UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-U6EXTR
IC ID	6545A-U6EXTR
Equipment Under Test	U6-Extender
Test Report Serial Number	TR6356_02
Date of Test(s)	9 – 27 July and 5 August 2021
Report Issue Date	6 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 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	UniFi
Model Number	U6-Extender
FCC ID	SWX-U6EXTR
IC ID	6545A-U6EXTR

On this 6th 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

Alan Kitchen

Written By: Alan Kitchen

Richard L. Winter

Reviewed By: Richard L. Winter

Revision History		
Revision	**Description**	**Date**
01	Original Report Release	6 August 2021
02	Amended Sections 2.2 and 5.4	2 September 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	UniFi
Model Number	U6-Extender
Serial Number	68D79A1F2912
Dimensions (cm)	16.9 x 11.2 x 3.2

2.2 Description of EUT

The U6-Extender is a WiFi 6 access point to increase a home or office's wireless coverage. With its dual-band design and 5.3+ Gbps aggregate throughput rate, the U6-Extender delivers strong connectivity needed to support device-dense networks. The U6-Extender includes a 5 GHz 4x4 MU-MIMO transceiver and a 2.4 GHz 2x2 MIMO transceiver. The access point fits any standard US duplex wall outlet and is power by AC Mains power. The U6-Extender provides a Bluetooth BLE management radio to be used with the UniFi Network web application or mobile app.

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-Extender SN: 68D79A1F2912	WiFi Access Point	See Section 2.4
BN: Dell MN: XPS 13 SN: N/A	Laptop PC	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
AC Power	1	N/A

2.5 Operating Environment

Power Supply	120/240 VAC
AC Mains Frequency	50/60 Hz
Temperature	25.3 – 27.5 °C
Humidity	26.4 – 52.6 %
Barometric Pressure	1022 mBar

2.6 Operating Modes

The U6-Extender 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/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

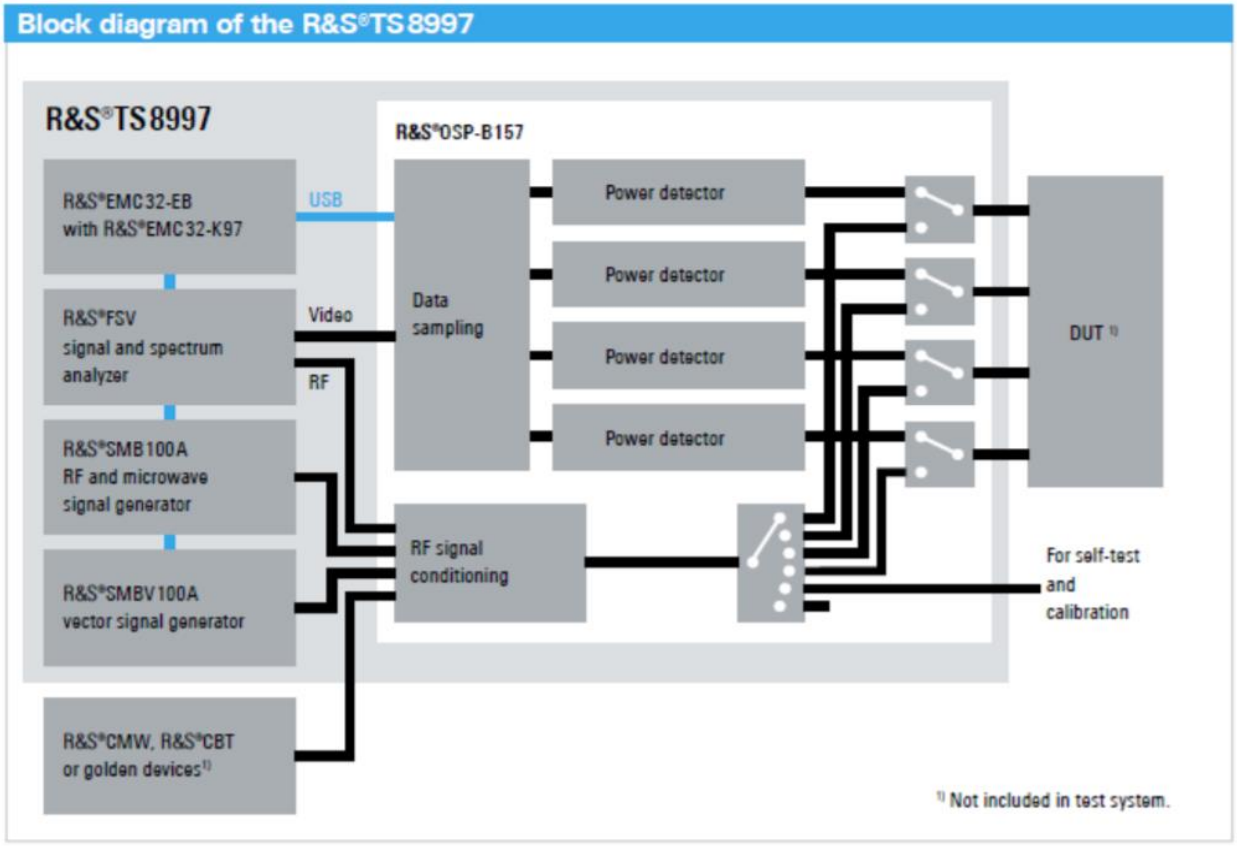


Diagram 1: Test Configuration Block Diagram

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	2400 to 2483.5	Compliant
15.247(b)	RSS-247 § 5.4	Peak Output Power	2400 to 2483.5	Compliant
15.247(d)	RSS-247 § 5.4	Antenna Conducted Spurious Emissions	0.009 to 25000	Compliant
15.247(d)	RSS-247 § 5.4	Radiated Spurious Emissions	0.009 to 25000	Compliant
15.247(e)	RSS-247 § 5.2	Peak Power Spectral Density	2400 to 2483.5	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 chamber 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

