UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-UFWIFI6
IC ID	6545A-UFWIFI6
Equipment Under Test	UF-WiFi6
Test Report Serial Number	TR6540_02
Date of Test(s)	30 September; 1, 4, 6, and 11 October 2021
Report Issue Date	15 October 2021

Test Specification	Applicant
47 CFR FCC Part 15, Subpart C	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.

NVLAP TESTING ilac-MRA

NVLAP LAB CODE 600241-0

Certification of Engineering Report

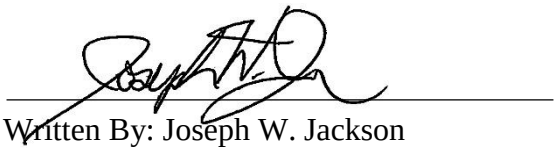
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart C. This report may be reproduced in full. Partial reproduction of this report may only be made with 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	UFiber
Model Number	UF-WiFi6
FCC ID	SWX-UFWIFI6
IC ID	6545A-UFWIFI6

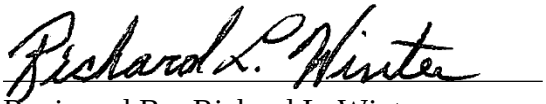
On this 15th day of October 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

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: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	15 October 2021
02	Amended Sections 5.1, 5.3, 5.4 and 5.6	18 October 2021

Table of Contents

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	UFiber
Model Number	UF-WiFi6
Serial Number	68D79A1FA44A
Dimensions (cm)	14.1 x 14.2 x 3.2

2.2 Description of EUT

The UF-WiFi6 GPON CPE is a point-to-multipoint WiFi 6 device that provides 2.4 Gbps downstream rate and 1.2 Gbps upstream rate. The UF-WiFi6 has 4 GbE RJ45 LAN ports and 1 GPON WAN port for connection the local fiber line. The UF-WiFi6 has a 2.4 GHz (2x2) WiFi transmitter and a 5 GHz (2x2) WiFi transmitter. The UF-WiFi6 can be powered from a USB-C power adapter or a 24V PoE power adapter.

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: UFiber MN: UF-WiFi6 (Note 1) SN: 68D79A1FA44A	WiFi CPE	See Section 2.4
BN: Ubiquiti MN: GP-M015-QC SN: N/A	USB-C Power Adapter	See Section 2.4
BN: Ubiquiti MN: POE-24-12W-G-WH SN: N/A	PoE Power Adapter	Un-Shielded Cat 5e cable (Note 2)
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	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
USB-C AC Mains	1	3 conductor power cord/80 cm
PoE AC Mains	1	3 conductor power cord/80 cm
PoE	1	Un-Shielded Cat 5e Cable/> 3 meters
Data	1	Un-Shielded Cat 5e Cable/> 3 Meters

2.5 Operating Environment

Power Supply	120 Vac UBS-C Powered or 120 Vac to 24 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	21.1 – 23.5 °C
Humidity	23.1 – 31.9 %
Barometric Pressure	1019 mBar

2.6 Operating Modes

The UF-WiFi6 was connected to a personal computer laptop and tested using test software in order to enable to 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 were investigated. All measurements are reported with the worst-case mode (802.11n) 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

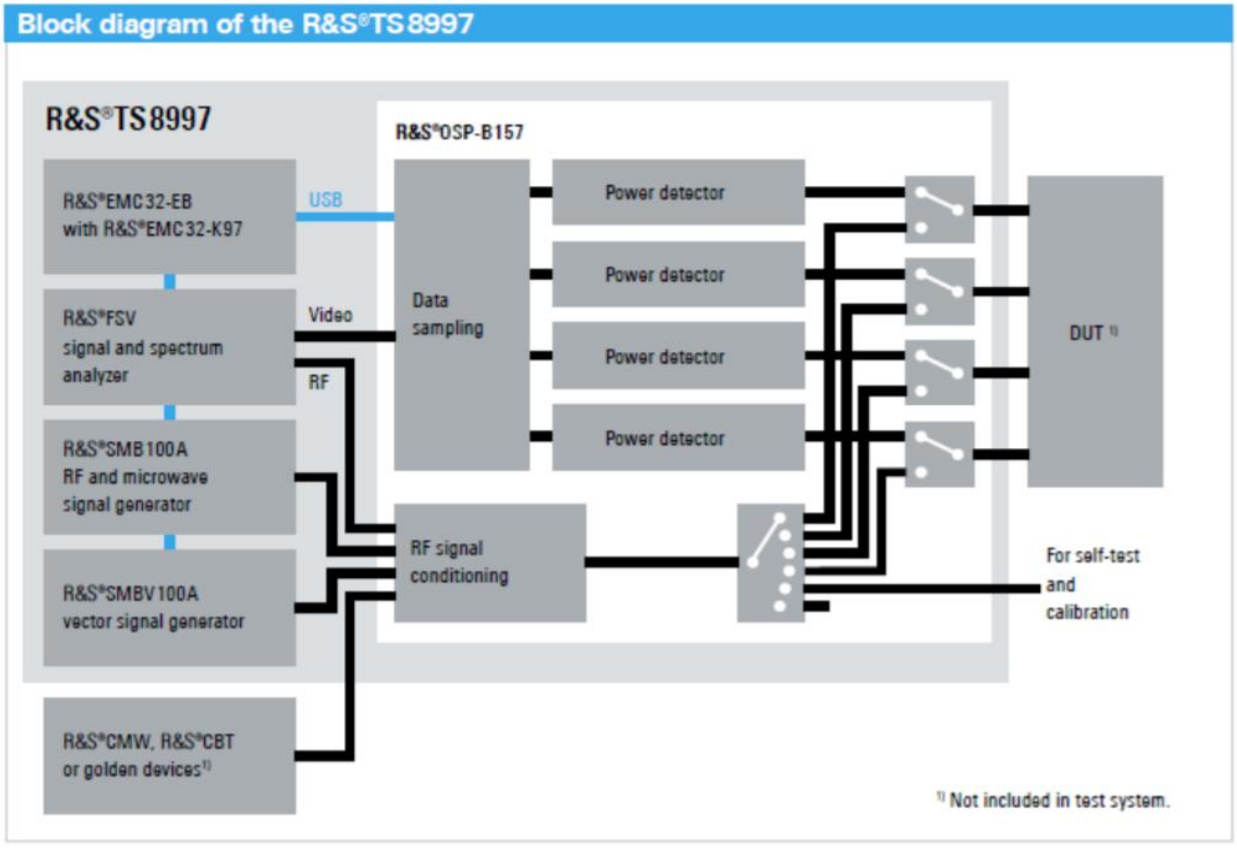


Diagram 1: Test Configuration Block Diagram

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 0-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	3/17/2022
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

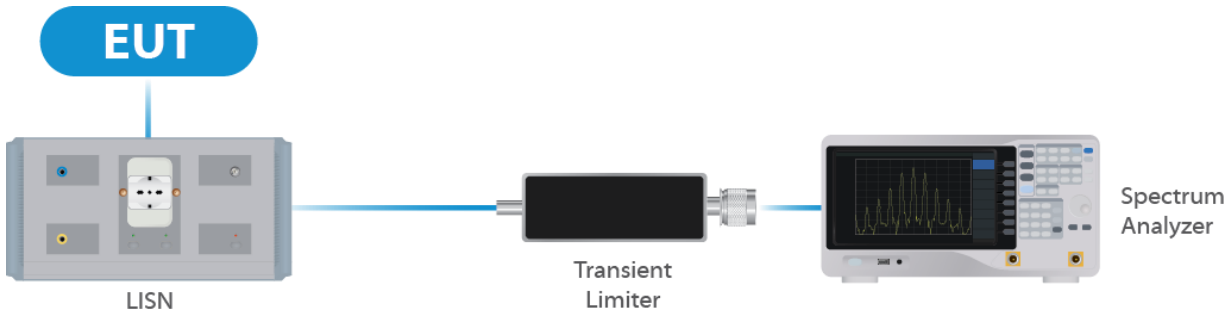


Figure 1: Conducted Emissions Test

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	10/23/2021
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	10.24/2021
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

