



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-U6PROR
ISED ID	6545A-U6PROR
Equipment Under Test	U6-Pro
Test Report Serial Number	TR5996_02
Date of Test(s)	14, 21, 27 January, 25 February, 31 March, 7, 9 and 19 April 2021
Report Issue Date	22 April 2021

Test Specification	Applicant
47 CFR FCC Part 15, Subpart E	Ubiquiti Inc. 685 Third Avenue New York, NY 10019 U.S.A.



Certification of Engineering Report

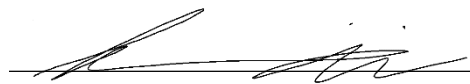
This report has been prepared by Unified Compliance Laboratory (UCL) to document compliance of the device described below with the requirement of Federal Communication Commissions (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with 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	UniFi
Model Number	U6-Pro
FCC ID	SWX-U6PROR
ISED ID	6545A-U6PROR

On this 22nd day of April 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete and correct to the best of my knowledge and are made in good faith.

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

Unified Compliance Laboratory


Written By: Joseph W. Jackson
Reviewed By: Alex Macon

Revision History		
Revision	Description	Date
01	Original Report Release	22 April 2021
02	Updated page 29 to reflect master device status	23 April 2021

Table of Contents

1	Client Information.....	5
1.1	Applicant.....	5
1.2	Manufacturer.....	5
2	Equipment Under Test (EUT).....	6
2.1	Identification of EUT	6
2.2	Description of EUT	6
2.3	EUT and Support Equipment.....	7
2.4	Interface Ports on EUT	7
2.5	Operating Environment.....	7
2.6	Operating Modes.....	7
2.7	EUT Exercise Software.....	7
2.8	Block Diagram of Test Configuration	8
2.9	Modification Incorporated/Special Accessories on EUT.....	8
2.10	Deviation, Opinions Additional Information or Interpretations from Test Standard.....	8
3	Test Specification, Method and Procedures.....	9
3.1	Test Specification.....	9
3.2	Methods & Procedures.....	9
3.3	FCC Part 15, Subpart E.....	9
3.4	Results.....	9
3.5	Test Location	9
4	Test Equipment	11
4.1	Conducted Emissions at Mains Ports.....	11
4.2	Direct Connect at the Antenna Port Tests.....	11
4.3	Radiated Emissions.....	12
4.4	Equipment Calibration	13
4.5	Measurement Uncertainty.....	13
5	Test Results.....	14
5.1	§15.203 Antenna Requirements.....	14
5.2	Conducted Emissions at Mains Ports Data	14
5.3	§15.403(i) 26 dB Emissions Bandwidth	16
5.4	§15.403(a)(1) Maximum Average Output Power	17
5.5	§15.407(b) Spurious Emissions	20
5.6	§15.407(a) Maximum Power Spectral Density.....	26
5.7	DFS Requirement.....	28

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-Pro
Serial Number	FCECDAFFA7DA
Dimensions (cm)	19.7 x 19.7 x 3.5

2.2 Description of EUT

The U6-Pro is a WiFi 6 access point with 5.3Gbps throughput and a 300+ client capacity. The U6-Pro provides reliable wireless coverage across device-dense environments. The U6-Pro is powered from a PoE 802.3at power adapter.

The table below shows the channels used in each band with the different modulation bandwidths.

Band	Modulation Bandwidth	Frequency (MHz)
UNII-2A	20 MHz	5260, 5265, 5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310, 5315, 5320
	40 MHz	5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310
	80 MHz	5290
	160 MHz	5250
UNII-2C	20 MHz	5500, 5505, 5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710, 5715, 5720
	40 MHz	5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710
	80 MHz	5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600, 5605*, 5610*, 5615*, 5620*, 5625*, 5630*, 5635*, 5640*, 5645*, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690
	160 MHz	5570
* Frequency not applicable in Canada		

Table 1: UNII-2A and UNII-2C Channel Settings

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: Unifi MN: U6-Pro (Note 1) SN: FCECDAFFA7DA	WiFi Access Point	See Section 2.4
BN: Ubiquiti MN: U-POE-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
Ethernet/PoE	1	Shielded or Un-Shielded Cat 5e cable

2.5 Operating Environment

Power Supply	120 Vac to 24 Volt PoE Power
AC Mains Frequency	60 Hz
Temperature	21.4 – 22.4 °C
Humidity	15.4 – 21.7 %
Barometric Pressure	1023 mBar

2.6 Operating Modes

The U6-Pro was tested using test software in order to enable to constant transmission of over 98% All emission modes of 802.11 a/n/ac/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 5.55.12 was used to operate the transmitter using a constant transmit mode.

