UNIFIED COMPLIANCE LABORATORY

427 West 12800 South
Draper, UT 84020

Test Report

Certification

FCC ID	SWX-AF60XR
Equipment Under Test	AF60-XR
Test Report Serial Number	TR6450_02
Date of Test(s)	19 February, 6 May, 16, 19, August and 2 September 2021
Report Issue Date	13 September 2021

Test Specification	**Applicant**
47 CFR FCC Part 15, Subpart E	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

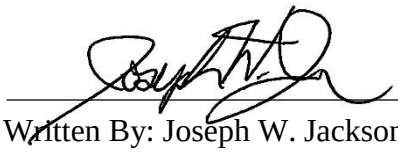
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with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

Applicant	Ubiquiti Inc.
Manufacturer	Ubiquiti Inc.
Brand Name	airFiber
Model Number	AF60-XR
FCC ID	SWX-AF60XR

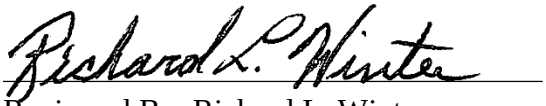
On this 13th day of September 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

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	13 September 2021
02	Remove ISED References	7 January 2022

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	airFiber
Model Number	AF60-XR
Serial Number	FCECDAFFE77E
Dimensions (cm)	77.9 x 66.4 x 38.3

2.2 Description of EUT

The AF60-XR is a 60 GHz point-to-point wireless bridge which provides 2.5+ Gbps throughput connectivity over long distances. The AF60-XR provides an integrated high-gain dish antenna for high speed, long-range point-to-point links. The AF60-XR provides a 5 GHz 2x2 radio with cross polarized elements as a backup radio for operation redundancies. The AF60-XR also includes a Bluetooth management radio for setup and configuration. The AF60-XR is powered from a 48 Volt PoE Power Adapter.

Band	WiFi Mode	Modulation Bandwidth	Modulation Type	Frequency (MHz)
UNII-1	a	20 MHz	OFDM	5180, 5190, 5200, 5210, 5240
	n	20 MHz	HT	5180, 5190, 5200, 5210, 5240
	n	40 MHz	HT	5190, 5200, 5210, 5220, 5230
	ac	20 MHz	VHT	5180, 5190, 5200, 5210, 5240
	ac	40 MHz	VHT	5190, 5200, 5210, 5220, 5230
	ac	80 MHz	VHT	5210

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

2.3 EUT and Support Equipment

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

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: airFiber MN: AF60-XR (Note 1) SN: FCECDAFFE77E	Wireless Access Point	See Section 2.4
BN: Ubiquiti Inc. MN: UPOE-at SN: N/A	PoE Injector Power Supply	Shielded or Un-shielded Cat 5e cable/1 meter
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	Shielded or Un-shielded Cat 5e cable/1 meter

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	1	3 conductor power cord/80 cm
PoE	1	Shielded or Un-shielded Cat 5e cable/1 meter
LAN	1	Shielded or Un-shielded Cat 5e cable/1 meter

2.5 Operating Environment

Power Supply	120 Vac to 48 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	22.0 – 25.7 °C
Humidity	22.4 – 42.8 %
Barometric Pressure	1003 mBar

2.6 Operating Modes

The AF60-XR was tested using test software in order to enable a constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11 a/n/ac were investigated. All measurements are reported with the worst-case mode (802.11ac) unless otherwise stated.