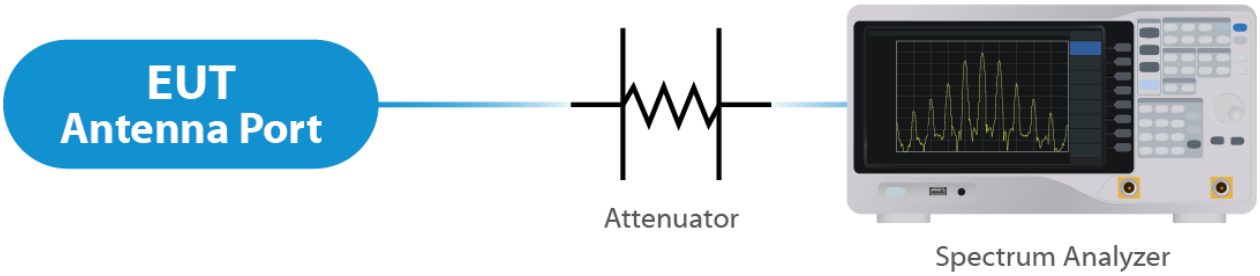


Figure 2: Direct Connect at the Antenna Port Test

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	10/7/2021	10/7/2022
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3062	8/28/2020	8/27/2022
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3071	5/19/2020	5/19/2022
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	10/7/2021	10/7/2022
Test Software	UCL	Revision 1	UCL-3108	N/A	N/A

Table 3: List of equipment used for Radiated Emissions

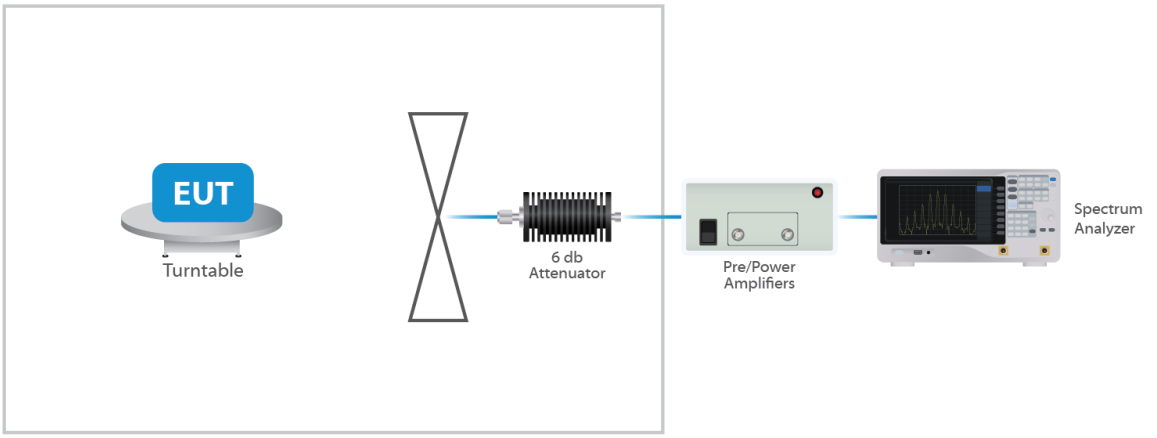


Figure 3: Radiated Emissions Test

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 (± 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 is 1 dBi. The antenna is not user replaceable. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01.

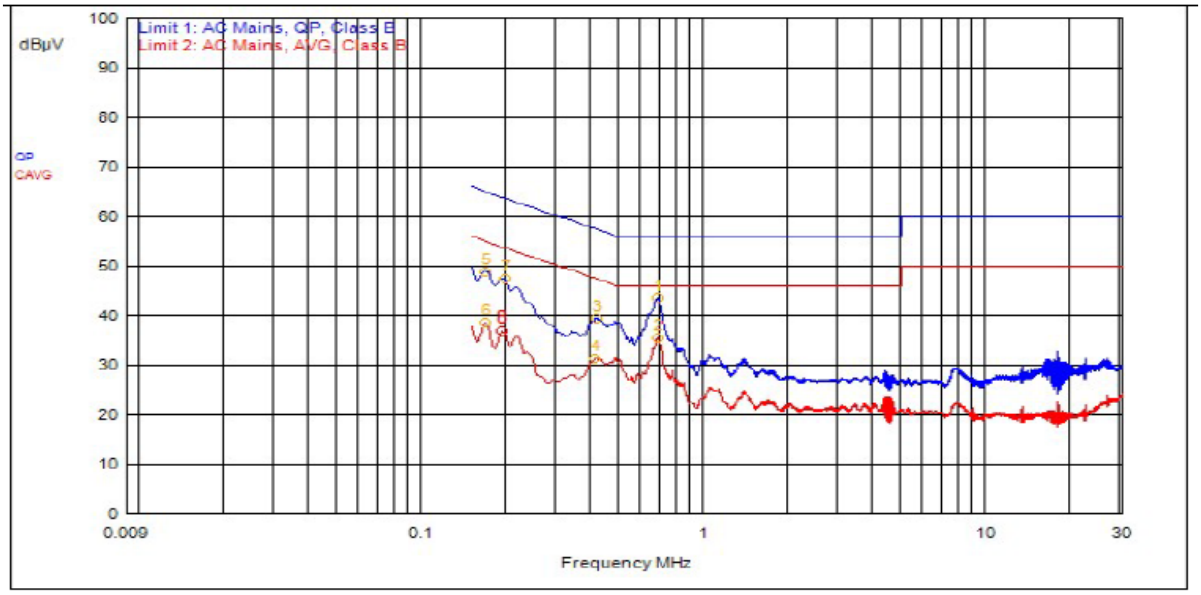
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT ≤ 4;
For PSD measurements Array Gain = 10 log(NANT/NSS) dB = 3.01dB