2.8 Block Diagram of Test Configuration

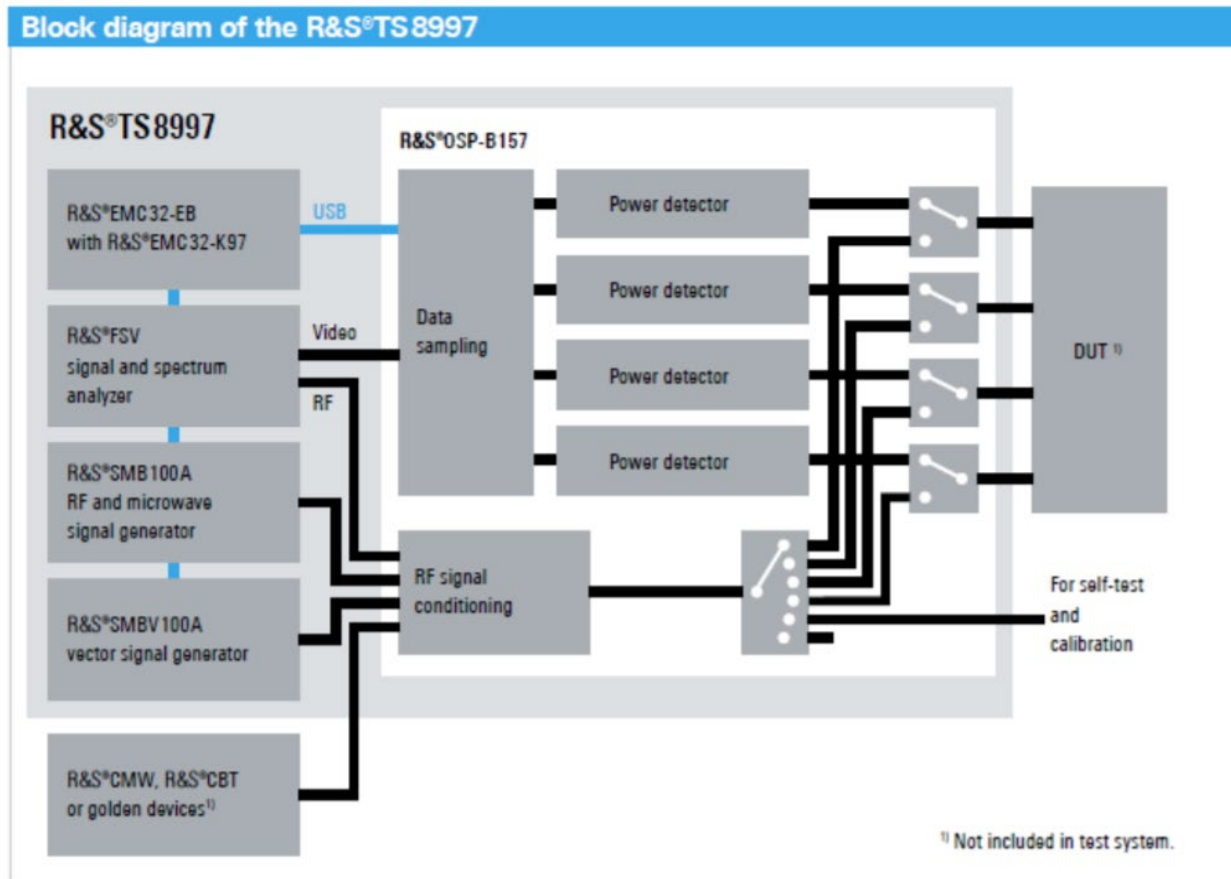


Diagram 1: Test Configuration Block Diagram

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	ISED Section	Environmental Phenomena	Frequency Range (MHZ)	Result
15.407(a)	N/A	Antenna requirements	Structural Requirement	Compliant
15.407(b)	RSS-Gen	Conducted Disturbance at Mains Port	0.15 to 30	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	5260 to 5570	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5260 to 5570	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5260 to 5570	Compliant
15.407(h)	RSS-247 §6.3	DFS Requirements	5260 to 5570	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 558074 and 47 CFR Part 15.				

3.4 Results

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

3.5 Test Location

Testing was performed at the Unified Compliance Laboratory 3-Meter and 10-Meter chambers located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National

Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2021. This site has also been registered with Innovations, Science and Economic Development (ISED) department as was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until June 30, 2021. Unified Compliance Laboratory has been assigned Conformity Assessment Number US0223 by ISED.