2.7 EUT Exercise Software

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

2.8 Block Diagram of Test Configuration

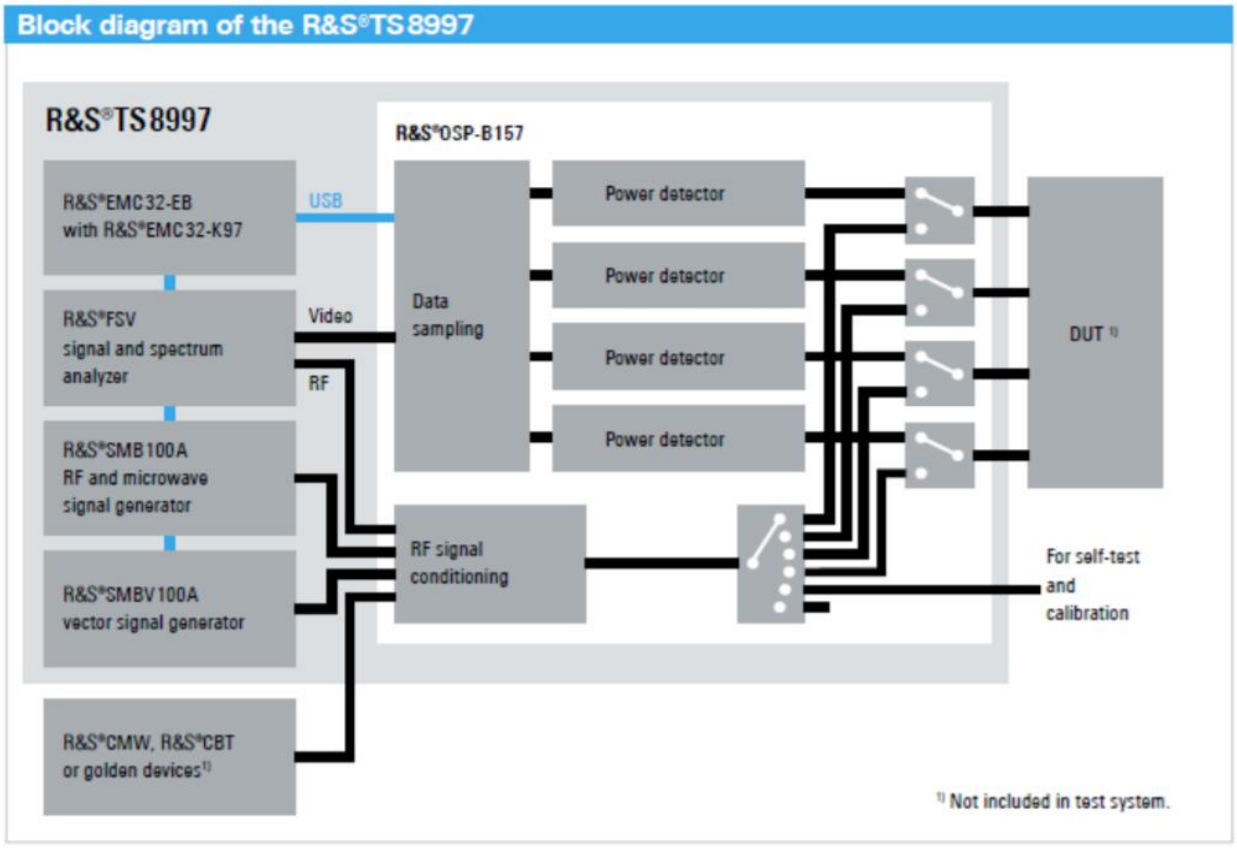


Diagram 1: Test Configuration Block Diagram

2.9 Modification Incorporated/Special Accessories on EUT

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

2.10 Deviation, Opinions Additional Information or Interpretations from Test Standard

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

3 Test Specification, Method and Procedures

3.1 Test Specification

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

3.2 Methods & Procedures

3.2.1 47 CFR FCC Part 15 Section 15.407

See test standard for details.

3.3 FCC Part 15, Subpart E

3.3.1 Summary of Tests

FCC Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.407(a)	Antenna requirements	Structural Requirement	Compliant
15.407(b)	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(c)	Bandwidth Requirement	5180 to 5210	Compliant
15.407(e)	Peak Output Power	5180 to 5210	Compliant
15.407(f)	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.407(g)	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(h)	Peak Power Spectral Density	5180 to 5210	Compliant

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.

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

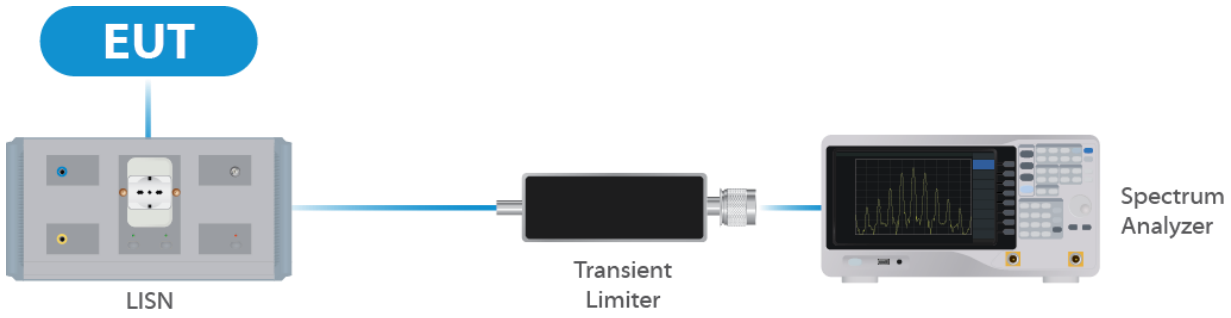


Figure 1: Conducted Emissions Test

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	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	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

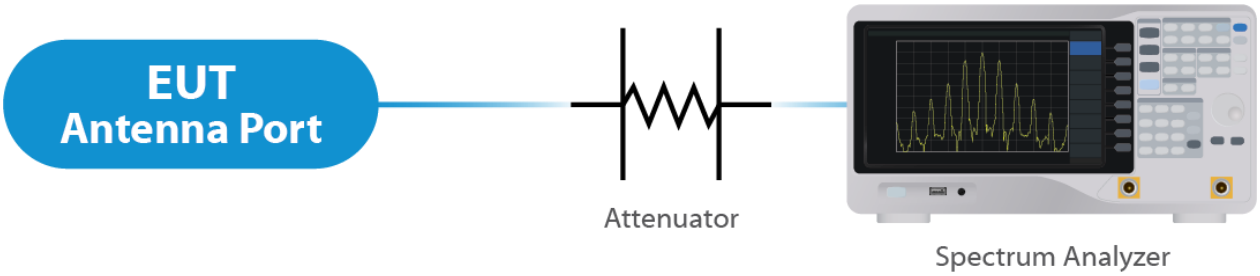


Figure 2: Direct Connect at the Antenna Port Test

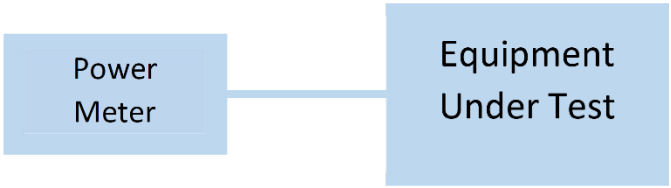


Figure 3: Output Power Measurement

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
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	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