Results

The EUT complied with the specification

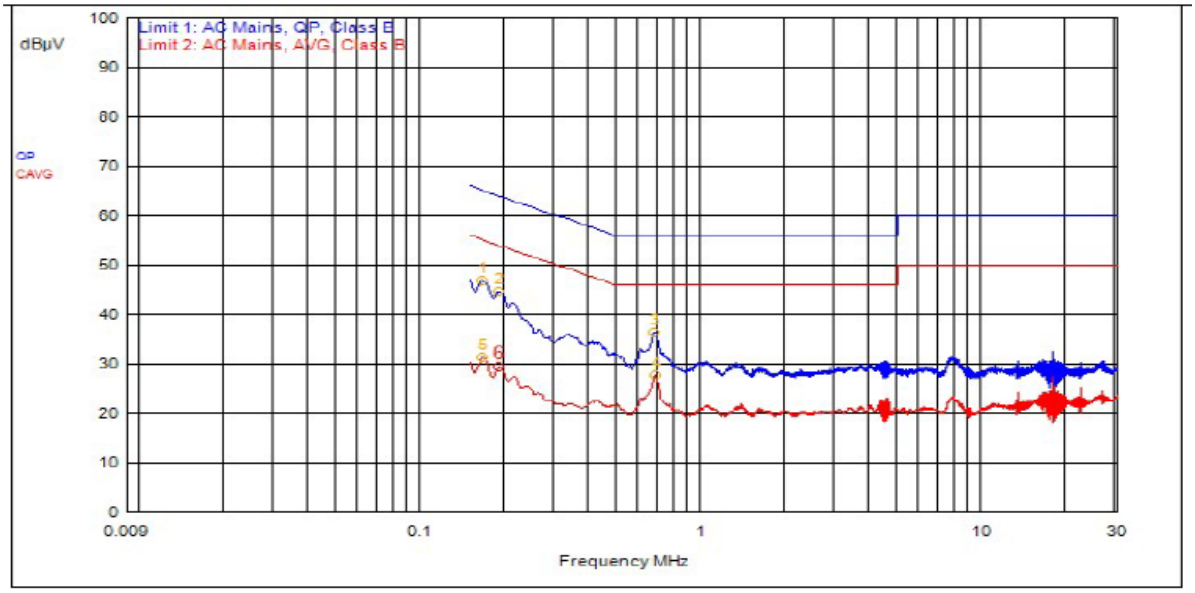
5.2 Conducted Emissions at Mains Ports Data

5.2.1 USB-C Power Supply



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	684,000kHz	12.4	0.0		QPeak	31.2	43.6	56.0	-12.4		
5	168,000kHz	12.4	0.0		QPeak	36.7	49.0	65.1	-16.0		
7	195,000kHz	12.4	0.0		QPeak	35.0	47.4	63.8	-16.4		
3	414,000kHz	12.4	0.0		QPeak	27.1	39.5	57.6	-18.1		
2	678,000kHz	12.4	0.0		C_AVG	23.1	35.5			46.0	-10.5
4	408,000kHz	12.4	0.0		C_AVG	19.1	31.4			47.7	-16.2
6	168,000kHz	12.4	0.0		C_AVG	26.3	38.7			55.1	-16.4
8	192,000kHz	12.4	0.0		C_AVG	24.6	37.0			53.9	-17.0

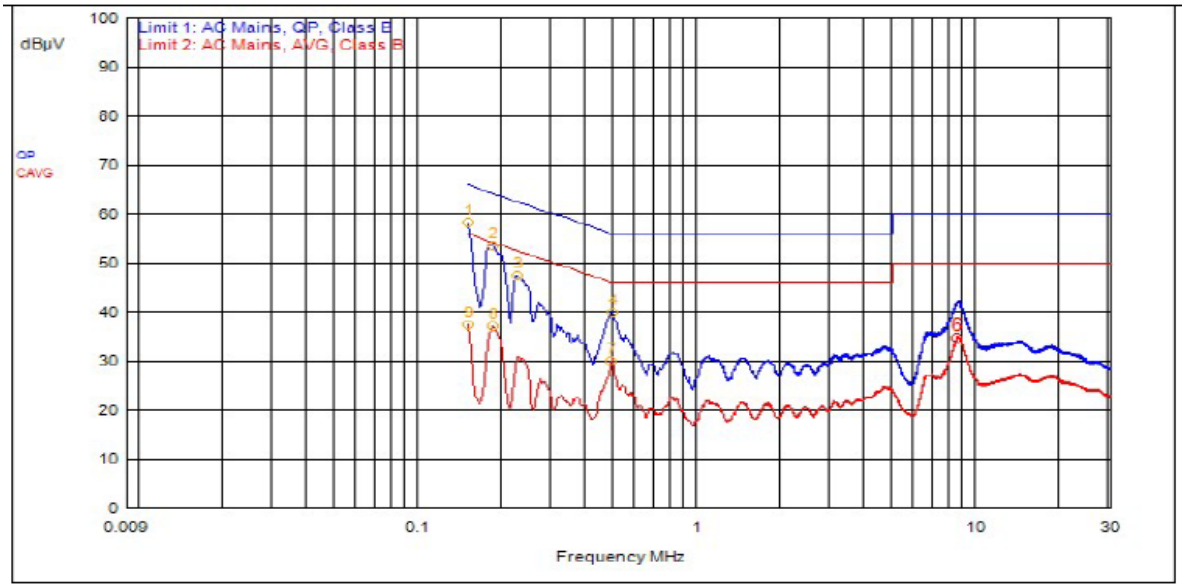
Graph 1: Conducted Emissions Plot – Line 1



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	165,000kHz	12.4	0.0		QPeak	34.5	46.9	65.2	-18.3		
2	189,000kHz	12.4	0.0		QPeak	32.2	44.6	64.1	-19.5		
3	672,000kHz	12.4	0.0		QPeak	23.9	36.3	56.0	-19.7		
4	678,000kHz	12.4	0.0		C_AVG	15.3	27.7			46.0	-18.3
5	165,000kHz	12.4	0.0		C_AVG	19.1	31.5			55.2	-23.7
6	189,000kHz	12.4	0.0		C_AVG	17.0	29.4			54.1	-24.7

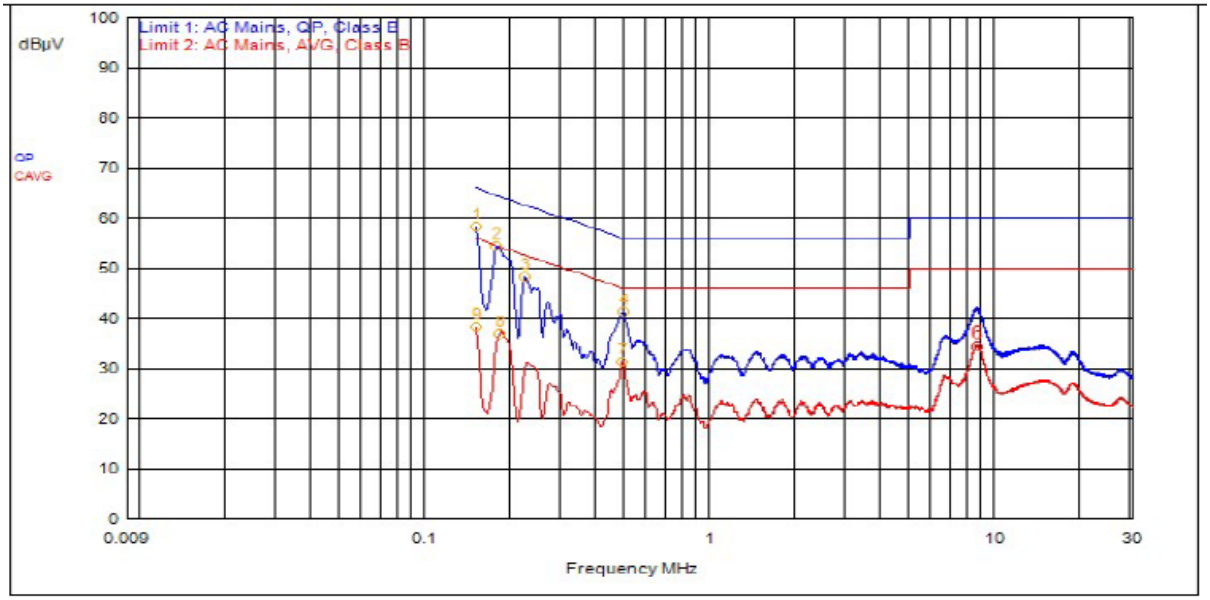
Graph 2: Conducted Emissions Plot – Neutral