4 Test Equipment

4.1 Conducted Emissions at Mains Ports

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	AFJ	FFT3010	UCL-2500	9/18/2020	9/18/2021
LISN	AFJ	LS16C/10	UCL-2512	5/26/2020	5/26/2021
Cat6 ISN	Teseq	ISN T8-Cat6	UCL-2971	5/18/2020	5/18/2021
ISN	Teseq	ISN T800	UCL-2974	6/1/2020	6/1/2021
LISN	Com-Power	LIN-120C	UCL-2612	5/19/2020	5/19/2021
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	UCL	Revision 1	UCL-3107	N/A	N/A

Table 2: List of equipment used for Conducted Emissions Testing at Mains Port

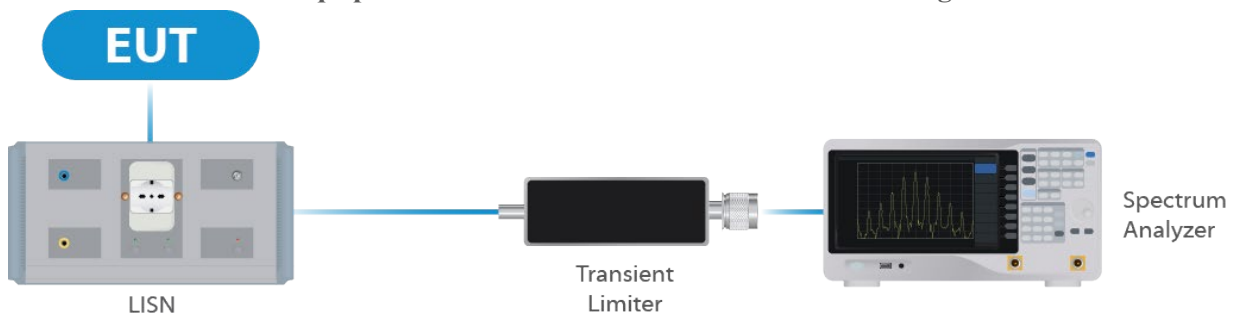


Figure 1: Conducted Emissions Test

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	8/25/2020	8/25/2021
Switch Extension	R&S	OSP-150W	UCL-2870	8/21/2020	8/21/2021

Table 3: List of equipment used for Direct Connect at the Antenna Port

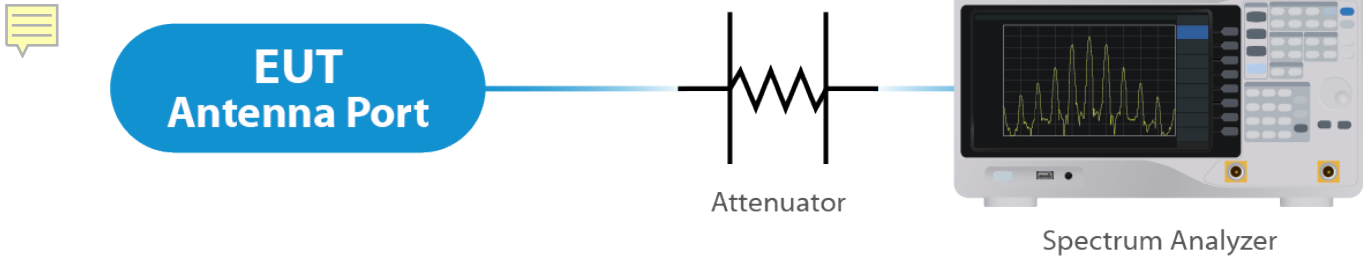


Figure 2: Direct Connect at the Antenna Port Test

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	6/1/2020	6/1/2021
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	9/10/2020	9/10/2021
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	7/8/2020	7/8/2021
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	5/20/2020	5/20/2021
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	5/21/2020	5/21/2021
18 – 40 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 4:List of equipment used for Radiated Emissions