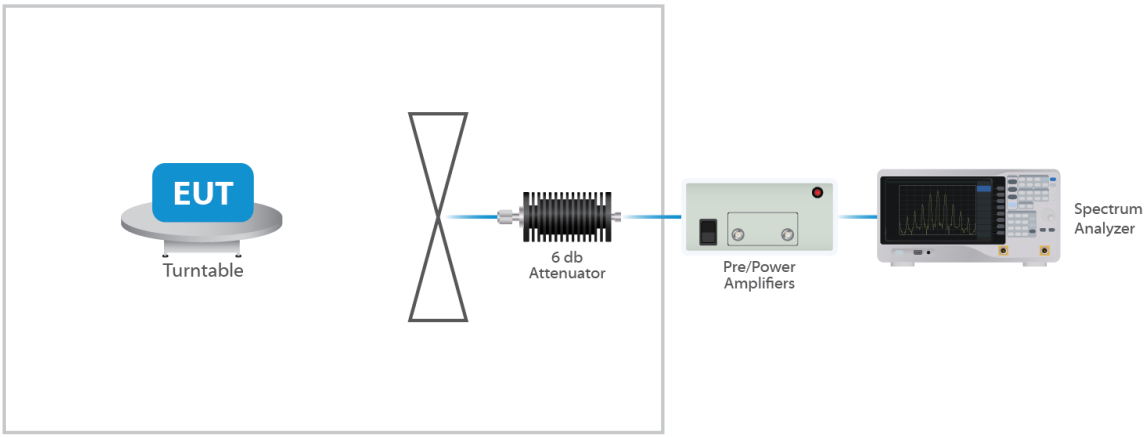


Figure 4: Radiated Emissions Test

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

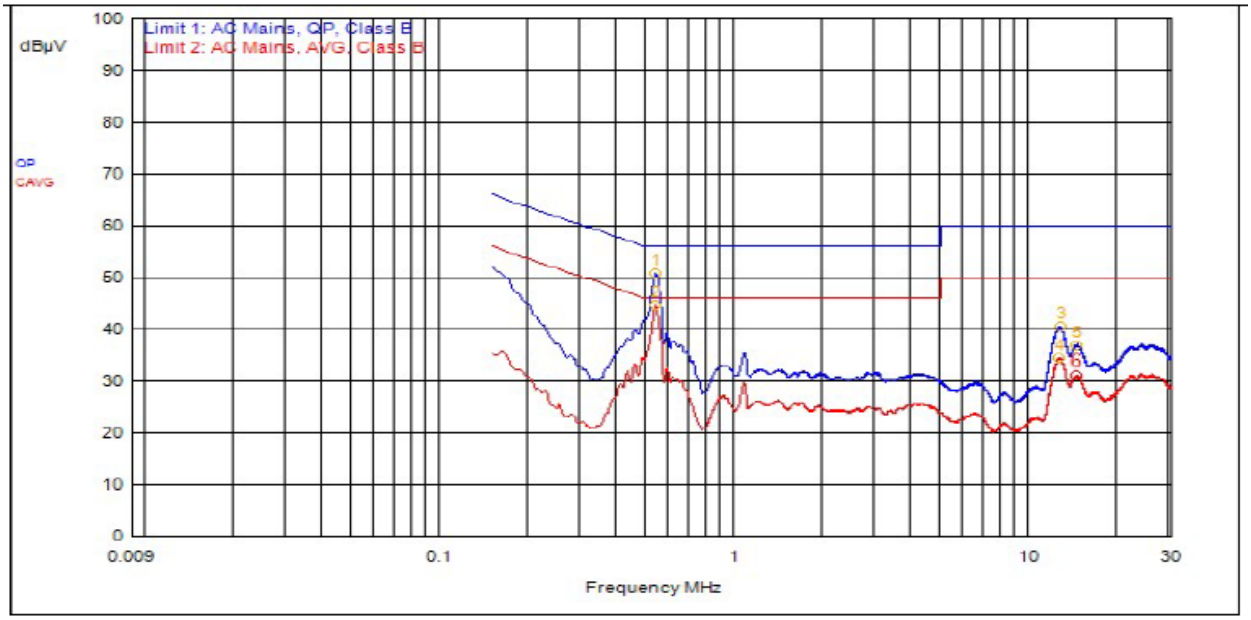
The EUT uses a dish antenna structure. The maximum gain of the antenna 26 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable. The EUT has a 2x2 transmitter and the chains are cross polarized.

Results

The EUT complied with the specification

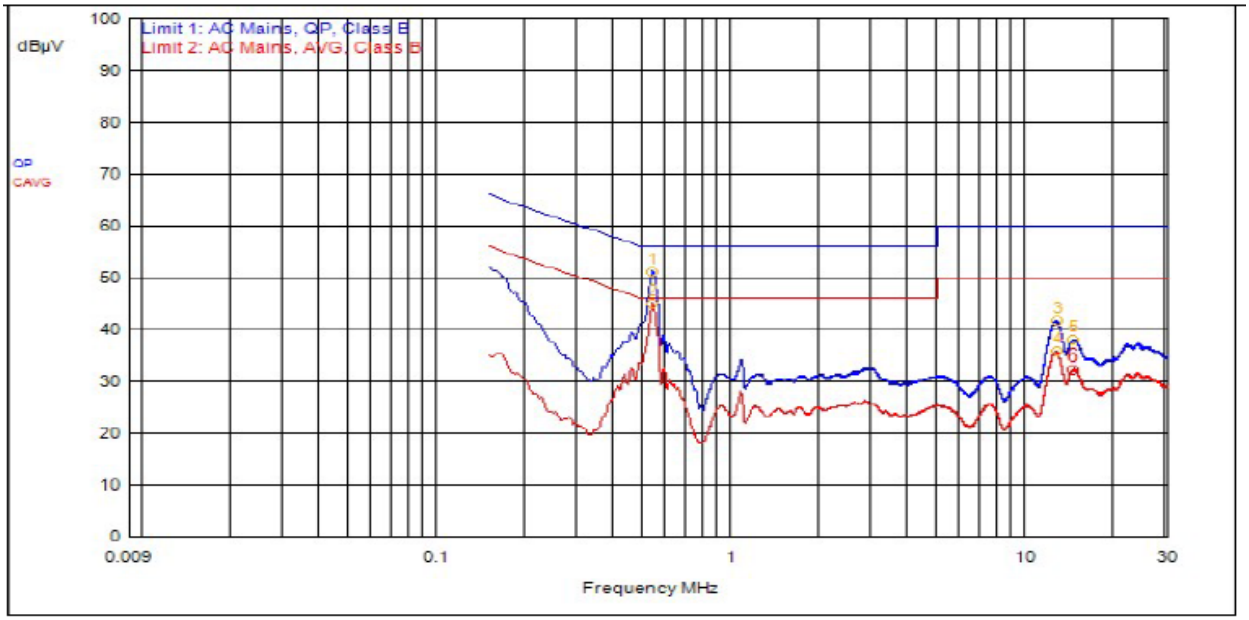
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	534,000kHz	12.4	0.0		QPeak	38.4	50.8	56.0	-5.2		
3	12.558MHz	12.4	0.2		QPeak	27.9	40.5	60.0	-19.5		
5	14.262MHz	12.5	0.2		QPeak	24.2	36.9	60.0	-23.1		
2	534,000kHz	12.4	0.0		C_AVG	32.2	44.6			46.0	-1.4
4	12.501MHz	12.4	0.2		C_AVG	21.8	34.4			50.0	-15.6
6	14.265MHz	12.5	0.2		C_AVG	18.4	31.0			50.0	-19.0

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
1	534,000kHz	12.4	0.0		QPeak	38.8	51.2	56.0	-4.8		
3	12.558MHz	12.4	0.2		QPeak	29.0	41.6	60.0	-18.4		
5	14.334MHz	12.5	0.2		QPeak	25.4	38.1	60.0	-21.9		
2	537,000kHz	12.4	0.0		C_AVG	32.7	45.1			46.0	-0.9
4	12.576MHz	12.4	0.2		C_AVG	23.2	35.8			50.0	-14.2
6	14.337MHz	12.5	0.2		C_AVG	19.6	32.2			50.0	-17.8

Result

The EUT complied with the specification limit.