5.2.2 PoE Power Supply



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	150,000kHz	12.4	0.0		QPeak	45.8	58.2	66.0	-7.8		
2	183,000kHz	12.4	0.0		QPeak	41.4	53.7	64.3	-10.6		
3	225,000kHz	12.4	0.0		QPeak	35.2	47.6	62.6	-15.0		
4	492,000kHz	12.4	0.0		QPeak	27.6	40.0	56.1	-16.1		
6	8.439MHz	12.3	0.2		C_AVG	22.2	34.8			50.0	-15.2
7	486,000kHz	12.4	0.0		C_AVG	17.5	30.0			46.2	-16.3
8	183,000kHz	12.4	0.0		C_AVG	24.9	37.3			54.3	-17.1
9	150,000kHz	12.4	0.0		C_AVG	25.2	37.6			56.0	-18.4

Graph 3: Conducted Emissions Plot – Line 1



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	150,000kHz	12.4	0.0		QPeak	45.9	58.3	66.0	-7.7		
2	177,000kHz	12.4	0.0		QPeak	42.0	54.4	64.6	-10.2		
3	222,000kHz	12.4	0.0		QPeak	35.9	48.3	62.7	-14.4		
4	492,000kHz	12.4	0.0		QPeak	29.0	41.4	56.1	-14.7		
6	8.583MHz	12.3	0.2		C_AVG	21.8	34.4			50.0	-15.6
7	486,000kHz	12.4	0.0		C_AVG	18.9	31.4			46.2	-14.9
8	180,000kHz	12.4	0.0		C_AVG	24.6	37.0			54.5	-17.5
9	150,000kHz	12.4	0.0		C_AVG	25.9	38.2			56.0	-17.8

Graph 4: Conducted Emissions Plot – Neutral

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	13.2	9.1
	2437	32.9	11.2
	2462	31.7	9.9
g	2412	16.4	16.4
	2437	31.5	15.2
	2462	21.1	16.4
n 20	2412	17.6	17.7
	2437	32.3	17.7
	2462	18.3	17.7
n 40	2422	36.0	31.7
	2437	36.3	36.4
	2452	36.5	25.5

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 28.63 dBm or 729.46 mW. The limit is 30 dBm or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 1 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
CCK 20	2412	Mcs0	21.0	26.14	27.14
	2417	Mcs0	21.5	26.53	27.53
	2422	Mcs0	23.0	27.72	28.72
	2427	Mcs0	23.0	27.74	28.74
	2432	Mcs0	24.0	28.52	29.52
	2437	Mcs0	24.5	28.51	29.51
	2447	Mcs0	25.0	28.56	29.56
	2452	Mcs0	25.0	28.63	29.63
	2457	Mcs0	25.0	28.63	29.63
	2462	Mcs0	24.5	28.62	29.62
OFDM 20	2412	Mcs0	20.0	22.71	23.71
	2417	Mcs0	21.0	23.79	24.79
	2422	Mcs0	22.0	24.74	25.75
	2427	Mcs0	23.0	25.83	26.83
	2432	Mcs0	24.5	26.90	27.90
	2437	Mcs0	26.0	28.34	29.34
	2452	Mcs0	25.0	27.40	28.40
	2457	Mcs0	25.0	27.31	28.31
	2462	Mcs0	23.5	26.30	27.30
HT 20	2412	Mcs0	19.0	21.65	22.65
	2417	Mcs0	21.0	23.72	24.72
	2422	Mcs0	22.0	24.64	25.64
	2427	Mcs0	23.5	26.13	27.13
	2432	Mcs0	24.5	26.87	27.87
	2437	Mcs0	26.0	28.32	29.32
	2447	Mcs0	25.0	27.37	28.37
	2452	Mcs0	25.0	27.30	28.30

	2457	Mcs0	25.0	27.23	28.23
	2462	Mcs0	22.5	25.34	28.34
HT 40	2422	Mcs0	18.5	21.94	21.94
	2437	Mcs0	20.5	24.28	24.28
	2452	Mcs0	20.5	23.34	24.34

Result

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

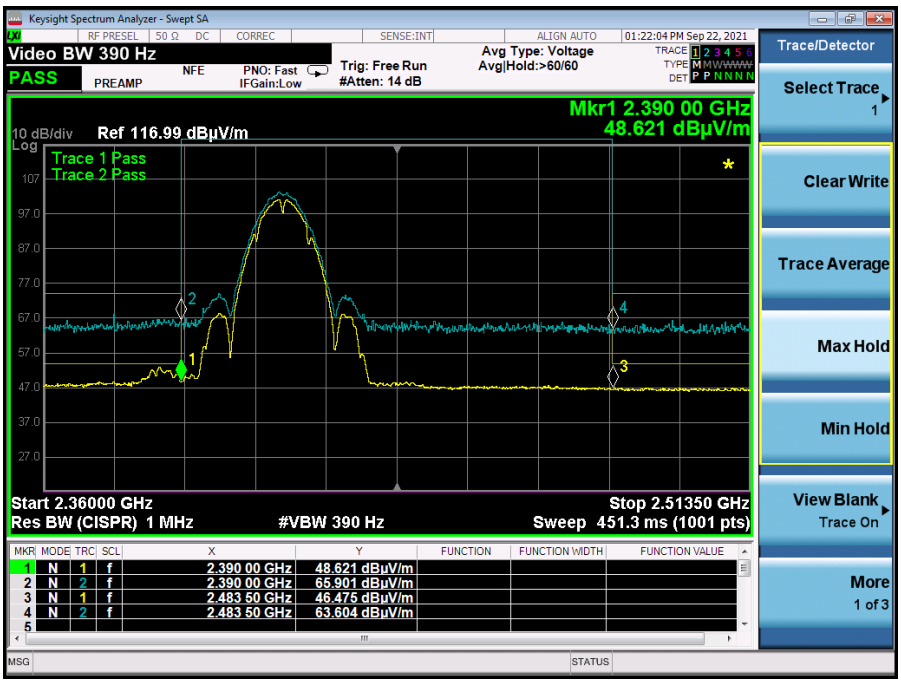
5.5.1 Conducted Spurious Emissions

The frequency range 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 table show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown below are plot(s) with the EUT tuned to the upper and lower channels. These demonstrate compliance with the provisions of this section at the band edges.

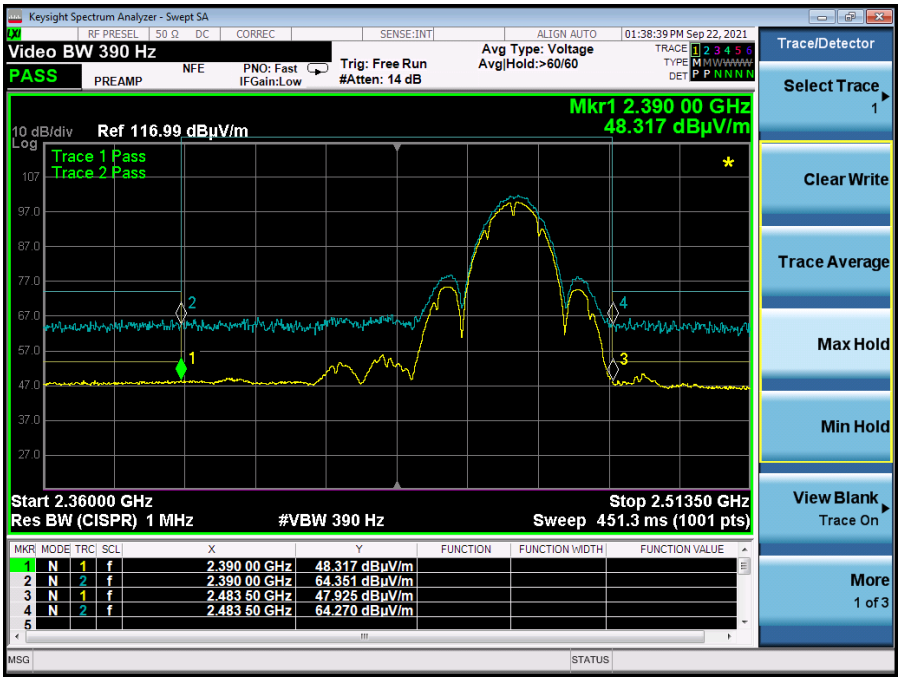
The emissions must be attenuated 30 dB below the highest power spectral density level measured within the authorized band as measured with a 100 kHz RBW.