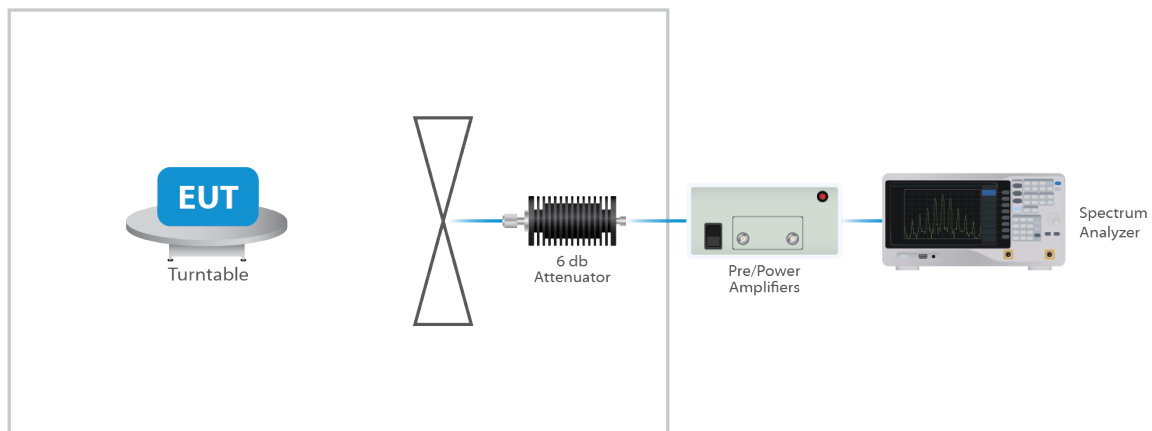


Figure 3: Radiated Emissions Test

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 ($\pm$ 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

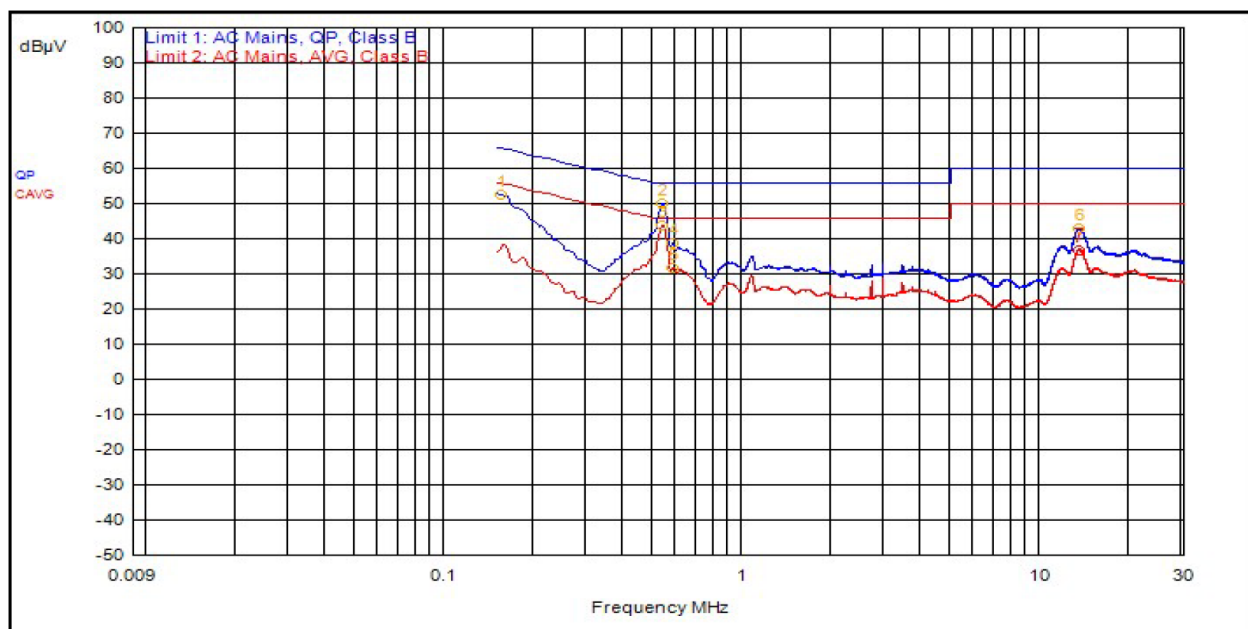
The EUT uses an integral. The Maximum gain of the antenna is 6.0 dBi. The antenna is not user replaceable.