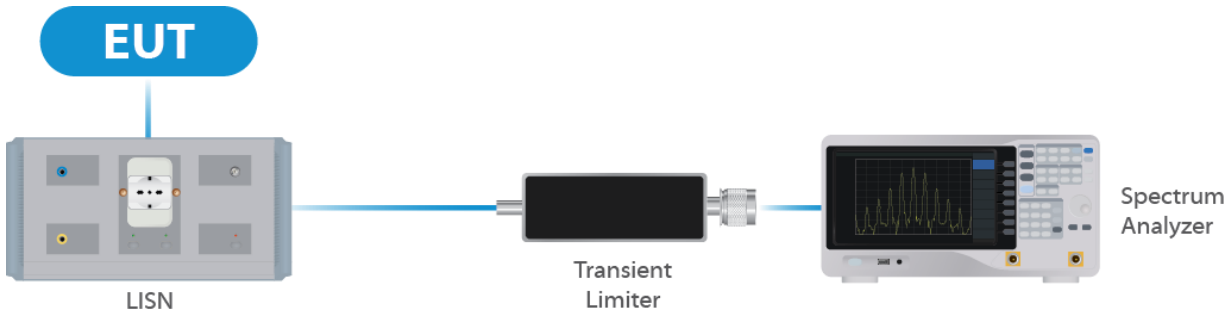


Figure 1: Conducted Emissions Test

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

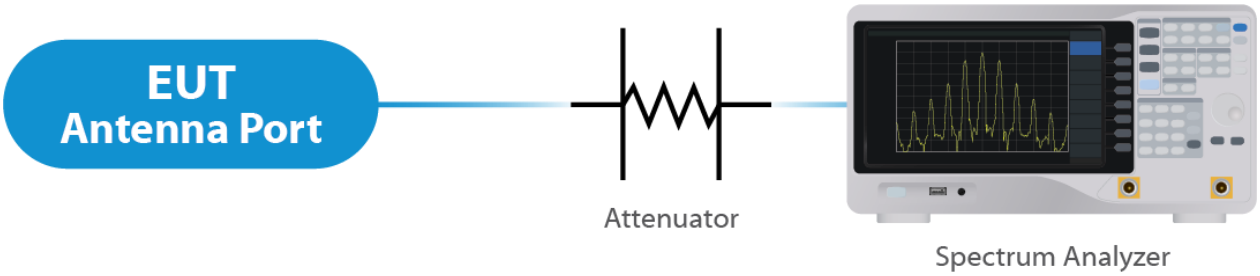


Figure 2: Direct Connect at the Antenna Port Test

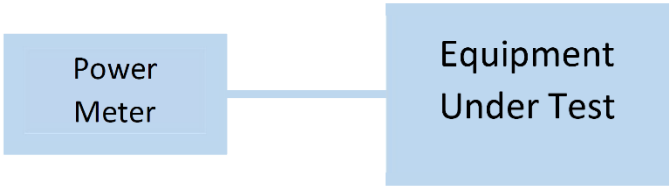


Figure 3: Output Power Measurement

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

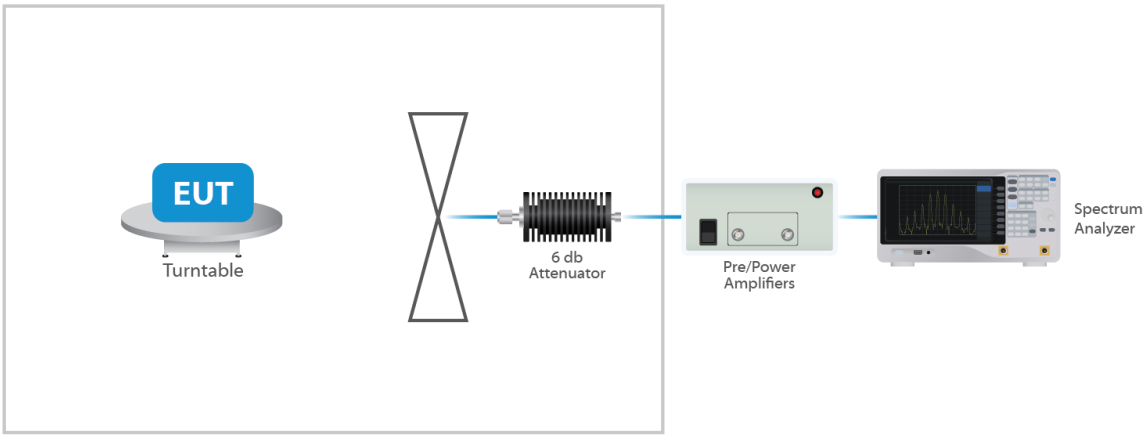


Figure 4: Radiated Emissions Test

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 (± 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 is 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 Array Gain = 10 log(NANT/NSS) dB = 3.01dB