Result

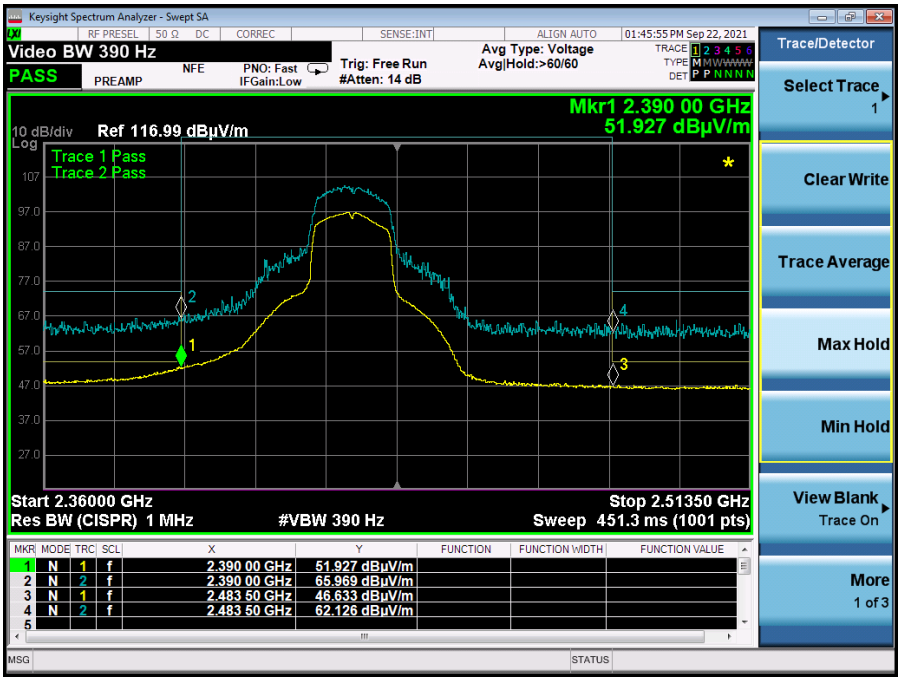
Conducted spurious emissions were attenuated 30 dB or more below the fundamental; therefore, the EUT complies with the specification.