5.3 §15.403(i) 26 dB Emissions Bandwidth

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

Nominal BW (MHz)	WiFi Mode	Frequency (MHz)	99% Bandwidth (MHz)	Emissions 26 dB Bandwidth (MHz)
20	a	5180	16.5	21.3
20	a	5210	16.5	21.0
20	a	5240	16.6	20.7
20	n	5180	17.7	22.0
20	n	5210	17.7	22.0
20	n	5240	17.7	21.8
40	n	5190	37.0	41.4
40	n	5210	37.0	41.3
40	n	5230	37.0	41.4
20	ac	5180	17.7	21.2
20	ac	5210	17.7	21.3
20	ac	5240	17.7	21.1
40	ac	5190	37.0	41.3
40	ac	5210	37.0	40.8
40	ac	5230	37.0	41.1
80	ac	5210	76.5	84.0

Result

All chains were tested and the highest bandwidth per chain is reported above.
The 26 dB bandwidths are reported for information purposes. Please see Annex for all bandwidth measurements.

5.4 §15.403(a)(1) Maximum Average Output Power

All chains were measured and summed under the guidance of KDB 789033 Section II. E.2. and KDB 66291 D01. Please see associated annex for details on instrument settings.
The maximum average RF conducted output power measured for this device was 3.99 dBm or 2.51 mW. The limit is 30 dBm, or 1 Watt when using an antenna with 23 dBi (Fixed point to point) or less gain. The antenna has a gain of 26 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured EIRP	Measured PSD
OFDM 20	5180	Mcs0	27	3.53	29.53	-11.0
OFDM 20	5210	Mcs0	27	3.97	29.97	-10.6
OFDM 20	5240	Mcs0	24	3.73	29.73	-11.0
HT 20	5180	Mcs0	28	3.95	29.95	-11.2
HT 20	5210	Mcs0	27	3.92	29.92	-10.9
HT 20	5240	Mcs0	25	3.68	29.68	-11.3
HT 40	5190	Mcs0	28	3.75	29.75	-13.8
HT 40	5210	Mcs0	27	3.60	29.60	-14.1
HT 40	5230	Mcs0	26	3.59	29.59	-14.5
VHT 20	5180	Mcs0	28	3.99	29.99	-10.7
VHT 20	5210	Mcs0	27	3.88	29.88	-11.1
VHT 20	5240	Mcs0	25	3.67	29.67	-11.2
VHT 40	5190	Mcs0	28	3.75	29.75	-14.7
VHT 40	5210	Mcs0	27	3.57	29.57	-14.3
VHT 40	5230	Mcs0	26	3.61	29.61	-14.3
VHT 80	5210	Mcs0	28	3.97	29.97	-16.6

Table 4: Output Power with 26 dBi Antenna

Result

In the configuration tested, the maximum summed average RF output power was less than 1 watt; therefore, the EUT compiled with the requirements of the specification (see spectrum analyzer plots in attached Annex).

5.5 §15.407(b) 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 graphs show the measurement data from spurious emissions noted across the frequency range when transmitting at the lowest frequency, middle frequency and upper frequency. Shown below are plots with the EUT turned to the upper and lower channels with the antenna gain of 26 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must be remain below -27 dBm EIRP.

Result

Conducted spurious emissions were below -27 dBm; therefore, the EUT complies with the specification.

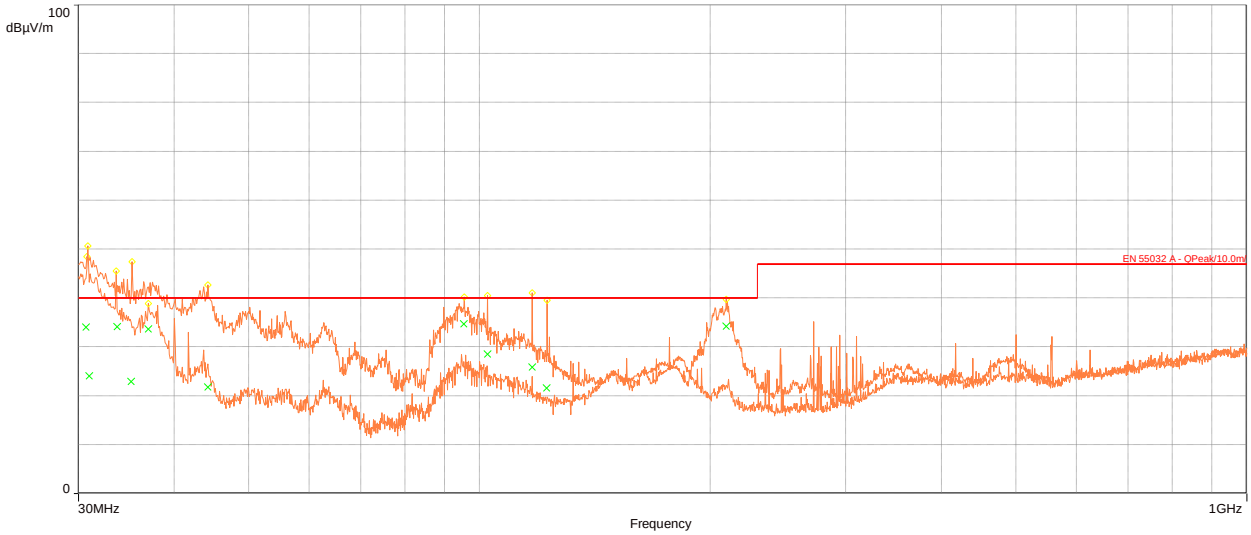
5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205

The EUT uses various power settings based on the channel in use. In order to reduce test time, the radiated spurious emissions at the lowest, middle, and highest channel were measured at the maximum power of TP28, as this setting was found to be worst case for spurious emissions. Power was subsequently reduced during in-band and band edge testing. The band edge at the restricted band ending at 5180 MHz was measured using radiated measurement or conducted at the antenna port methods. [For radiated] All emissions modes were tested, and the worst-case measurement are shown below. For frequencies above 1 GHz, a measurement of 3 meters was used. For frequencies below 1 GHz, a measurement distance of 10 meters was used.