Results

The EUT complied with the specification

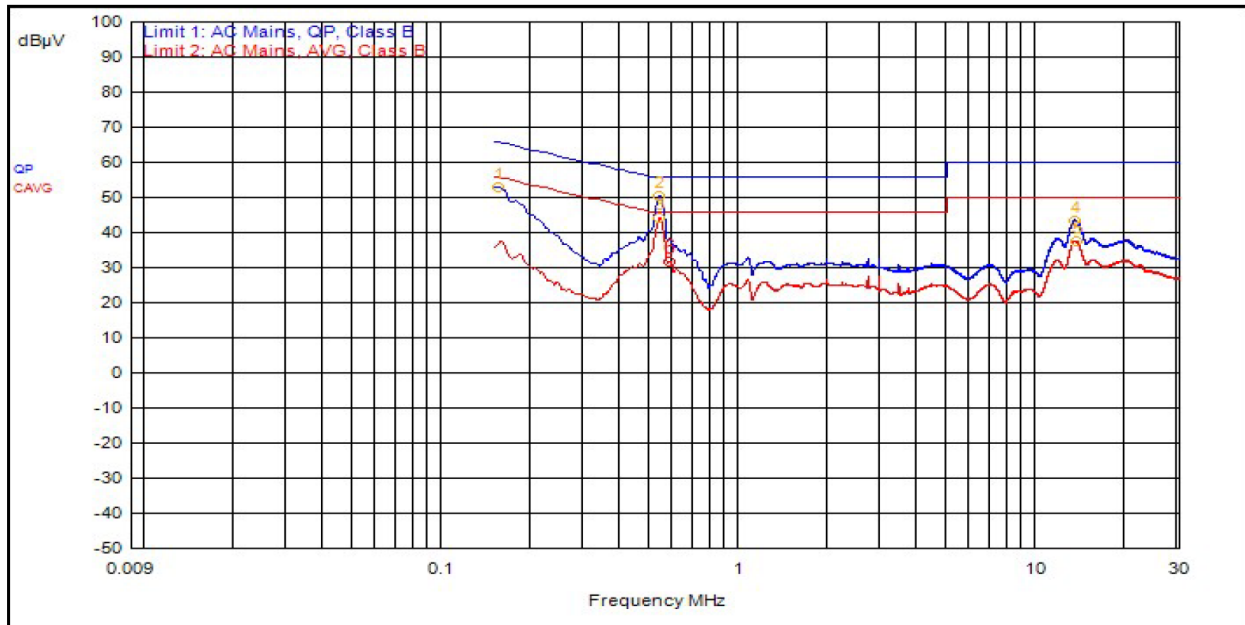
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit	Limit Dist.
3	537.000kHz	12.4	0.0		C_AVG	31.2	43.7	46.0	-2.3
2	537.000kHz	12.4	0.0		QPeak	37.7	50.1	56.0	-5.9
1	153.000kHz	12.4	0.0		QPeak	40.3	52.6	65.8	-13.2
7	13.320MHz	12.4	0.2		C_AVG	24.1	36.8	50.0	-13.2
5	582.000kHz	12.4	0.0		C_AVG	19.4	31.8	46.0	-14.2
6	13.380MHz	12.4	0.2		QPeak	30.3	42.9	60.0	-17.1
4	579.000kHz	12.4	0.0		QPeak	26.4	38.8	56.0	-17.2

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit	Limit Dist.
3	537.000kHz	12.4	0.0		C_AVG	31.9	44.3	46.0	-1.7
2	537.000kHz	12.4	0.0		QPeak	38.1	50.6	56.0	-5.4
5	13.440MHz	12.4	0.2		C_AVG	25.0	37.7	50.0	-12.3
1	153.000kHz	12.4	0.0		QPeak	40.7	53.1	65.8	-12.7
6	579.000kHz	12.4	0.0		C_AVG	19.4	31.8	46.0	-14.2
4	13.380MHz	12.4	0.2		QPeak	30.8	43.4	60.0	-16.6

Result

The EUT complied with the specification limit.

5.3 §15.403(i) 26 dB Emissions Bandwidth

5.3.1 UNII-2A

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
20	5260	19.1	21.7
20	5280	19.2	21.5
20	5320	19.1	22.1
40	5270	37.75	40.2
40	5310	37.75	40.2
80	5290	77.5	83.5
160	5250	155.0	166.0

5.3.2 UNII-2C

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
20	5500	17.7	20.7
20	5600	17.7	21.1
20	5720	17.7	21.2
40	5510	36.25	39.0
40	5590	36.25	39.0
40	5710	36.25	39.45
80	5530	75.5	82.0
80	5610	75.5	82.5
80	5690	75.5	82.5
160	5570	155.0	166.0

Result

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

The maximum average RF conducted output power measured for this device was 23.9 dBm or 245.47 mW. The limit is 24 dBm or 250 mWatt when using antennas with 6 dBi or less gain. The antenna has a maximum gain of 6 dBi.

5.4.1 UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5260	Mcs0	40	23.5	10.1
OFDM 20	5280	Mcs0	40	23.6	9.3
OFDM 20	5320	Mcs0	40	23.8	10.6
HT 20	5260	Mcs0	40	23.2	8.8
HT 20	5280	Mcs0	40	23.1	9.1
HT 20	5320	Mcs0	40	23.5	9.1
HT 40	5270	Mcs0	40	23.6	6.8
HT 40	5310	Mcs0	40	23.7	6.8
VHT 20	5260	Mcs0	40	23.1	8.9
VHT 20	5280	Mcs0	40	23.3	8.8
VHT 20	5320	Mcs0	40	23.5	9.5
VHT 40	5270	Mcs0	40	23.6	6.8
VHT 40	5310	Mcs0	40	23.7	6.6
VHT 80	5290	Mcs0	40	23.5	3.7
VHT 160	5290	Mcs0	40	23.5	1.3
HE 20	5260	Mcs0	40	23.6	9.5
HE 20	5280	Mcs0	40	23.7	8.9
HE 20	5320	Mcs0	40	23.9	9.5
HE 40	5270	Mcs0	40	23.7	6.9
HE 40	5310	Mcs0	40	23.9	6.8
HE 80	5290	Mcs0	40	23.8	4.0
HE 160	5290	Mcs0	40	23.7	1.9