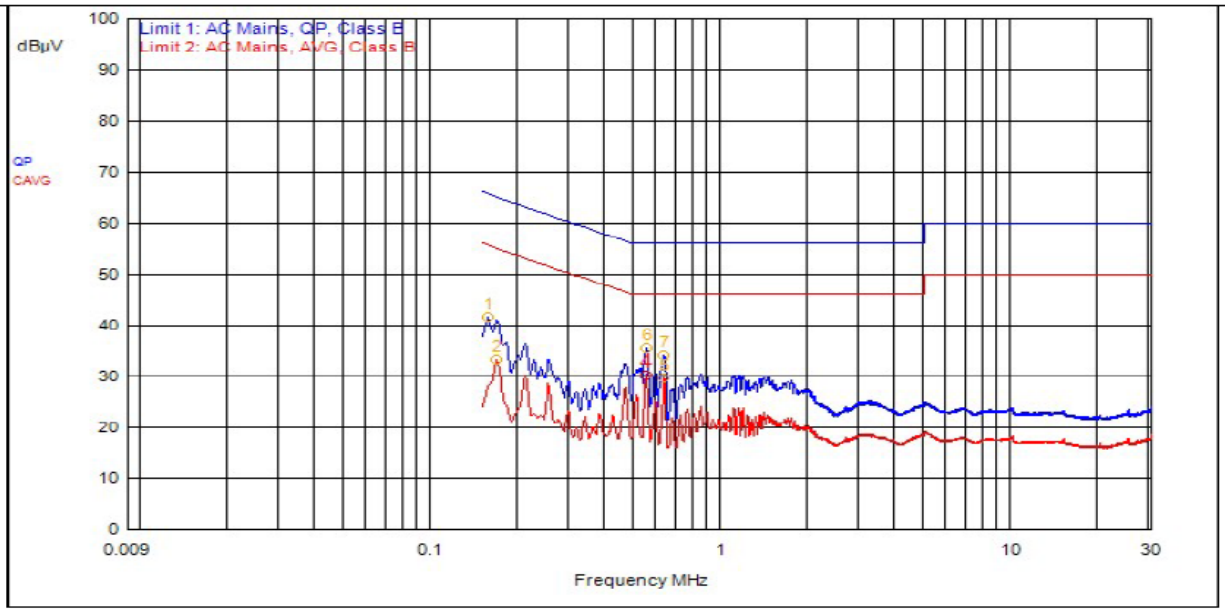
Results

The EUT complied with the specification

5.2 Conducted Emissions at Mains Ports Data

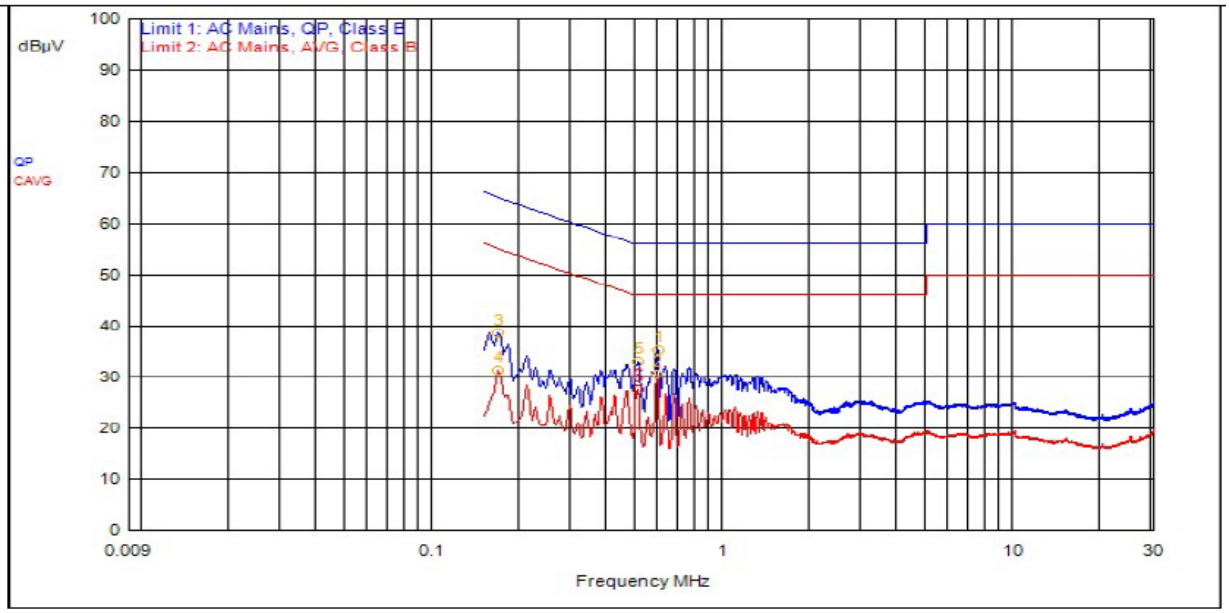
Result

The EUT complied with the specification limit.



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
6	552,000kHz	12.4	0.0		QPeak	23.1	35.5	56.0	-20.5		
7	630,000kHz	12.4	0.0		QPeak	21.7	34.1	56.0	-21.9		
1	156,000kHz	12.4	0.0		QPeak	29.4	41.8	65.7	-23.9		
2	168,000kHz	12.4	0.0		C_AVG	20.9	33.3			55.1	-21.8
4	546,000kHz	12.4	0.0		C_AVG	17.8	30.2			46.0	-15.8
5	630,000kHz	12.4	0.0		C_AVG	17.4	29.8			46.0	-16.2

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.
1	591,000kHz	12.4	0.0		QPeak	22.8	35.2	56.0	-20.8		
5	507,000kHz	12.4	0.0		QPeak	20.5	33.0	56.0	-23.0		
3	168,000kHz	12.4	0.0		QPeak	26.3	38.6	65.1	-26.4		
2	588,000kHz	12.4	0.0		C_AVG	18.1	30.5			46.0	-15.5
4	168,000kHz	12.4	0.0		C_AVG	19.0	31.4			55.1	-23.7
6	504,000kHz	12.4	0.0		C_AVG	15.0	27.5			46.0	-18.5

Graph 2: Conducted Emissions Plot – Line 1

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	12.7	8.15
	2437	13.4	8.2
	2462	12.9	8.15
g	2412	16.3	16.35
	2437	16.3	15.5
	2462	16.3	16.35
n 20	2412	17.5	16.4
	2437	17.6	17.25
	2462	17.5	17.25
n 40	2422	37.5	25.2
	2437	37.75	37.6
	2452	37.75	34.85
ax 20	2412	18.9	18.55
	2437	18.8	15.2
	2462	18.9	19.0
ax 40	2422	37.5	36.75
	2437	37.5	34.85
	2452	37.5	37.0

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 23.01 dBm or 199.99 mW. The limit is 30 dBm or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 6 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP
CCK 20	2412	Mcs0	16.5	18.25	24.25
	2437	Mcs0	21.5	23.01	29.01
	2462	Mcs0	20.5	21.8	27.8
OFDM 20	2412	Mcs0	15	16.92	27.33
	2437	Mcs0	19.5	21	26.72
	2462	Mcs0	14.5	16.15	25.35
HT 20	2412	Mcs0	15	16.53	24.97
	2437	Mcs0	20	21.01	26.82
	2462	Mcs0	14.5	15.78	26
HT 40	2422	Mcs0	13.5	14.93	24.55
	2437	Mcs0	14.5	15.78	21.78
	2452	Mcs0	13	14.01	20.93
ax 20	2412	Mcs0	15	16.16	21.78
	2437	Mcs0	20	20.62	26.46
	2462	Mcs0	14.5	15.41	25.18
ax 40	2422	Mcs0	13.5	14.92	23.71
	2437	Mcs0	15	16.38	21.41
	2452	Mcs0	13	14.07	20.92

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

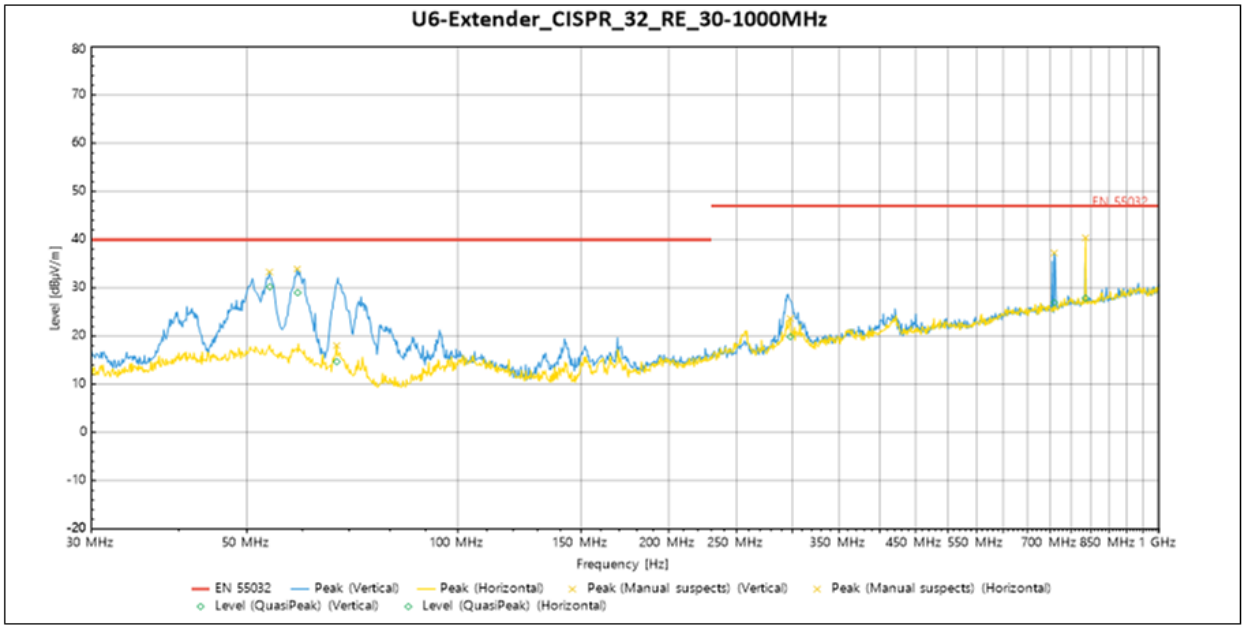
5.5.1 Radiated Spurious Emissions in the Restricted Bands of §15.205