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

Result

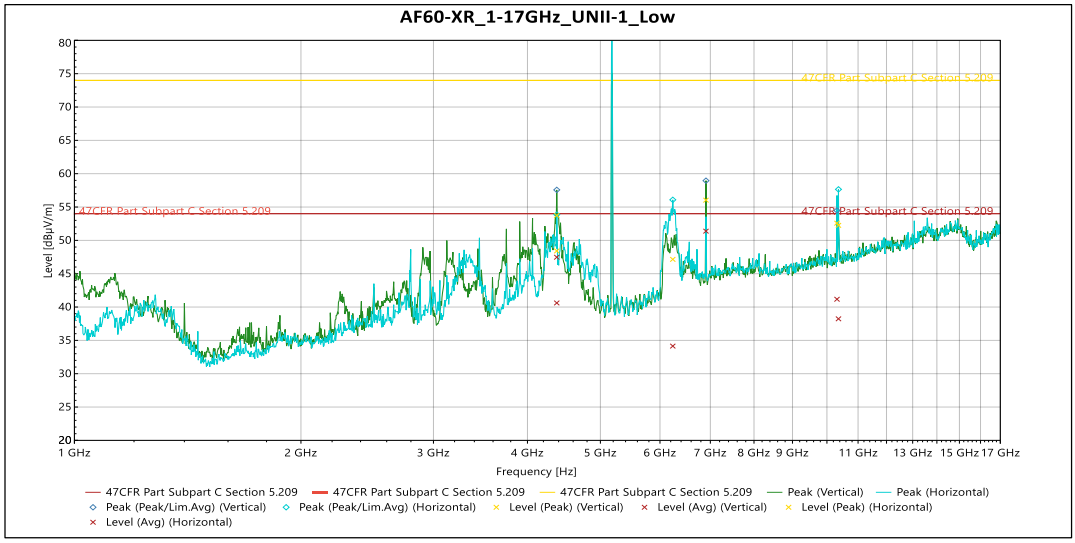
All emissions in the restricted bands of § 15.205 met the limits specified in § 15.209; therefore, the EUT complies with the specification. All emissions me the limits specified in § 15.407(b). Representative band edge plots are included in this report.



QuasiPeak (11)

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height	Pol.	Correction (dB)
30.682	34.08	40.00	-5.92	281.00	1.00	Vertical	-11.88
35.17	22.89	40.00	-17.11	154.00	1.14	Vertical	-11.60
44.253	21.78	40.00	-18.22	264.00	1.33	Vertical	-11.28
95.4	34.73	40.00	-5.27	174.00	1.86	Vertical	-13.88
102.46	28.53	40.00	-11.47	160.00	1.37	Vertical	-13.34
117.14	25.83	40.00	-14.17	269.00	1.15	Vertical	-15.47
122.25	21.54	40.00	-18.46	167.00	1.14	Vertical	-16.15
209.6	34.22	40.00	-5.78	221.00	1.14	Vertical	-14.79
30.938	24.05	40.00	-15.95	74.00	3.13	Horizontal	-11.81
33.65	34.17	40.00	-5.83	310.00	2.42	Horizontal	-11.81
36.999	33.62	40.00	-6.38	292.00	2.41	Horizontal	-11.74

Table 5: Radiated Emissions 30 – 1000 MHz



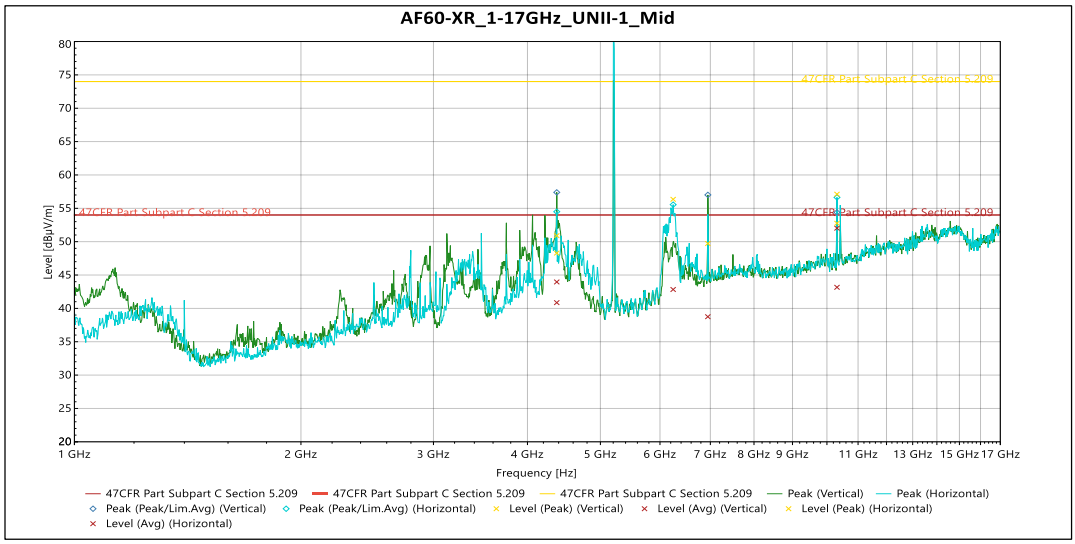
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.375 GHz	48.407	74	-25.593	73	2.218	Vertical	-1.619
6.9066 GHz	56.032	74	-17.968	356	1.638	Vertical	6.655
10.313 GHz	52.582	74	-21.418	351	2.181	Vertical	9.774
4.3751 GHz	53.735	74	-20.265	358	2.045	Horizontal	-1.619
6.2398 GHz	47.152	74	-26.848	1	1.643	Horizontal	4.345
10.36 GHz	52.25	74	-21.75	357	1.824	Horizontal	9.932

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.375 GHz	40.61	54	-13.39	73	2.218	Vertical	-1.619
6.9066 GHz	51.384	54	-2.616	356	1.638	Vertical	6.655
10.313 GHz	41.168	54	-12.832	351	2.181	Vertical	9.774
4.3751 GHz	47.468	54	-6.532	358	2.045	Horizontal	-1.619
6.2398 GHz	34.137	54	-19.863	1	1.643	Horizontal	4.345
10.36 GHz	38.233	54	-15.767	357	1.824	Horizontal	9.932