5.4.2 UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5500	Mcs0	39	23.9	10.7
OFDM 20	5600	Mcs0	39	23.9	10.6
OFDM 20	5720	Mcs0	38	23.9	10.5
HT 20	5500	Mcs0	39	23.6	9.8
HT 20	5600	Mcs0	39	23.8	9.9
HT 20	5720	Mcs0	39	23.9	10.0
HT 40	5510	Mcs0	39	23.9	7.8
HT 40	5590	Mcs0	39	23.9	8.0
HT 40	5710	Mcs0	38	23.6	7.5
VHT 20	5500	Mcs0	39	23.6	9.8
VHT 20	5600	Mcs0	39	23.8	9.9
VHT 20	5720	Mcs0	39	23.9	10.1
VHT 40	5510	Mcs0	39	23.9	7.7
VHT 40	5590	Mcs0	39	23.9	8.0
VHT 40	5710	Mcs0	38	23.6	7.6
VHT 80	5530	Mcs0	39	23.8	4.7
VHT 80	5610	Mcs0	39	23.8	4.9
VHT 80	5690	Mcs0	39	23.0	4.7
VHT 160	5570	Mcs0	39	23.8	2.2
HE 20	5500	Mcs0	39	23.6	9.8
HE 20	5600	Mcs0	39	23.8	9.9
HE 20	5720	Mcs0	39	23.9	10.0
HE 40	5510	Mcs0	39	23.9	7.8
HE 40	5590	Mcs0	39	23.9	8.0
HE 40	5710	Mcs0	38	23.6	7.5
HE 80	5530	Mcs0	39	23.8	4.8
HE 80	5610	Mcs0	39	23.8	4.7
HE 80	5690	Mcs0	39	23.9	4.6
HE 160	5570	Mcs0	38	23.6	2.0

Result

In the configuration tested, the maximum average RF outpower was less than 250 mWatt; therefore, the EUT compiled with the requirements of the specification.

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 6 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must remain below -27 dBm EIRP.

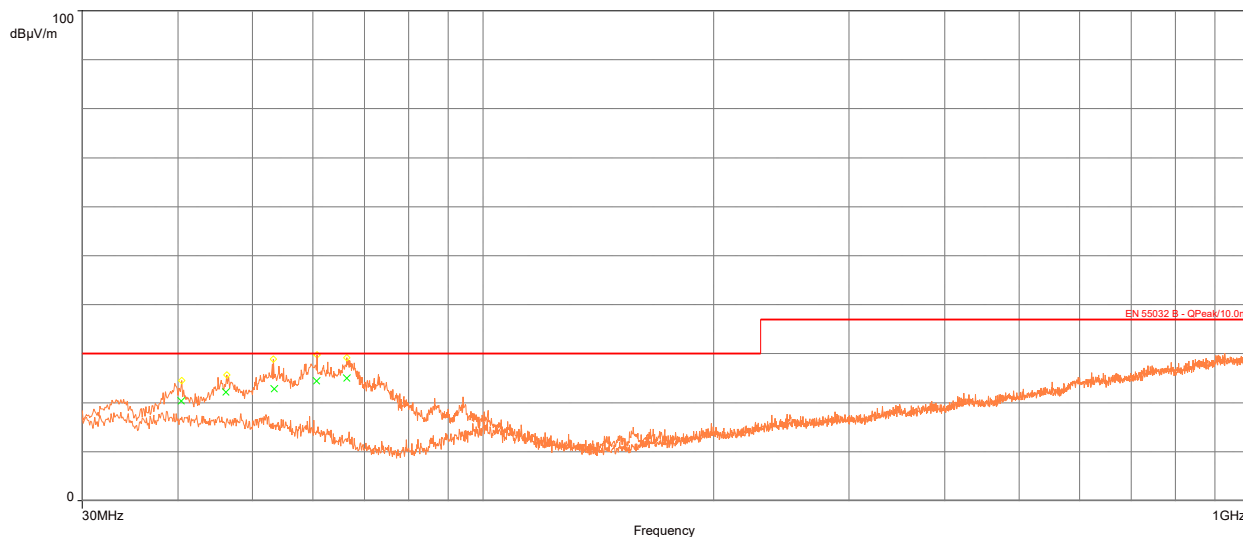
Result

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

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. For frequencies above 18.0 GHz. The emissions in the restricted bands must meet the limits specified in § 15.209. Conducted measurement results are included in the Annex. Radiated data with the EUT transmitting into a load is included below. All emissions between the required frequencies were investigated, the following plots represent the worst case. The “fail” is the transmitted signal exceeding the spurious limit.