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-amp Gain, and is added to the Receiver Reading

Result

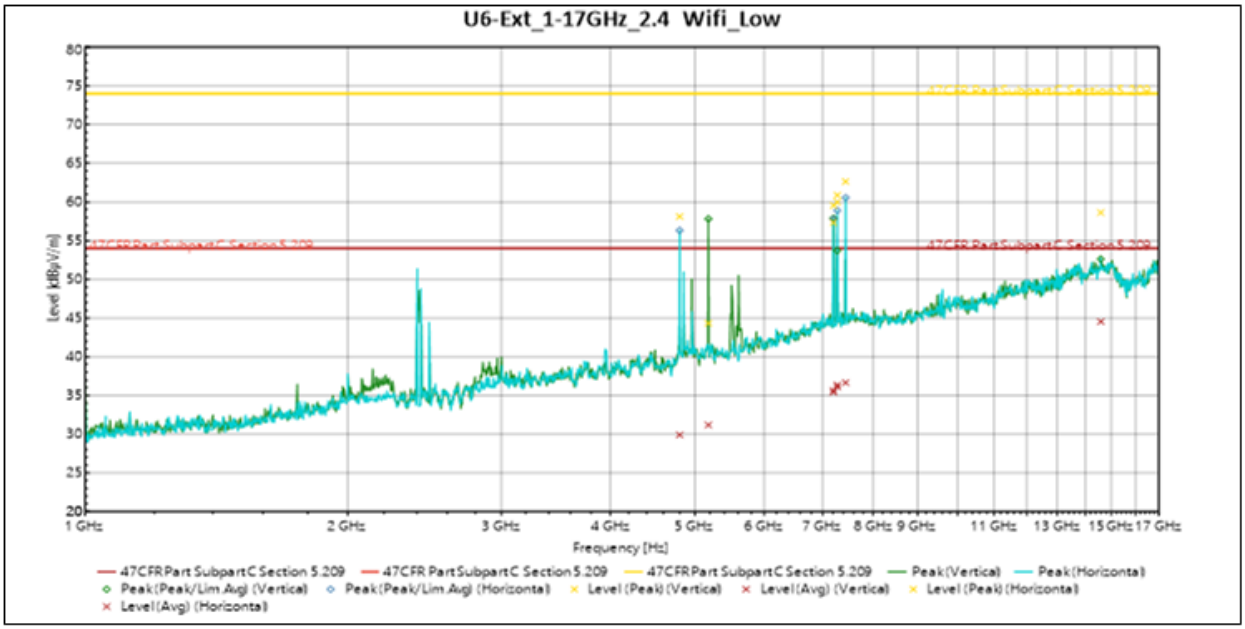
All emissions in the restricted bands of §15.205 met the limits specified in §15.209; therefore, the EUT complies with the specification.



Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	53.925 MHz	30.208	40	-9.792	38	3.643	Vertical	-12.676
QuasiPeak	59.084 MHz	28.994	40	-11.006	297	3.905	Vertical	-13.266
QuasiPeak	709.56 MHz	26.933	47	-20.067	169	2.51	Vertical	-4.446
QuasiPeak	67.163 MHz	14.683	40	-25.317	324	2.556	Horizontal	-15.343
QuasiPeak	298.15 MHz	19.845	47	-27.155	238	3.169	Horizontal	-12.11
QuasiPeak	786.23 MHz	27.865	47	-19.135	331	3.329	Horizontal	-2.985

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	5.1796 GHz	44.32	74	-29.68	83	2.212	Vertical	1.192
Peak	7.2054 GHz	57.34	74	-16.66	171	2.362	Vertical	7.129
Peak	7.2774 GHz	59.961	74	-14.039	154	2.548	Vertical	7.438
Peak	14.587 GHz	58.627	74	-15.373	135	1.647	Vertical	15.335

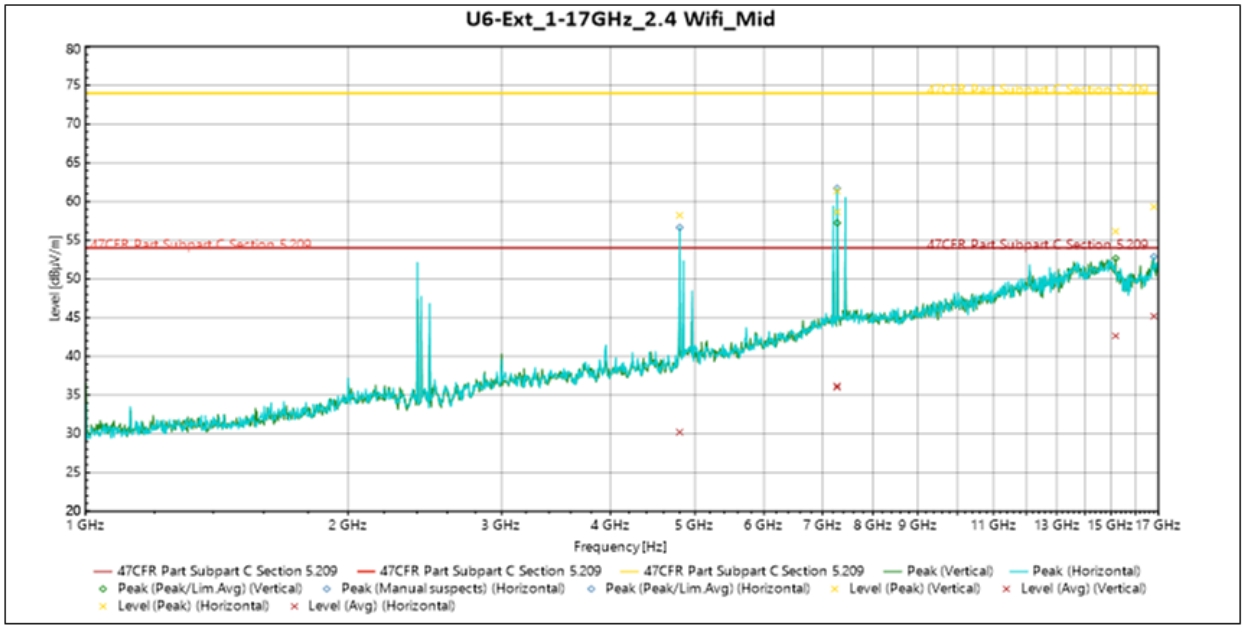
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	5.1796 GHz	31.179	54	-22.821	83	2.212	Vertical	1.192
Avg	7.2054 GHz	35.434	54	-18.566	171	2.362	Vertical	7.129
Avg	7.2774 GHz	36.092	54	-17.908	154	2.548	Vertical	7.438
Avg	14.587 GHz	44.538	54	-9.462	135	1.647	Vertical	15.335

