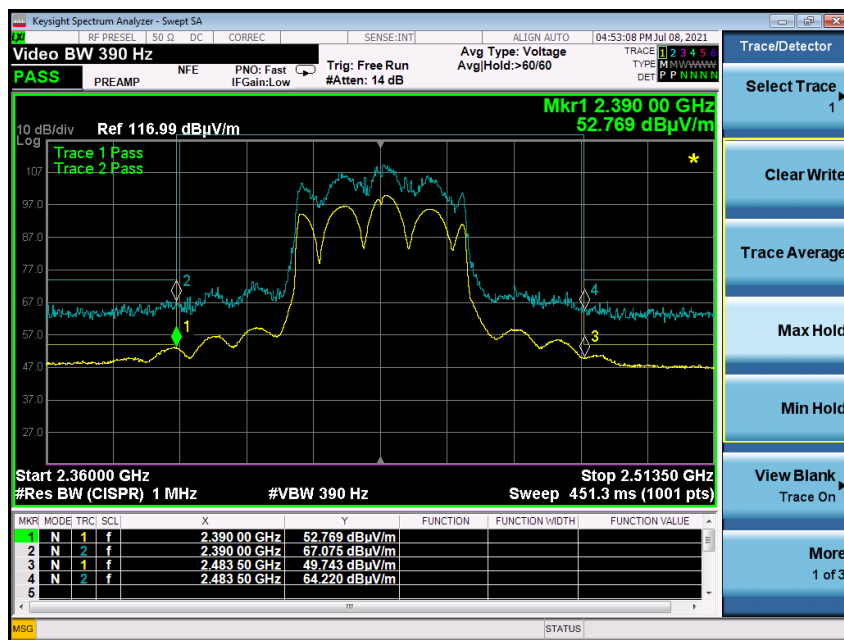
Graph 10: Middle Band Edge - 2437 MHz – n20 Mode



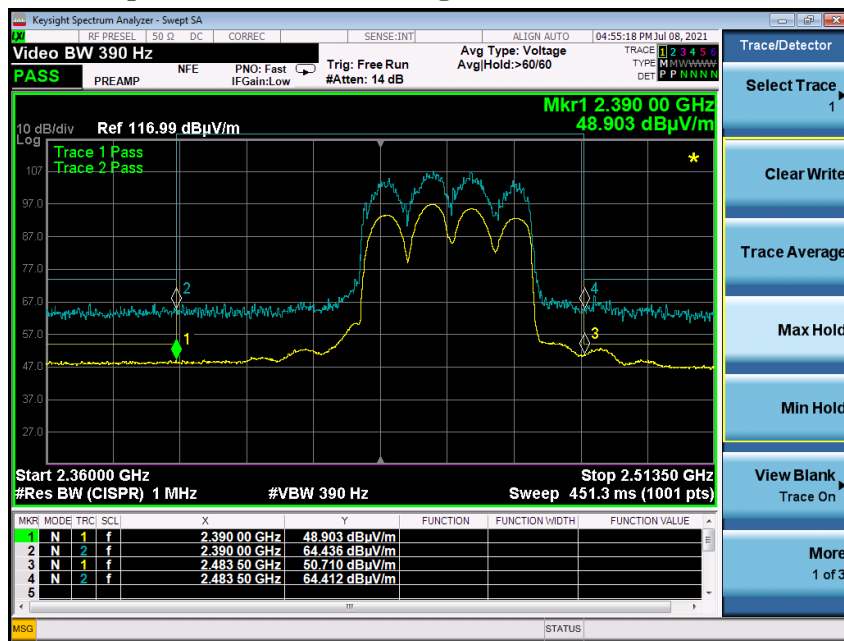
Graph 11: Upper Band Edge - 2463 MHz – n20 Mode