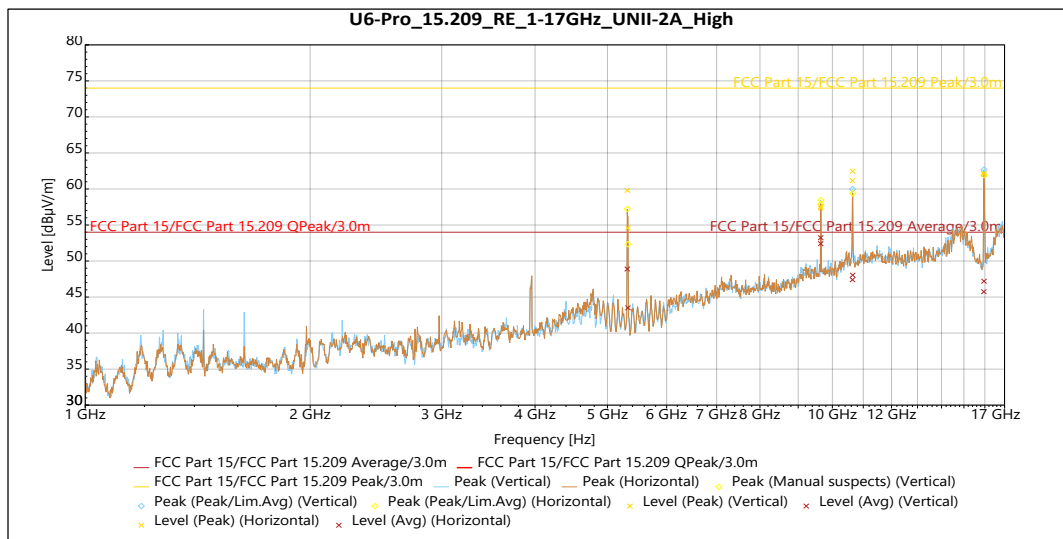
5.5.3 UNII-2A



Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height	Pol.	Correction (dB)
40.37	20.39	30.00	-9.61	338.00	2.10	Vertical	-11.27
46.198	22.18	30.00	-7.82	154.00	2.53	Vertical	-11.23
53.368	22.81	30.00	-7.19	307.00	2.22	Vertical	-12.10
60.662	24.45	30.00	-5.55	351.00	3.87	Vertical	-14.15
66.367	25.01	30.00	-4.99	346.00	3.81	Vertical	-15.87

* No significant emissions were noted in the Horizontal orientation of the antenna

Graph 1: 30 MHz – 1 GHz



Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.6479 GHz	57.338	74	-16.662	5	2.321	Vertical	2.386
10.64 GHz	61.147	74	-12.853	13	2.654	Vertical	5.078
15.958 GHz	62.007	74	-11.993	1	2.654	Vertical	4.807

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
5.3264 GHz	43.503	54	-10.497	16	3.793	Vertical	-8.601
9.6479 GHz	52.411	54	-1.589	5	2.321	Vertical	2.386
10.64 GHz	47.402	54	-6.598	13	2.654	Vertical	5.078
15.958 GHz	47.2	54	-6.8	1	2.654	Vertical	4.807