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	4.8013 GHz	58.129	74	-15.871	182	3.793	Horizontal	0.051
Peak	7.206 GHz	59.544	74	-14.456	64	2.919	Horizontal	7.129
Peak	7.2784 GHz	60.871	74	-13.129	60	3.272	Horizontal	7.445
Peak	7.4406 GHz	62.654	74	-11.346	152	2.915	Horizontal	7.692

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	4.8013 GHz	29.901	54	-24.099	182	3.793	Horizontal	0.051
Avg	7.206 GHz	35.64	54	-18.36	64	2.919	Horizontal	7.129
Avg	7.2784 GHz	36.327	54	-17.673	60	3.272	Horizontal	7.445
Avg	7.4406 GHz	36.665	54	-17.335	152	2.915	Horizontal	7.692

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	7.2778 GHz	58.652	74	-15.348	133	3.798	Vertical	7.441
Peak	15.187 GHz	56.146	74	-17.854	296	2.385	Vertical	13.614

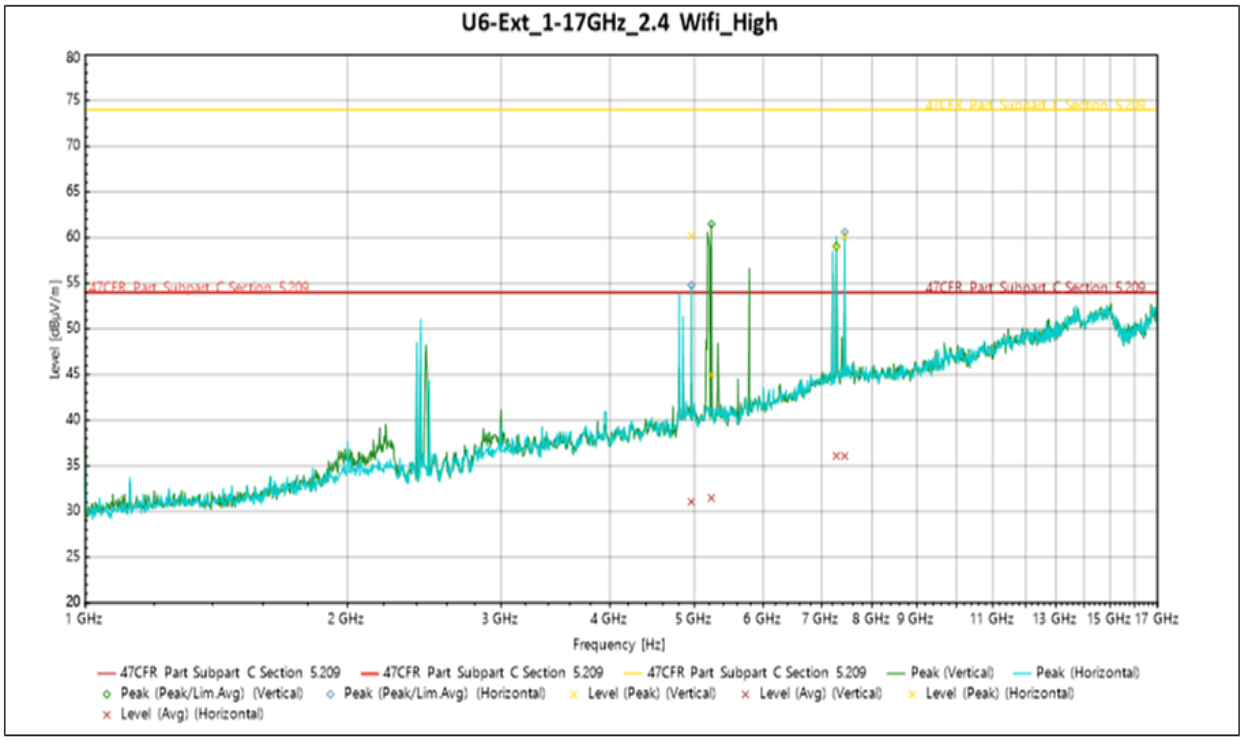
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	7.2778 GHz	35.998	54	-18.002	133	3.798	Vertical	7.441
Avg	15.187 GHz	42.652	54	-11.348	296	2.385	Vertical	13.614

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	4.8012 GHz	58.219	74	-15.781	168	3.798	Horizontal	0.05
Peak	7.2773 GHz	61.364	74	-12.636	72	3.444	Horizontal	7.437
Peak	16.798 GHz	59.326	74	-14.674	258	2.036	Horizontal	16.942

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	4.8012 GHz	30.218	54	-23.782	168	3.798	Horizontal	0.05
Avg	7.2773 GHz	36.192	54	-17.808	72	3.444	Horizontal	7.437
Avg	16.798 GHz	45.186	54	-8.814	258	2.036	Horizontal	16.942

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	5.2304 GHz	44.971	74	-29.029	214	2.91	Vertical	1.384
Peak	7.2778 GHz	59.008	74	-14.992	156	2.562	Vertical	7.441

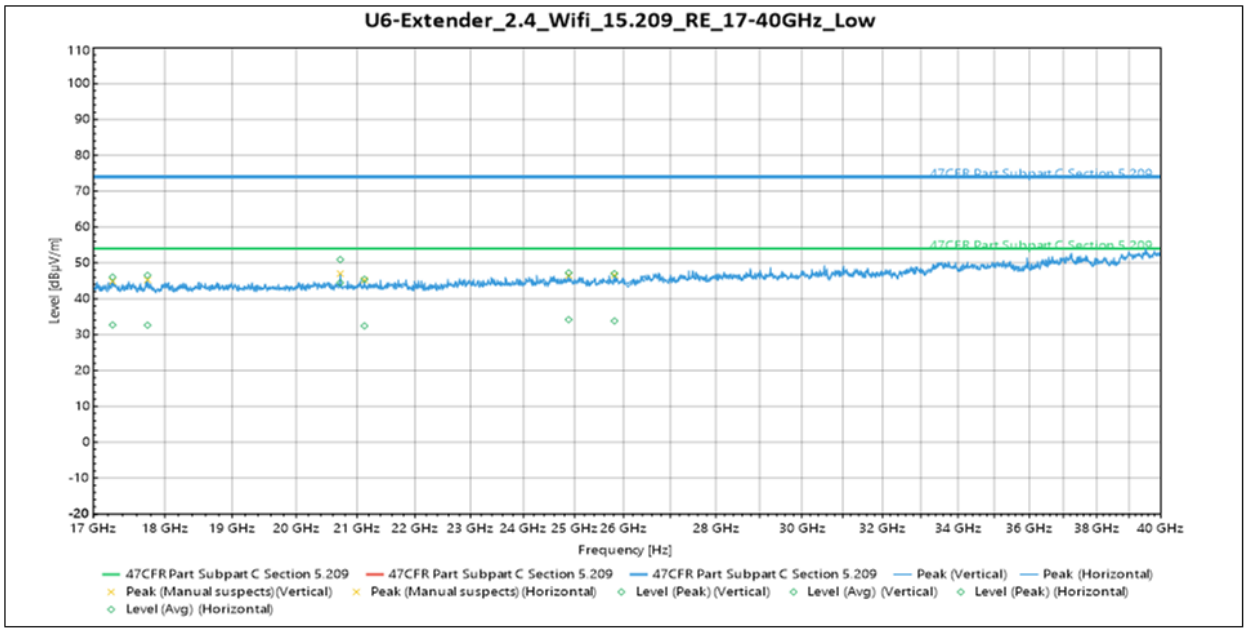
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	5.2304 GHz	31.477	54	-22.523	214	2.91	Vertical	1.384
Avg	7.2778 GHz	36.093	54	-17.907	156	2.562	Vertical	7.441