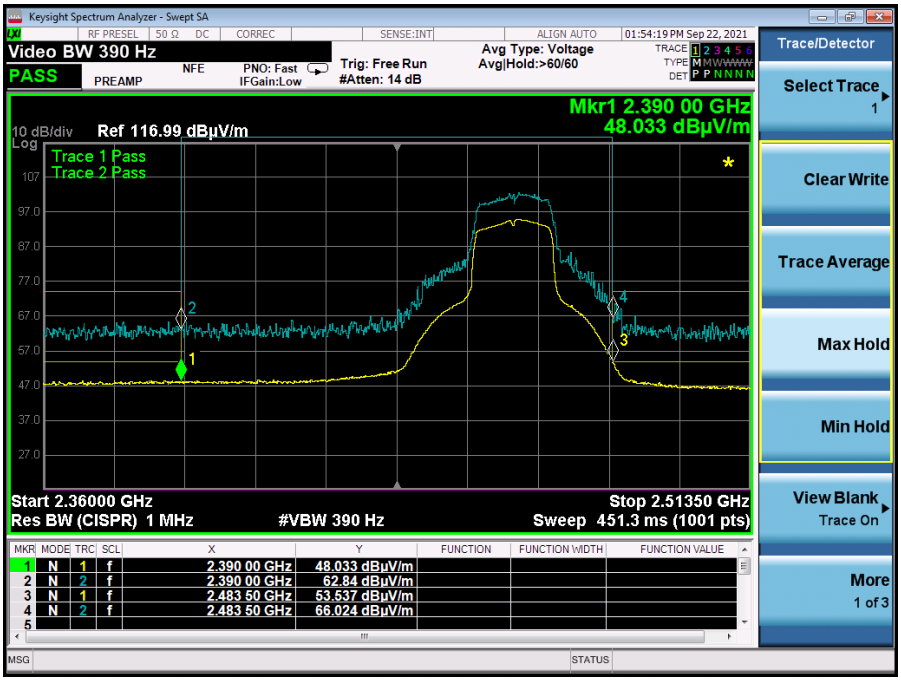
Graph 5: Lower Band Edge Plot CCK20



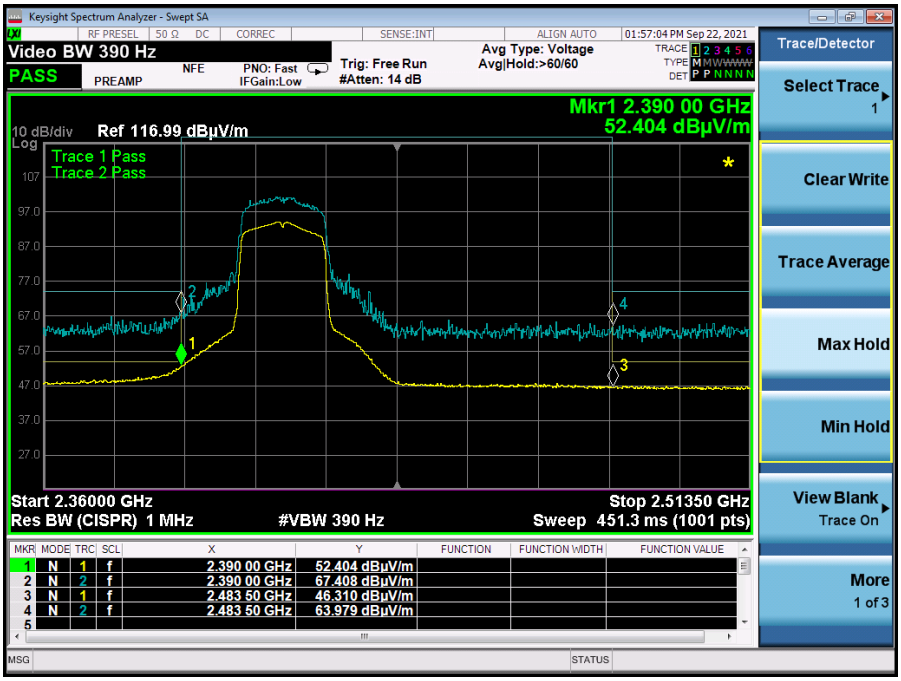
Graph 6: Upper Band Edge Plot CCK20



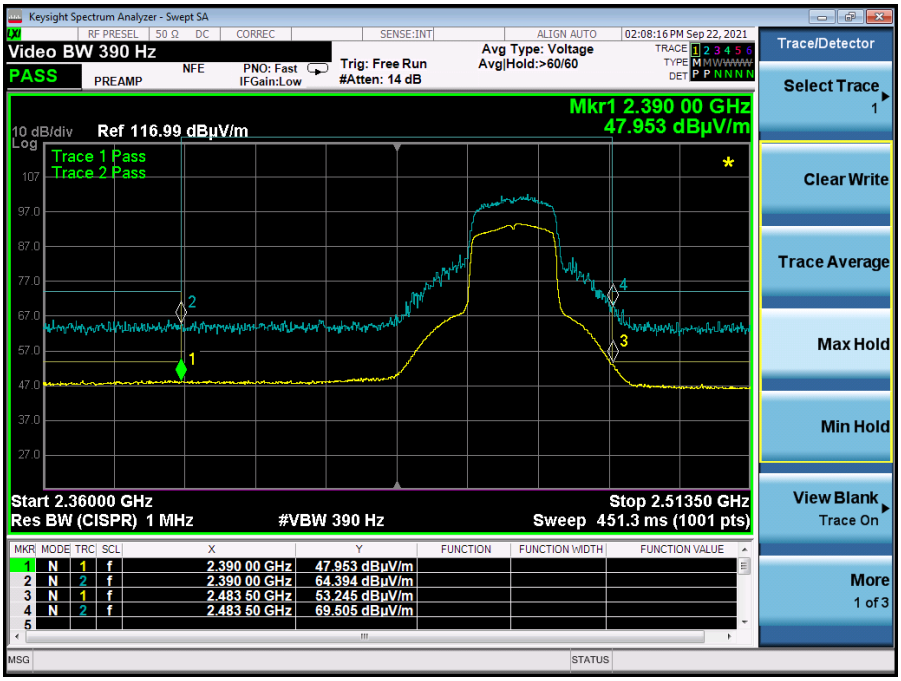
Graph 7: Lower Band Edge Plot OFDM 20



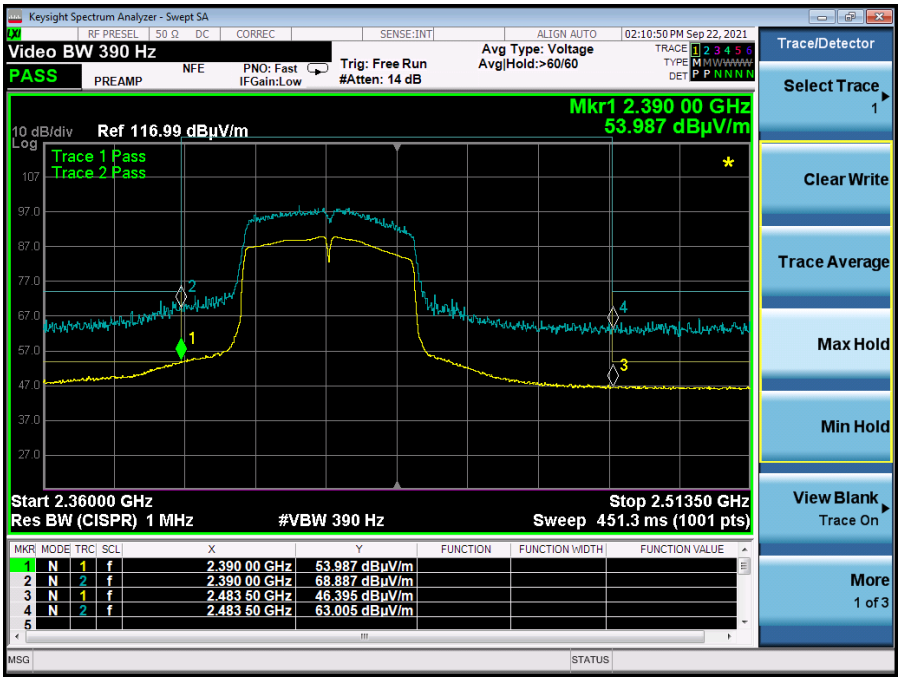
Graph 8: Upper Band Edge Plot OFDM 20



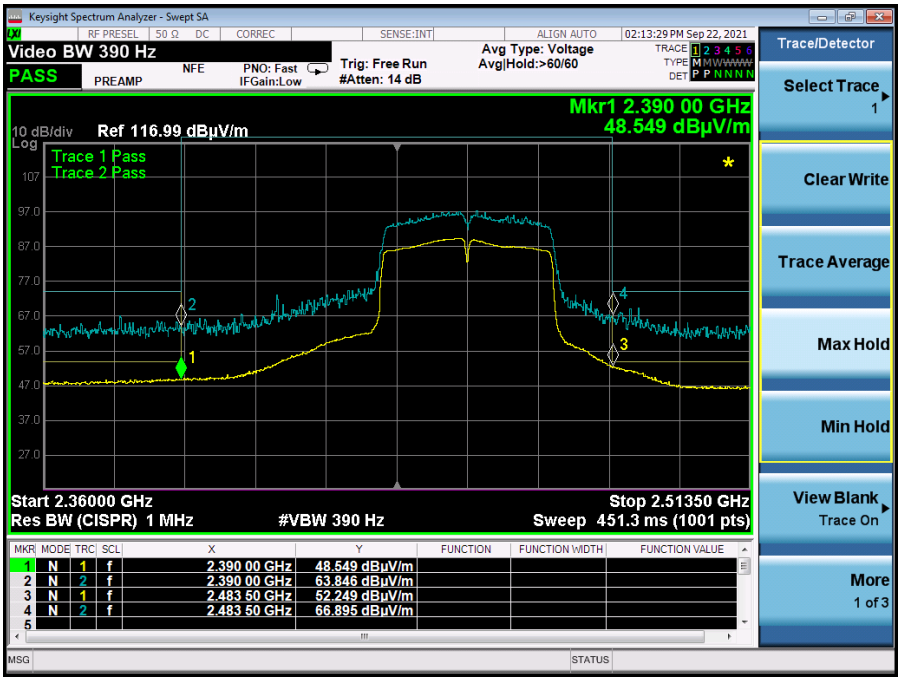
Graph 9: Lower Band Edge Plot HT 20



Graph 10: Upper Band Edge Plot HT 20



Graph 11: Lower Band Edge Plot HT 40



Graph 12: Upper Band Edge Plot HT 40

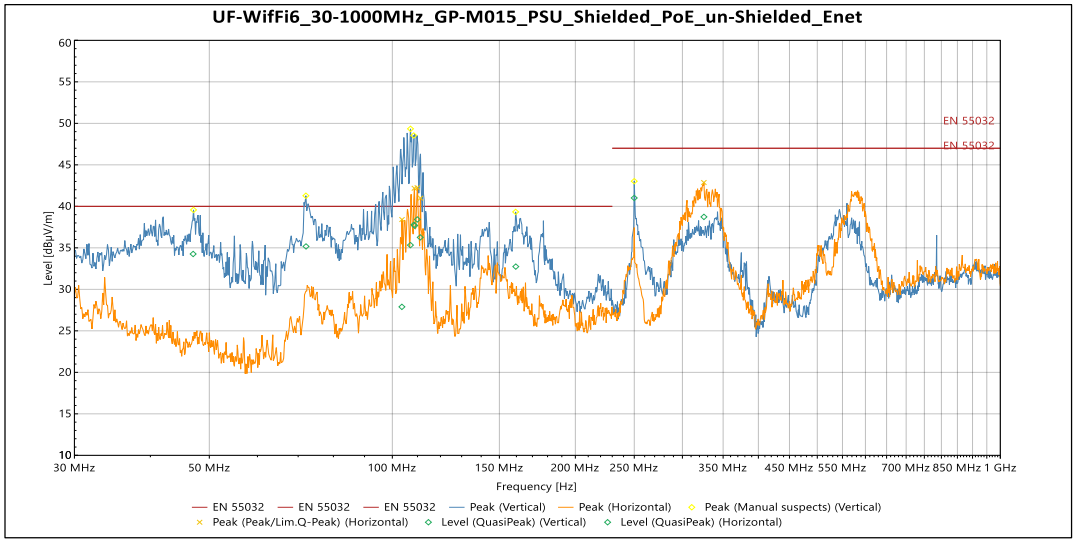
5.5.2 Radiated Spurious Emissions in the Restricted Bands of §15.205