Table 6: Transmitting on the Lowest Frequency 5180 MHz 1 – 17 GHz



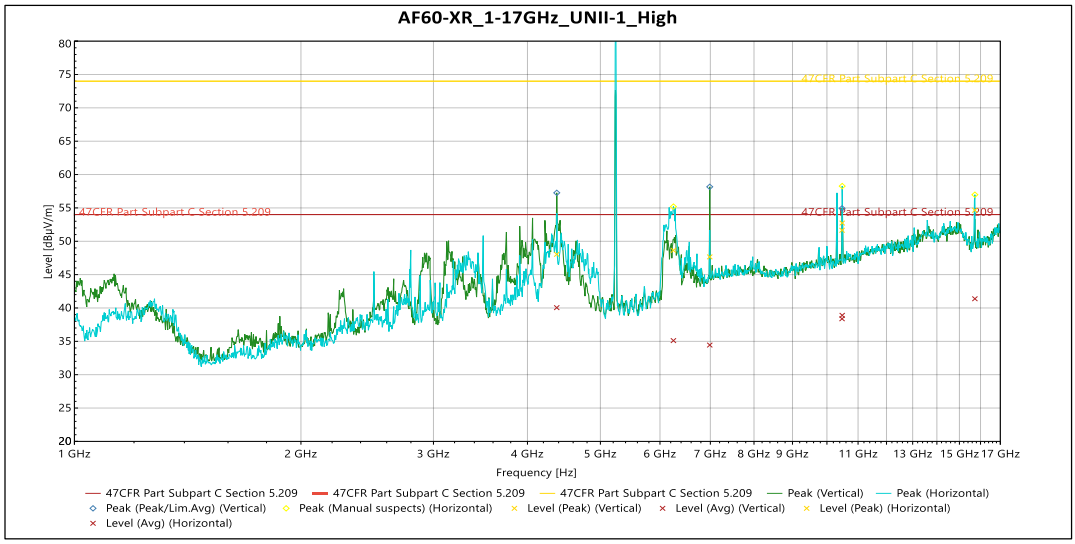
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.375 GHz	48.286	74	-25.714	294	3.793	Vertical	-1.619
6.9465 GHz	49.72	74	-24.28	20	2.041	Vertical	6.475
10.313 GHz	57.115	74	-16.885	1	2.191	Vertical	9.774
4.3751 GHz	50.897	74	-23.103	355	3.096	Horizontal	-1.619
6.2468 GHz	56.345	74	-17.655	1	1.5	Horizontal	4.353
10.313 GHz	52.76	74	-21.24	12	2.001	Horizontal	9.774

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.375 GHz	40.859	54	-13.141	294	3.793	Vertical	-1.619
6.9465 GHz	38.747	54	-15.253	20	2.041	Vertical	6.475
10.313 GHz	52.022	54	-1.978	1	2.191	Vertical	9.774
4.3751 GHz	43.96	54	-10.04	355	3.096	Horizontal	-1.619
6.2468 GHz	42.828	54	-11.172	1	1.5	Horizontal	4.353
10.313 GHz	43.155	54	-10.845	12	2.001	Horizontal	9.774

Table 7: Transmitting on the Middle Frequency 5210 MHz 1 – 17 GHz



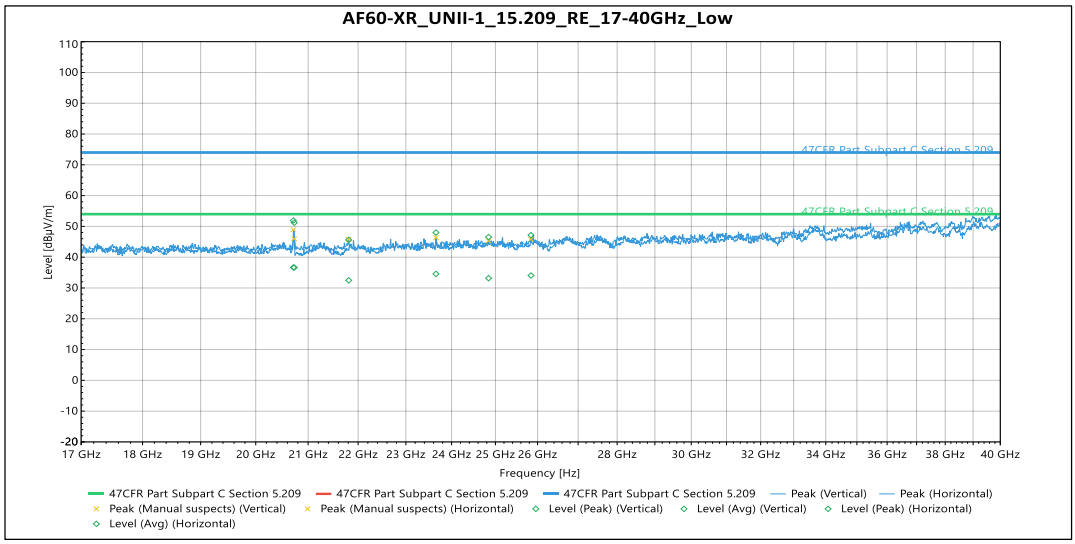
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.3749 GHz	48.037	74	-25.963	300	3.798	Vertical	-1.619
6.9872 GHz	47.661	74	-26.339	282	1.683	Vertical	6.818
10.474 GHz	51.652	74	-22.348	356	1.647	Vertical	10.076
6.2519 GHz	48.644	74	-25.356	4	1.647	Horizontal	4.379
10.479 GHz	52.733	74	-21.267	358	1.692	Horizontal	10.1
15.727 GHz	54.645	74	-19.355	256	3.268	Horizontal	12.037

Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
4.3749 GHz	40.05	54	-13.95	300	3.798	Vertical	-1.619
6.9872 GHz	34.436	54	-19.564	282	1.683	Vertical	6.818
10.474 GHz	38.38	54	-15.62	356	1.647	Vertical	10.076
6.2519 GHz	35.106	54	-18.894	4	1.647	Horizontal	4.379
10.479 GHz	38.901	54	-15.099	358	1.692	Horizontal	10.1
15.727 GHz	41.38	54	-12.62	256	3.268	Horizontal	12.037