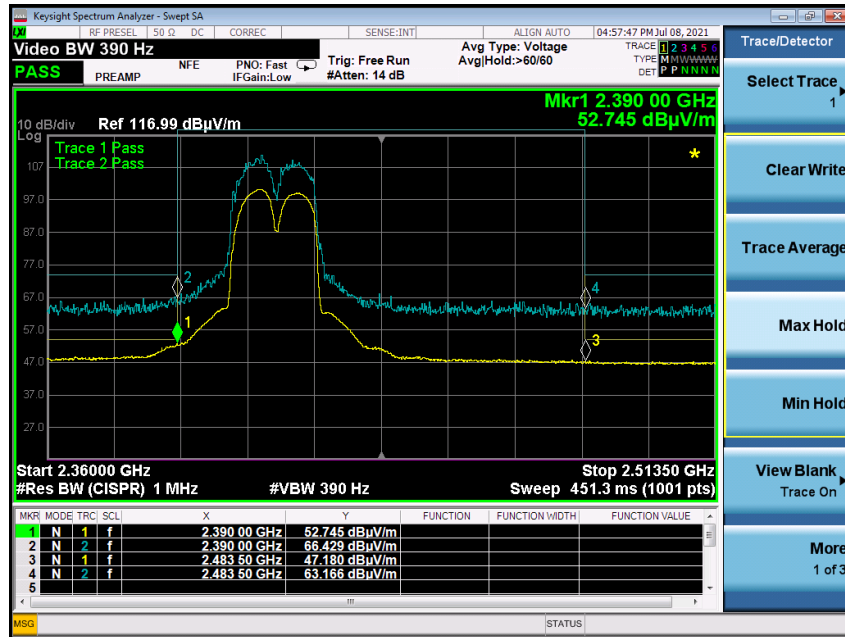
Graph 12: Lower Band Edge - 2422 MHz – n40 Mode



Graph 13: Middle Band Edge - 2437 MHz - n40 Mode



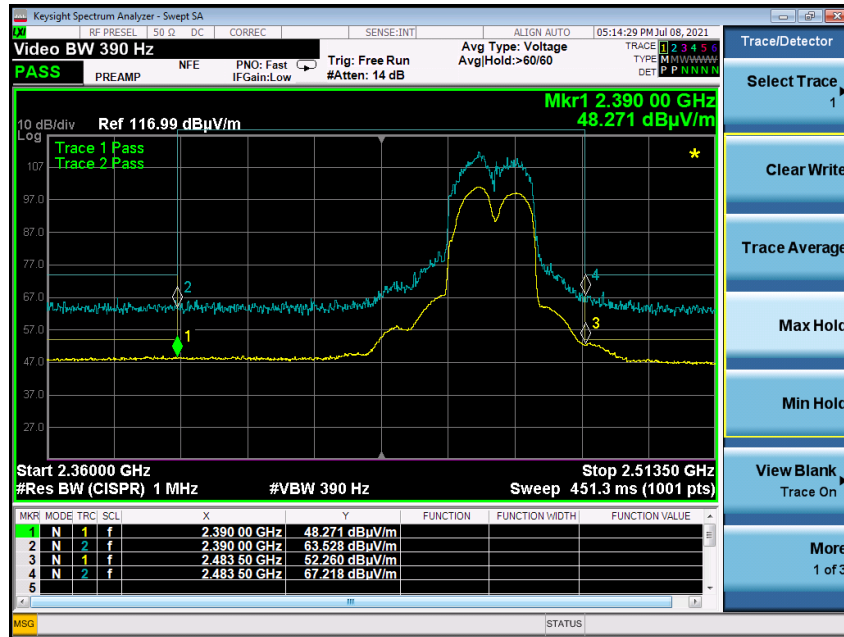
Graph 14: Upper Band Edge - 2452 MHz - n40 Mode