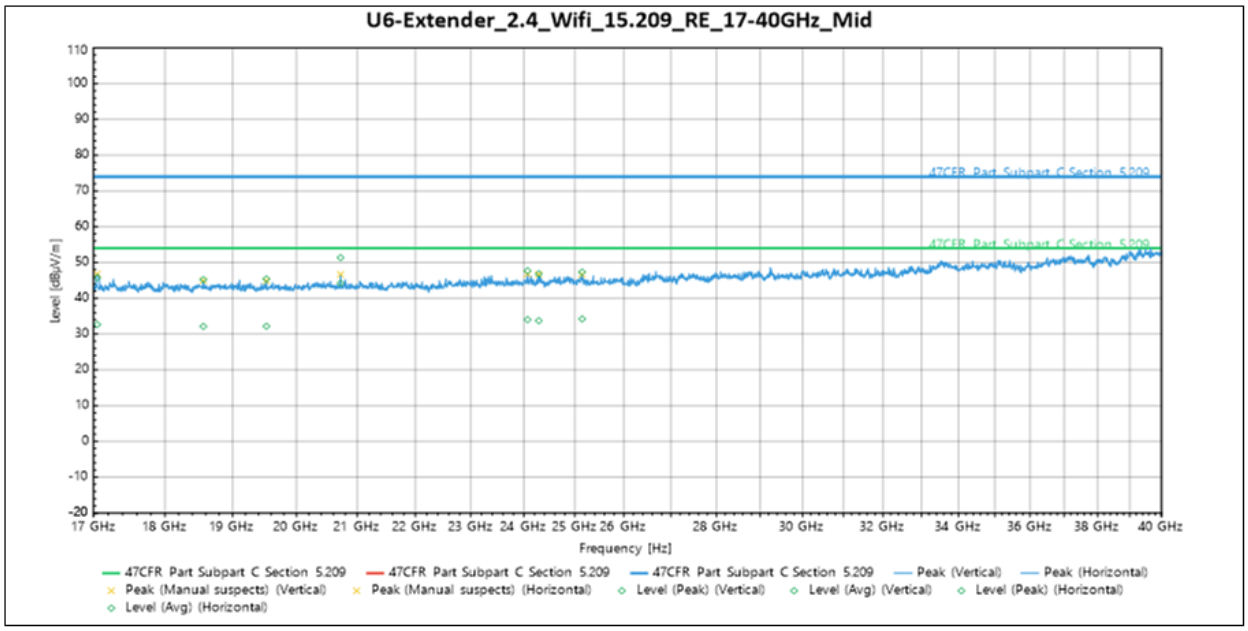
Horizontal

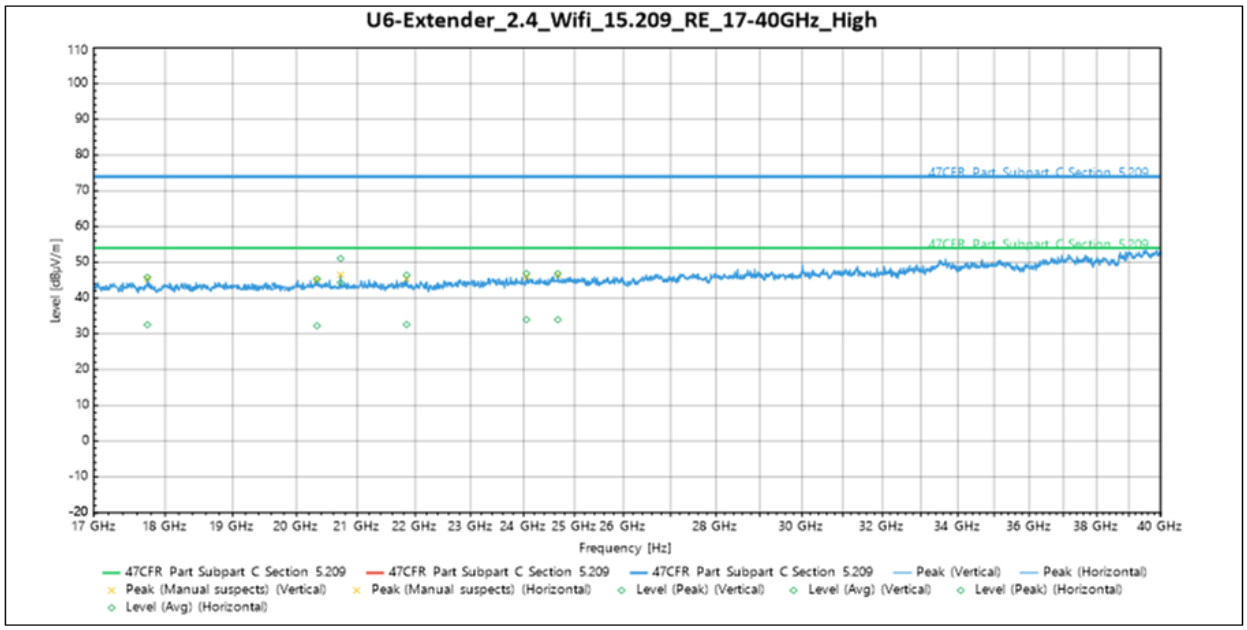
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	4.9599 GHz	60.219	74	-13.781	183	1.5	Horizontal	0.557
Peak	7.439 GHz	60.096	74	-13.904	201	1.643	Horizontal	7.706

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	4.9599 GHz	31.051	54	-22.949	183	1.5	Horizontal	0.557
Avg	7.439 GHz	36.074	54	-17.926	201	1.643	Horizontal	7.706

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


U6-Extender_2.4_Wifi_15.209_RE_17-40GHz_Low
Level [dBµV/m]
Frequency [Hz]
47CFR Part Subpart C Section 5.209
47CFR Part Subpart C Section 5.209
47CFR Part Subpart C Section 5.209
Peak (Vertical)
Peak (Horizontal)
Peak (Manual suspects) (Vertical)
Peak (Manual suspects) (Horizontal)
Level (Peak) (Vertical)
Level (Avg) (Vertical)
Level (Peak) (Horizontal)
Level (Avg) (Horizontal)