Table 8: Transmitting on the Highest Frequency 5240 MHz 1 – 17 GHz



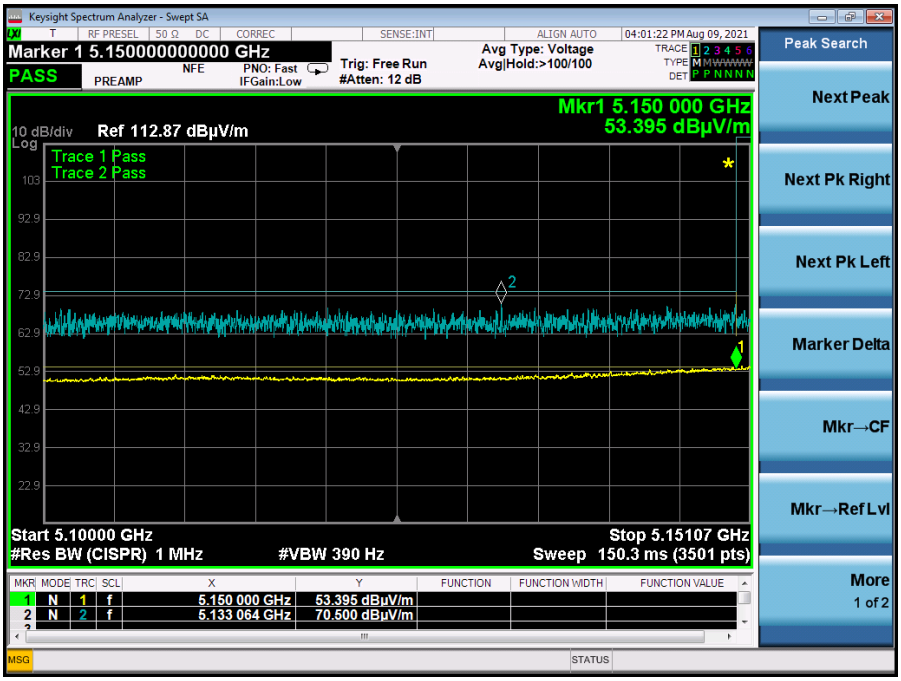
Peak

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
20.73 GHz	51.17	74	-22.83	88	Vertical	-5.475
24.841 GHz	46.527	74	-27.473	162	Vertical	-5.407
25.842 GHz	47.154	74	-26.846	51	Vertical	-5.419
20.714 GHz	51.909	74	-22.091	81	Horizontal	-5.419
21.808 GHz	45.615	74	-28.385	341	Horizontal	-5.694
23.653 GHz	47.986	74	-26.014	233	Horizontal	-4.357

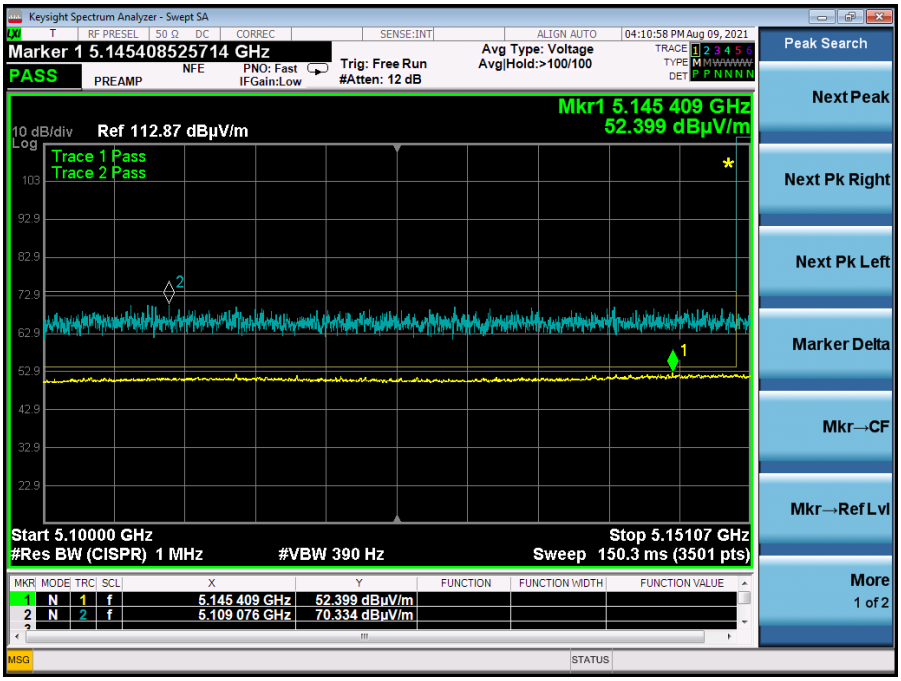
Avg

Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
20.73 GHz	36.645	54	-17.355	88	Vertical	-5.475
24.841 GHz	33.176	54	-20.824	162	Vertical	-5.407
25.842 GHz	34.054	54	-19.946	51	Vertical	-5.419
20.714 GHz	36.656	54	-17.344	81	Horizontal	-5.419
21.808 GHz	32.483	54	-21.517	341	Horizontal	-5.694
23.653 GHz	34.563	54	-19.437	233	Horizontal	-4.357

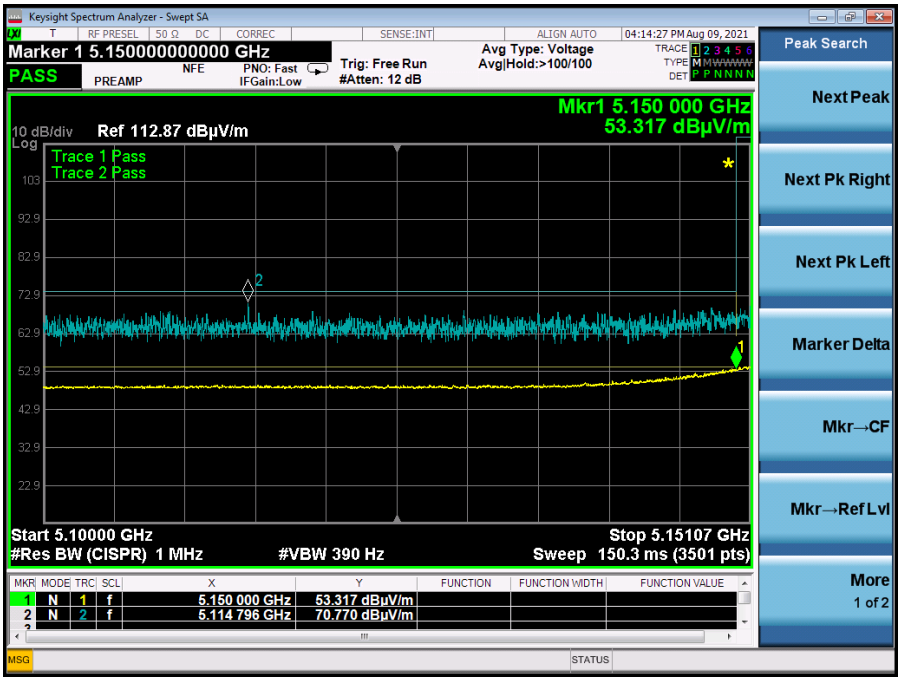
Table 9: Transmitting on the Middle Frequency 5210 MHz 17 – 40 GHz (worse case)