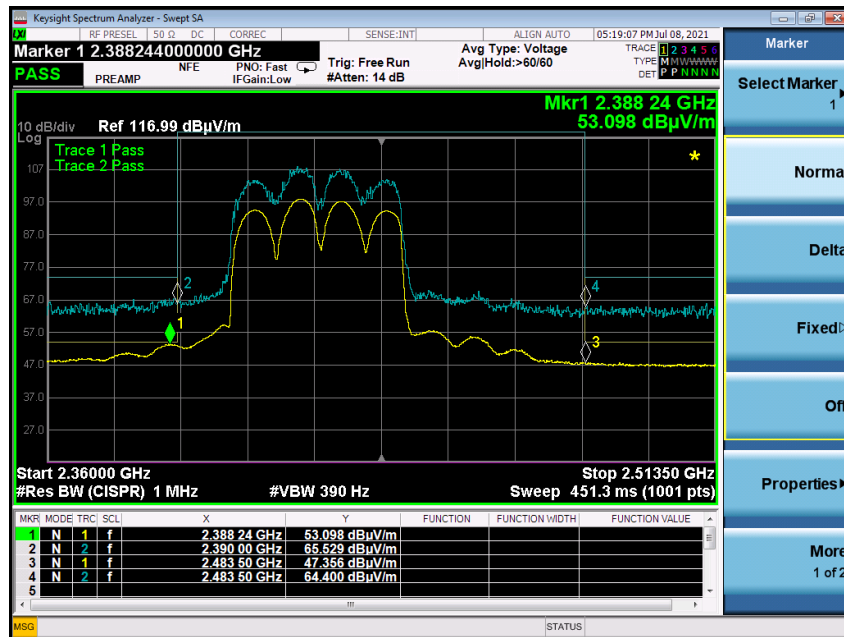
Graph 15: Lower Band Edge - 2412 MHz - ax20 Mode



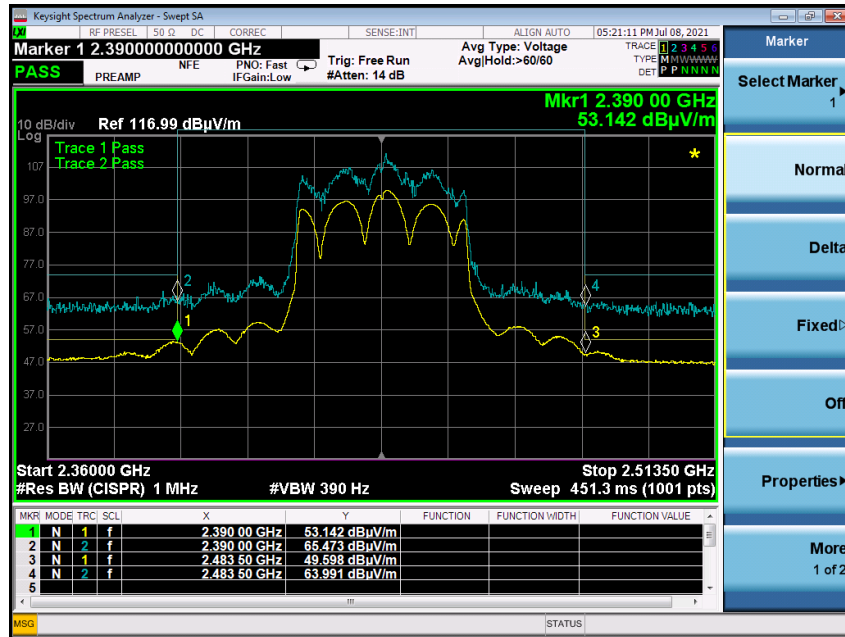
Graph 16: Middle Band Edge - 2437 MHz - ax20 Mode