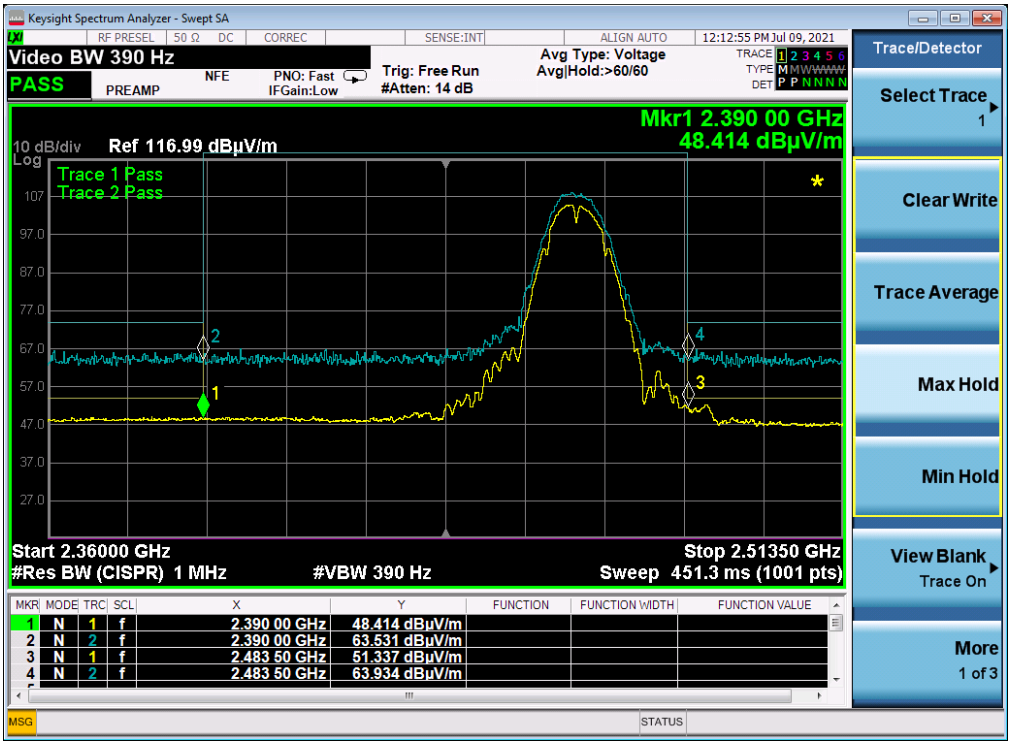

U6-Extender_2.4_Wifi_15.209_RE_17-40GHz_Mid
Level [dBµV/m]
Frequency [Hz]
47CFR Part Subpart C Section 5.209
47CFR Part Subpart C Section 5.209
47CFR Part Subpart C Section 5.209
Peak (Vertical)
Peak (Horizontal)
Peak (Manual suspects) (Vertical)
Peak (Manual suspects) (Horizontal)
Level (Peak) (Vertical)
Level (Avg) (Vertical)
Level (Peak) (Horizontal)
Level (Avg) (Horizontal)



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

Graph 2: Transmitting at the all Frequencies 17 – 40 GHz

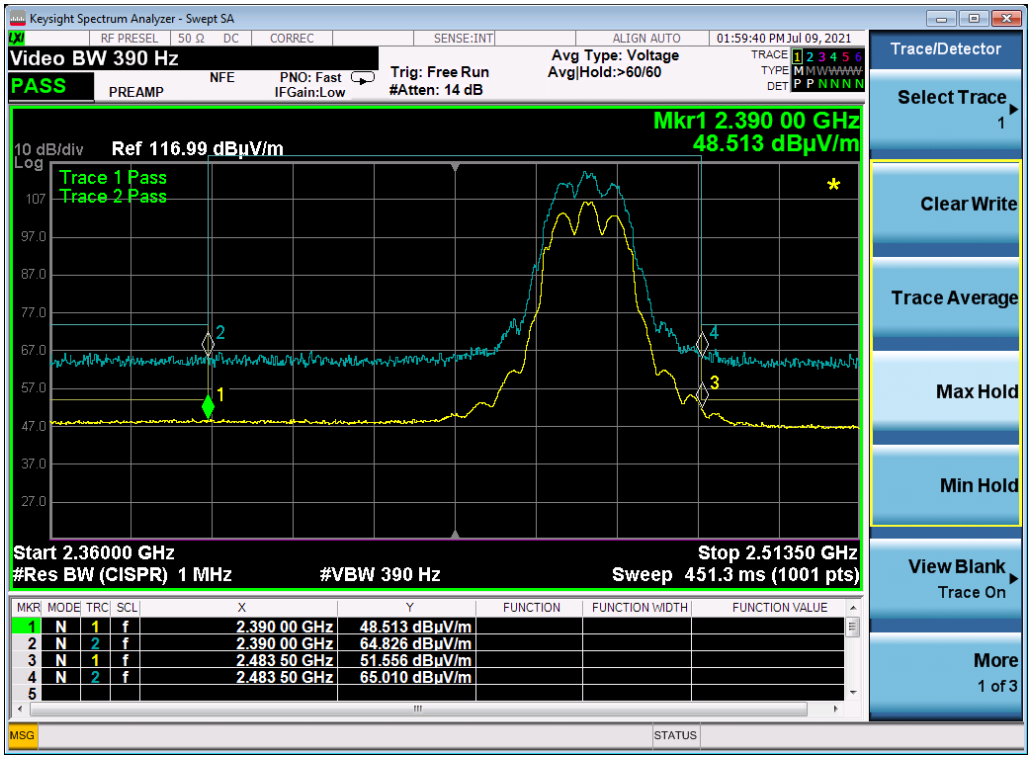
Graph 3: Lower Band Edge Plot – 2412 MHz – b Mode