The frequency range 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 bans 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-Amplifier Gain, and is added to the Receiver reading.

Result

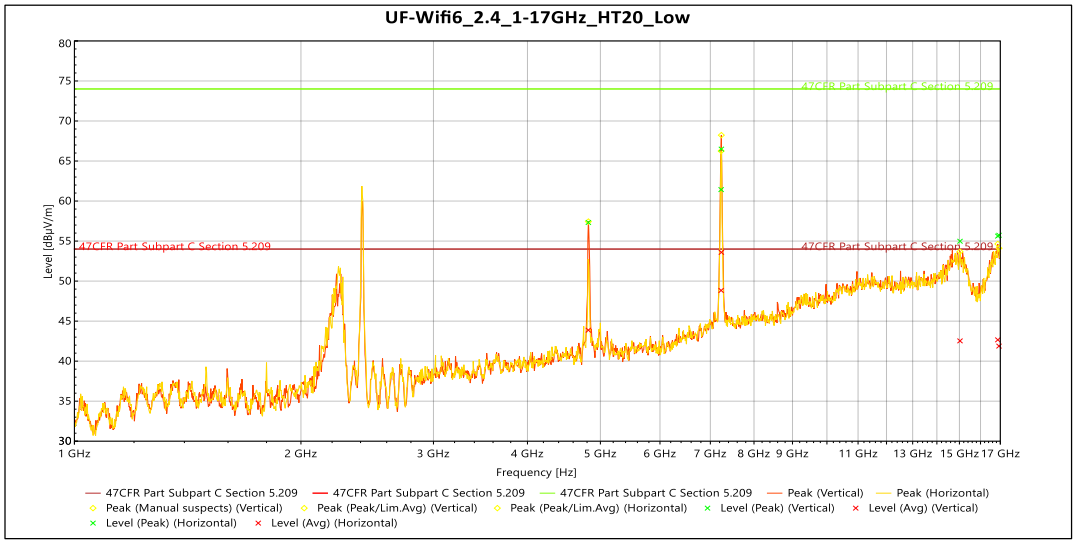
All emissions in the restricted bands of §15.205 met the limits specified in §15.209; therefore, the EUT complies with the specification.



QuasiPeak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
47.031 MHz	34.265	40	-5.735	187	1.136	Vertical	-6.262
72.117 MHz	35.17	40	-4.83	150	2.034	Vertical	-12.408
107.1 MHz	35.333	40	-4.667	306	1.134	Vertical	-8.768
108.53 MHz	37.782	40	-2.218	85	2.038	Vertical	-8.915
159.61 MHz	32.744	40	-7.256	260	1.315	Vertical	-11.98
249.97 MHz	41.011	47	-5.989	298	1.136	Vertical	-7.395
103.69 MHz	27.888	40	-12.112	106	3.304	Horizontal	-8.315
108.82 MHz	37.669	40	-2.331	178	2.782	Horizontal	-8.98
109.94 MHz	38.424	40	-1.576	180	2.779	Horizontal	-9.2
111.15 MHz	36.256	40	-3.744	183	2.742	Horizontal	-9.313
325.46 MHz	38.726	47	-8.274	205	1	Horizontal	-5.885

Table 4: Radiated Emissions 30 – 1000 MHz



Peak

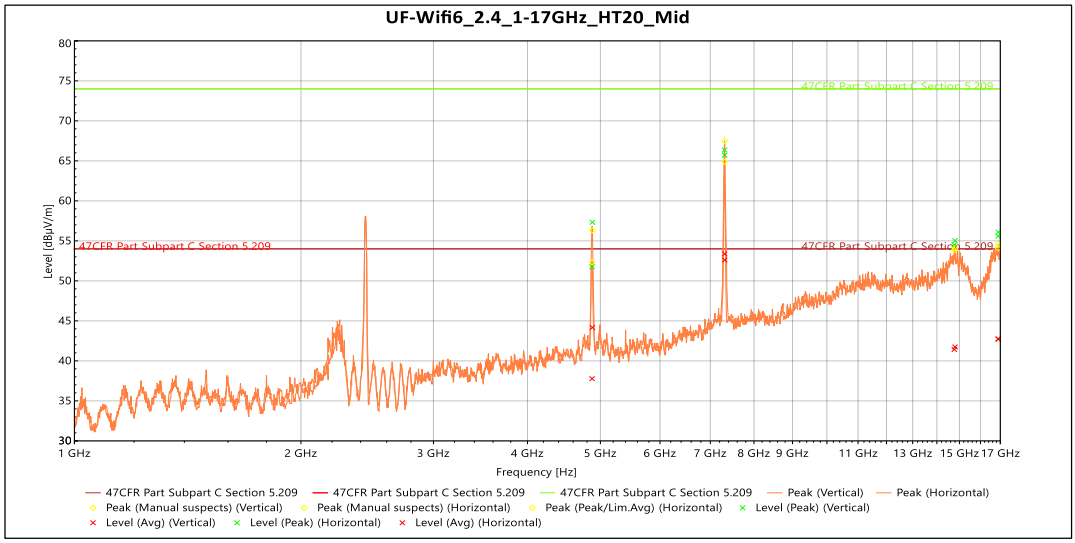
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8193 GHz	57.319	74	-16.681	154	1.5	Vertical	-8.61

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
7.24 GHz	66.489	74	-7.511	51	2.15	Vertical	-2.372
16.87 GHz	55.623	74	-18.377	10	2.15	Vertical	11.989
7.2346 GHz	61.431	74	-12.569	63	2.65	Horizontal	-2.216
15.027 GHz	54.977	74	-19.023	335	1.5	Horizontal	10.286
16.932 GHz	55.732	74	-18.268	150	1.643	Horizontal	10.869

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8193 GHz	43.865	54	-10.135	154	1.5	Vertical	-8.61
7.24 GHz	53.585	54	-0.415	51	2.15	Vertical	-2.372
16.87 GHz	42.664	54	-11.336	10	2.15	Vertical	11.989
7.2346 GHz	48.828	54	-5.172	63	2.65	Horizontal	-2.216
15.027 GHz	42.534	54	-11.466	335	1.5	Horizontal	10.286
16.932 GHz	41.881	54	-12.119	150	1.643	Horizontal	10.869