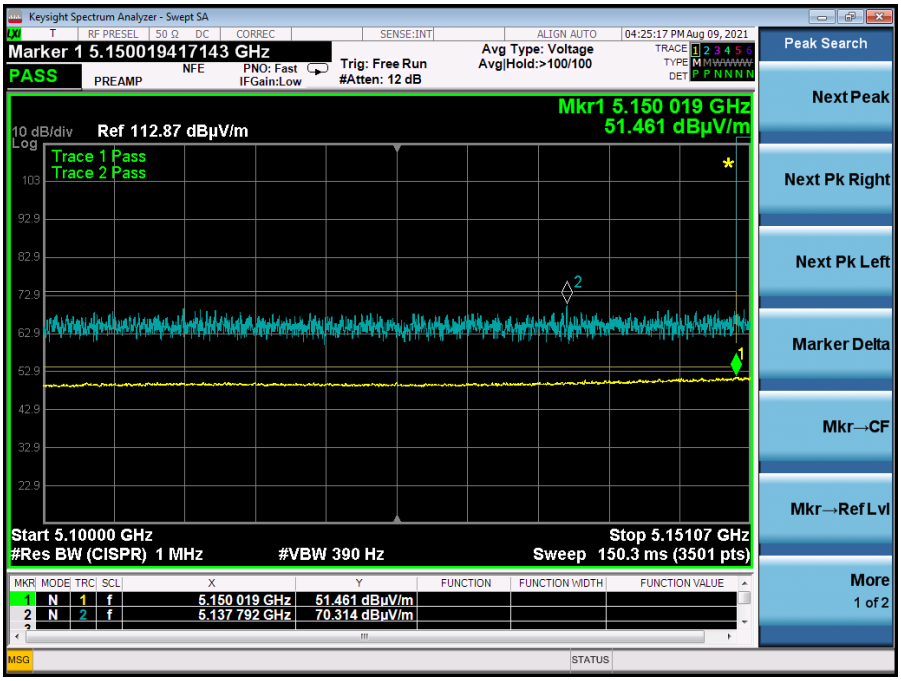
Graph 5: Band Edge ac Mode 20 MHz – 5180 MHz



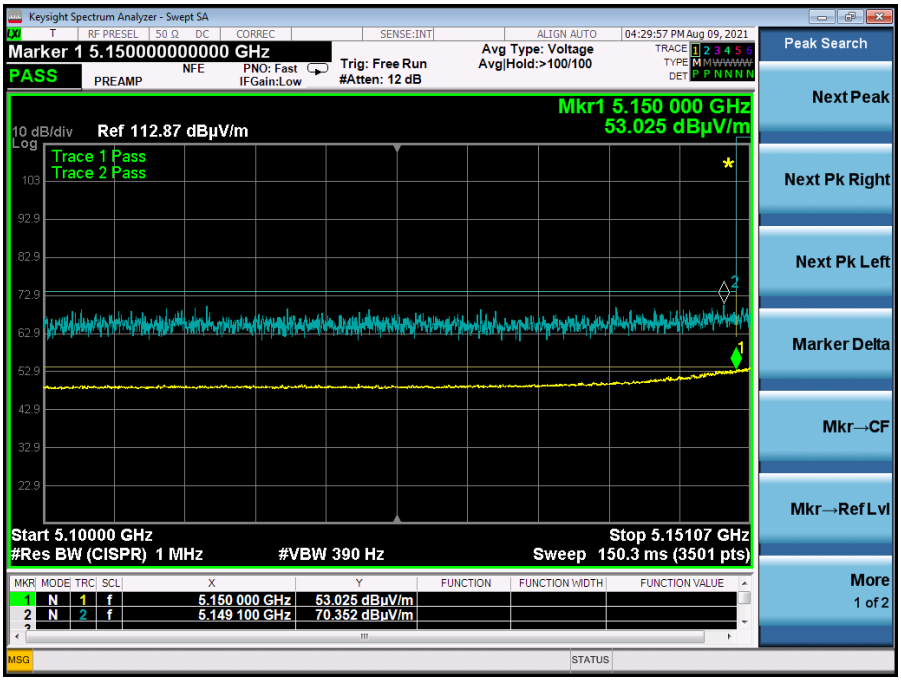
Graph 6: Band Edge ac Mode 20 MHz - 5240 MHz



Graph 7: Band Edge ac Mode 40 MHz - 5190 MHz



Graph 8: Band Edge ac Mode 40 MHz - 5230 MHz



Graph 9: Band Edge ac Mode 80 MHz - 5210 MHz

5.6 §15.407(a) Maximum Power Spectral Density

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

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 17 dBm in any 1 MHz band during any time interval of continuous transmission. The EUT has a 2x2 transmitter and the chains are cross polarized.

Results of this testing are summarized.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5180	Mcs0	42	3.53	-11.0
OFDM 20	5210	Mcs0	44	3.97	-10.6
OFDM 20	5240	Mcs0	43	3.73	-11.0
HT 20	5180	Mcs0	42	3.95	-11.2
HT 20	5210	Mcs0	44	3.92	-10.9
HT 20	5240	Mcs0	43	3.68	-11.3
HT 40	5190	Mcs0	38	3.75	-13.8
HT 40	5210	Mcs0	51	3.60	-14.1
HT 40	5230	Mcs0	52	3.59	-14.5
VHT 20	5180	Mcs0	44	3.99	-10.7
VHT 20	5210	Mcs0	44	3.88	-11.1
VHT 20	5240	Mcs0	43	3.67	-11.2
VHT 40	5190	Mcs0	37	3.75	-14.7
VHT 40	5210	Mcs0	51	3.57	-14.3
VHT 40	5230	Mcs0	52	3.61	-14.3
VHT 80	5210	Mcs0	23	3.97	-16.6

Result

The maximum summed average power spectral density was less than the limit of 17dBm; therefore, the EUT complies with the specification.

-- End of Test Report --