Graph 4: Upper Band Edge Plot – 2462 – b Mode

Graph 5: Lower Band Edge Plot – 2412 MHz – g Mode

Graph 6: Middle Band Edge Plot – 2432 – g Mode

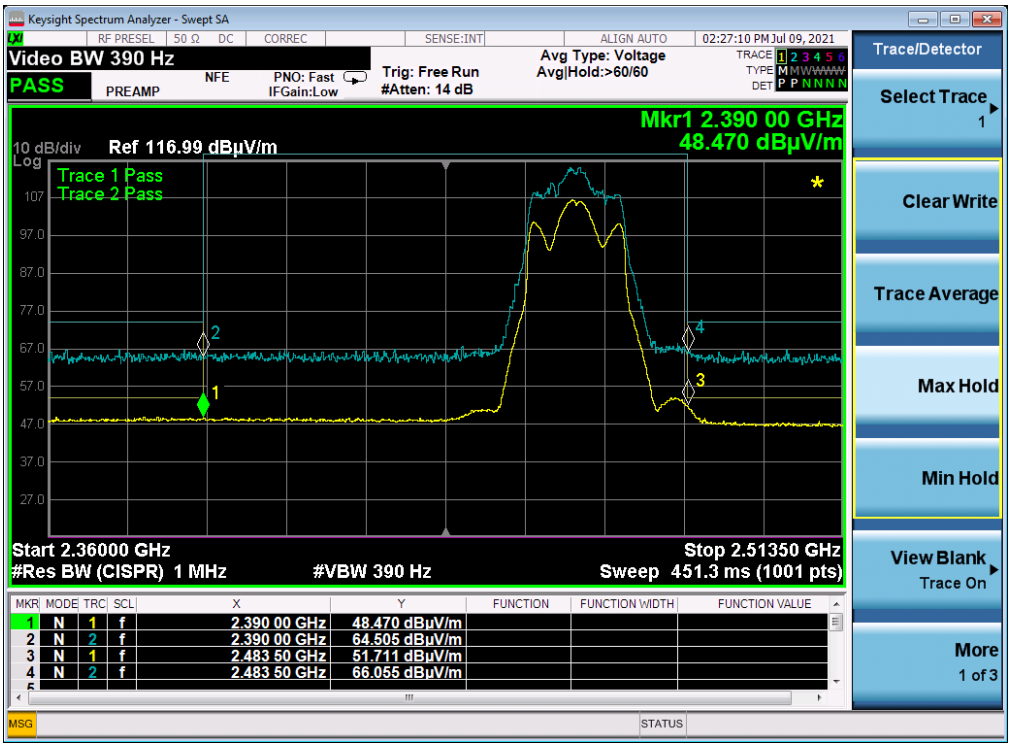


Graph 7: Upper Band Edge Plot – 2462 – g Mode

Graph 8: Lower Band Edge Plot – 2412 MHz – n20 Mode

Graph 9: Middle Band Edge Plot – 2427 – n20 Mode

Graph 10: Middle Band Edge Plot – 2437 – n20 Mode



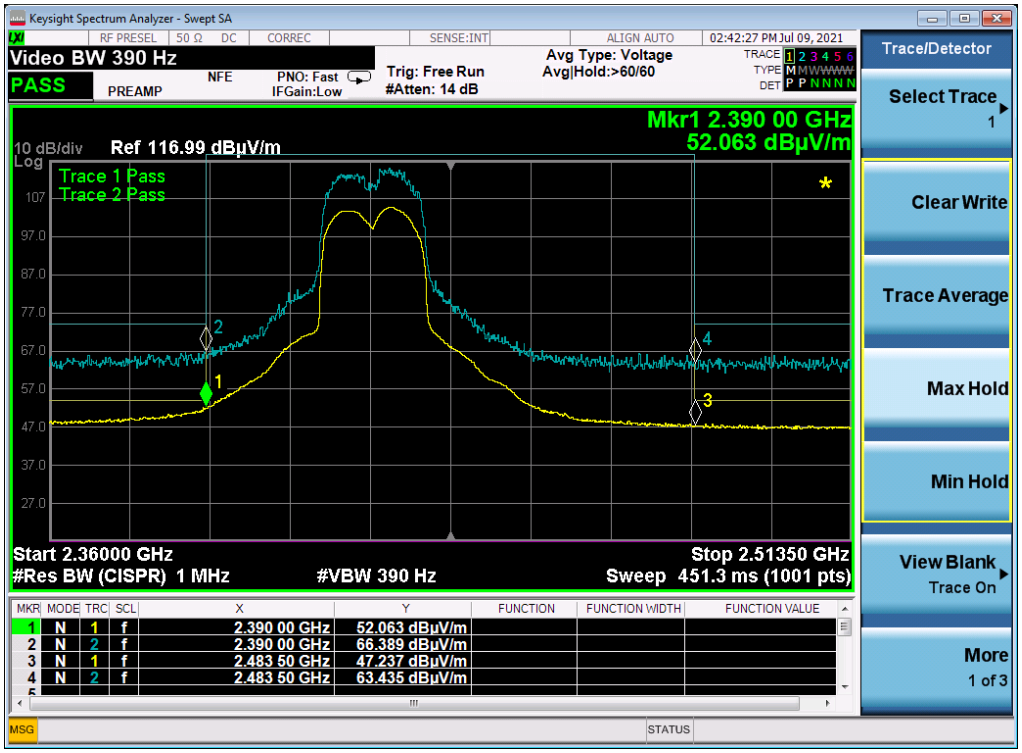
Graph 11: Upper Band Edge Plot – 2462 – n20 Mode

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

Graph 13: Middle Band Edge Plot – 2437 – n40 Mode

Graph 14: Upper Band Edge Plot – 2452 – n40 Mode

Graph 15: Lower Band Edge Plot – 2412 MHz – ax20 Mode



Graph 16: Middle Band Edge Plot – 2422– ax20 Mode

Graph 17: Middle Band Edge Plot – 2437 – ax20 Mode

Graph 18: Upper Band Edge Plot – 2462 – ax20 Mode

Graph 19: Lower Band Edge Plot – 2422 MHz – ax20 Mode

Graph 20: Middle Band Edge Plot – 2437 – ax40 Mode

Graph 21: 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 6 dBi + Array gain of 3.01 dB which is a total of 9.01 dBi.
Results of this testing are summarized.

Mode	Frequency (MHz)	Data Rate	TP Setting	Measurement (dBm)
b	2412	Mcs0_Nss1	16.5	-14.52
	2437	Mcs0_Nss1	21.5	-10.43
	2462	Mcs0_Nss1	20	-11.93
g	2412	Mcs0_Nss1	15	-15.11
	2437	Mcs0_Nss1	19.5	-11.54
	2462	Mcs0_Nss1	14.5	-16.19
n 20	2412	Mcs0_Nss1	15	-17.37
	2437	Mcs0_Nss1	20	-13.11
	2462	Mcs0_Nss1	14.5	-18.27
n 40	2422	Mcs0_Nss1	13.5	-22.55
	2437	Mcs0_Nss1	14.5	-21.71
	2452	Mcs0_Nss1	13	-23.81
ax 20	2412	Mcs0_Nss1	15	-19.09
	2437	Mcs0_Nss1	20	-14.8
	2462	Mcs0_Nss1	14.5	-19.8
ax 40	2422	Mcs0_Nss1	13.5	-22.44
	2437	Mcs0_Nss1	15	-21.19
	2452	Mcs0_Nss1	13	-23.56

Mode	Frequency (MHz)	Data Rate	TP Setting	Measurement (dBm)
b	2412	Mcs0_Nss4	16.5	-14.52
	2437	Mcs0_Nss4	21.5	-10.43
	2462	Mcs0_Nss4	20	-11.93
g	2412	Mcs0_Nss4	15	-15.11
	2437	Mcs0_Nss4	19.5	-11.54
	2462	Mcs0_Nss4	14.5	-16.19
n 20	2412	Mcs0_Nss4	15	-17.37
	2437	Mcs0_Nss4	20	-13.11
	2462	Mcs0_Nss4	14.5	-18.27
n 40	2422	Mcs0_Nss4	13.5	-22.55
	2437	Mcs0_Nss4	14.5	-21.71
	2452	Mcs0_Nss4	13	-23.81
ax 20	2412	Mcs0_Nss4	15	-19.09
	2437	Mcs0_Nss4	20	-14.8
	2462	Mcs0_Nss4	14.5	-19.8
ax 40	2422	Mcs0_Nss4	13.5	-22.44
	2437	Mcs0_Nss4	15	-21.19
	2452	Mcs0_Nss4	13	-23.56

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 --