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



Peak

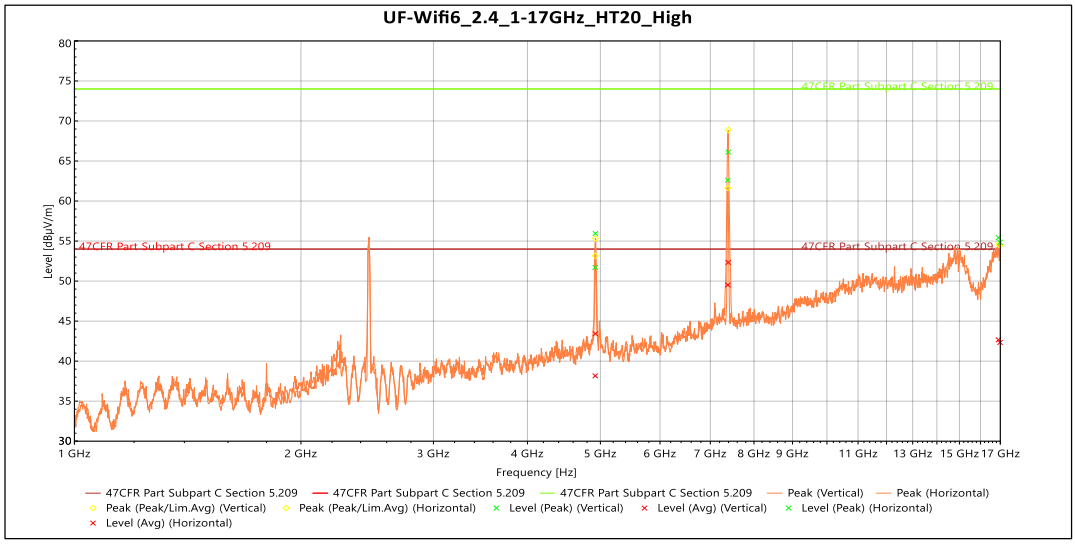
Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8795 GHz	57.316	74	-16.684	10	2.15	Vertical	-8.286
7.3112 GHz	66.355	74	-7.645	11	1.643	Vertical	-1.73
14.801 GHz	55.034	74	-18.966	89	1.647	Vertical	9.476
16.899 GHz	56.078	74	-17.922	60	1.647	Vertical	11.833
4.8742 GHz	51.766	74	-22.234	341	1.647	Horizontal	-8.314
7.3133 GHz	65.713	74	-8.287	59	2.654	Horizontal	-1.736
14.768 GHz	54.504	74	-19.496	32	1.647	Horizontal	8.994
16.885 GHz	55.594	74	-18.406	359	1.643	Horizontal	12.07

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.8795 GHz	44.174	54	-9.826	10	2.15	Vertical	-8.286
7.3112 GHz	53.372	54	-0.628	11	1.643	Vertical	-1.73
14.801 GHz	41.739	54	-12.261	89	1.647	Vertical	9.476
16.899 GHz	42.717	54	-11.283	60	1.647	Vertical	11.833
4.8742 GHz	37.784	54	-16.216	341	1.647	Horizontal	-8.314
7.3133 GHz	52.61	54	-1.39	59	2.654	Horizontal	-1.736

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
14.768 GHz	41.43	54	-12.57	32	1.647	Horizontal	8.994
16.885 GHz	42.755	54	-11.245	359	1.643	Horizontal	12.07

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



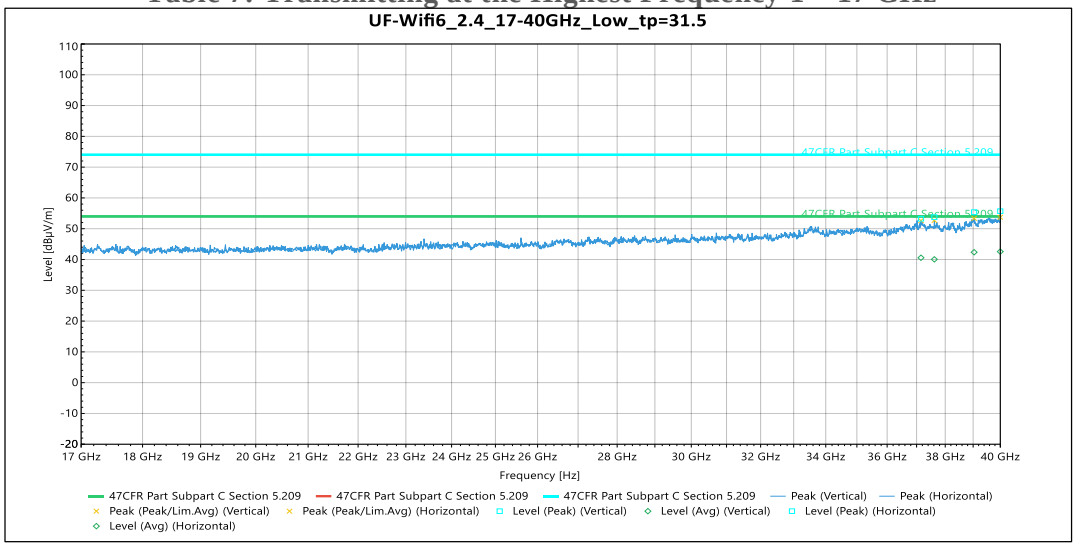
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.9238 GHz	55.942	74	-18.058	157	1.643	Vertical	-8.672
7.3945 GHz	66.112	74	-7.888	135	1.647	Vertical	-1.589
16.986 GHz	54.832	74	-19.168	338	2.146	Vertical	11.432
4.9219 GHz	51.694	74	-22.306	222	3.792	Horizontal	-8.652
7.3845 GHz	62.599	74	-11.401	38	3.798	Horizontal	-1.699
16.902 GHz	55.433	74	-18.567	297	1.829	Horizontal	11.732

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.9238 GHz	43.416	54	-10.584	157	1.643	Vertical	-8.672
7.3945 GHz	52.332	54	-1.668	135	1.647	Vertical	-1.589
16.986 GHz	42.326	54	-11.674	338	2.146	Vertical	11.432
4.9219 GHz	38.16	54	-15.84	222	3.792	Horizontal	-8.652
7.3845 GHz	49.511	54	-4.489	38	3.798	Horizontal	-1.699
16.902 GHz	42.659	54	-11.341	297	1.829	Horizontal	11.732

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



Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
37.618 GHz	53.763	74	-20.237	334	Vertical	0.827
39.998 GHz	55.69	74	-18.31	260	Vertical	3.567
37.152 GHz	53.226	74	-20.774	298	Horizontal	0.875
39.036 GHz	55.387	74	-18.613	333	Horizontal	3.227

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
37.618 GHz	40.051	54	-13.949	334	Vertical	0.827
39.998 GHz	42.56	54	-11.44	260	Vertical	3.567
37.152 GHz	40.574	54	-13.426	298	Horizontal	0.875
39.036 GHz	42.358	54	-11.642	333	Horizontal	3.227

Table 8: Transmitting at the Lowest Frequency 17 – 40 GHz (worse case)

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 1 dBi + Array gain of 3.01 dB which is a total of 4.21 dBi.

Mode	Frequency (MHz)	Measurement (dBm)	Criteria (dBm)
b	2412	-6.60	8.0
	2437	-5.86	8.0
	2462	-5.78	8.0
g	2412	-12.15	8.0
	2437	-6.65	8.0
	2462	-8.56	8.0
n 20	2412	-13.62	8.0
	2437	-6.76	8.0
	2462	-9.84	8.0
n 40	2422	-16.11	8.0
	2437	-13.39	8.0
	2452	-13.51	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 --