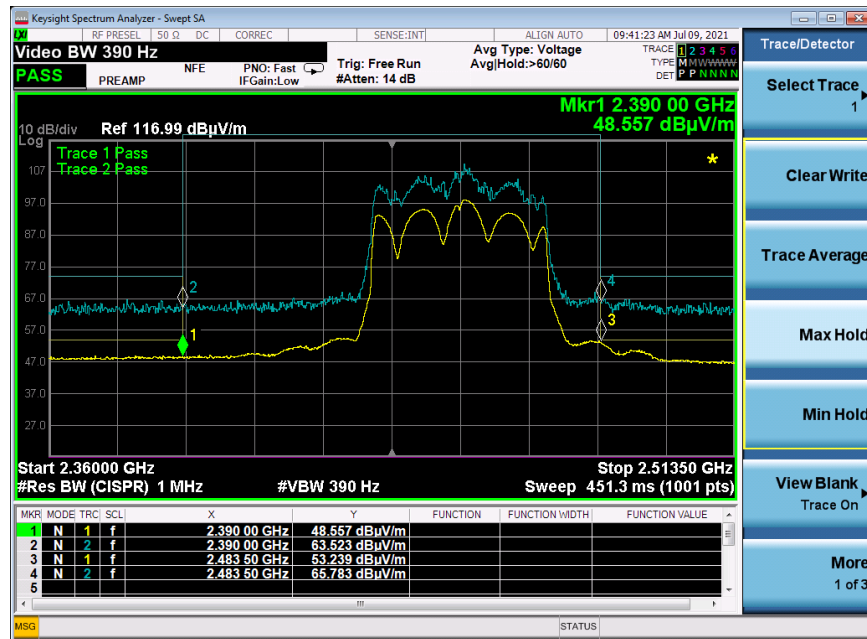
Graph 17: Upper Band Edge - 2462 MHz - ax20 Mode



Graph 18: Lower Band Edge - 2422 MHz - ax40 Mode



Graph 19: Middle Band Edge - 2437 MHz - ax40 Mode



Graph 20: Upper Band Edge - 2452 MHz - 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 4 dBi + Array gain of 3.01 dB which is a total of 7.01 dBi.

Results of this testing are summarized.

Mode	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
b	2412	Mcs0_Nss4	22	-11.38
	2437	Mcs0_Nss4	22.5	-11.46
	2462	Mcs0_Nss4	20	-12.15
g	2412	Mcs0_Nss4	18.5	-13.20
	2437	Mcs0_Nss4	21.5	-10.46
	2462	Mcs0_Nss4	18	-13.60
n 20	2412	Mcs0_Nss4	19	-14.74
	2437	Mcs0_Nss4	22	-11.70
	2462	Mcs0_Nss4	19	-14.76
n 40	2422	Mcs0_Nss4	17	-20.84
	2437	Mcs0_Nss4	17.5	-20.14
	2452	Mcs0_Nss4	15.5	-21.64
ax 20	2412	Mcs0_Nss4	18	-17.88
	2437	Mcs0_Nss4	21	-15.39
	2462	Mcs0_Nss4	18	-17.96
ax 40	2422	Mcs0_Nss4	17	-21.20
	2437	Mcs0_Nss4	17.5	-20.24
	2452	Mcs0_Nss4	15.5	-21.72

Mode	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
b	2412	Mcs0_Nss1	22	-11.38
	2437	Mcs0_Nss1	22.5	-11.46
	2462	Mcs0_Nss1	20	-12.15
g	2412	Mcs0_Nss1	18.5	-13.20
	2437	Mcs0_Nss1	21.5	-10.46
	2462	Mcs0_Nss1	18	-13.60
n 20	2412	Mcs0_Nss1	19	-14.74
	2437	Mcs0_Nss1	22	-11.70
	2462	Mcs0_Nss1	19	-14.76
n 40	2422	Mcs0_Nss1	17	-20.84
	2437	Mcs0_Nss1	17.5	-20.14
	2452	Mcs0_Nss1	15.5	-21.64
ax 20	2412	Mcs0_Nss1	18	-17.88
	2437	Mcs0_Nss1	21	-15.39
	2462	Mcs0_Nss1	18	-17.96
ax 40	2422	Mcs0_Nss1	17	-21.20
	2437	Mcs0_Nss1	17.5	-20.24
	2452	Mcs0_Nss1	15.5	-21.72

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 --