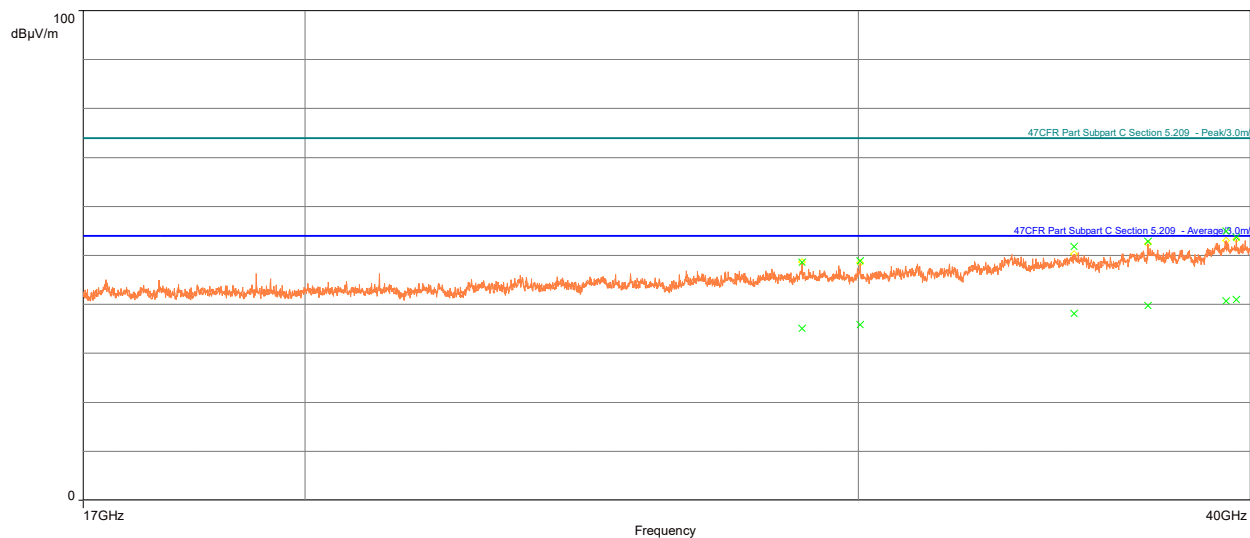
Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.6479 GHz	57.564	74	-16.436	4	1.682	Horizontal	2.386
10.647 GHz	62.459	74	-11.541	8	1.647	Horizontal	5.03
15.95 GHz	62.169	74	-11.831	47	2.203	Horizontal	5.231

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
5.3148 GHz	48.886	54	-5.114	297	1.5	Horizontal	-8.521
9.6479 GHz	53.231	54	-0.769	4	1.682	Horizontal	2.386
10.647 GHz	48.025	54	-5.975	8	1.647	Horizontal	5.03
15.95 GHz	45.739	54	-8.261	47	2.203	Horizontal	5.231

Graph 2: 1 GHz – 17 GHz – High Channel 5320 (Worse Case)

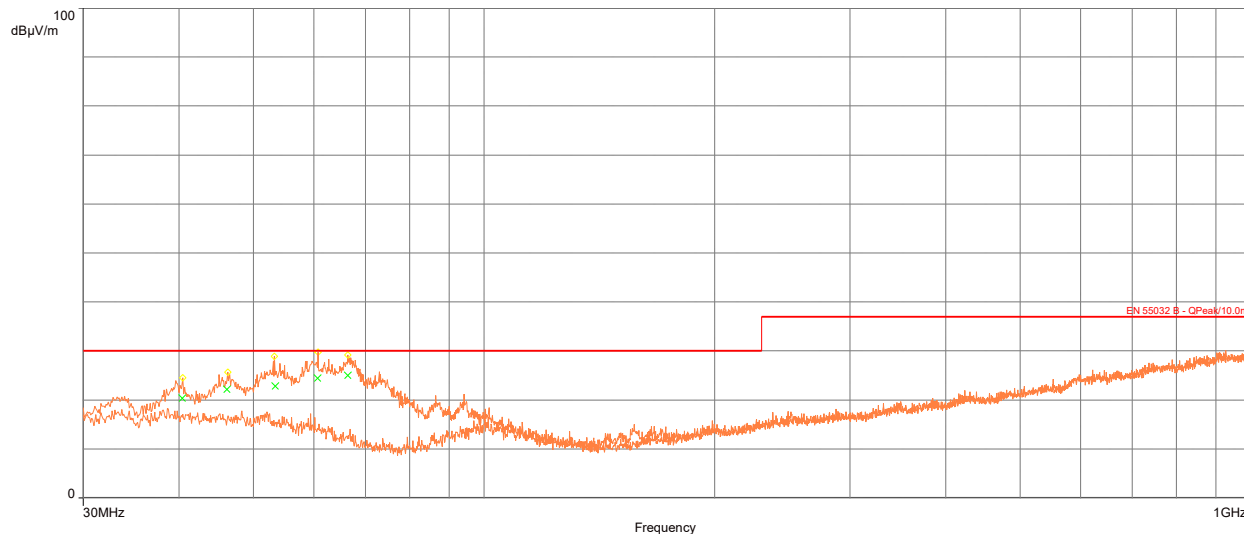


Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
28795	35.09	54.00	-18.91	136.00	Vertical	-4.74
30039	35.85	54.00	-18.15	160.00	Vertical	-2.92
37099	39.73	54.00	-14.27	341.00	Vertical	1.48
39576	40.94	54.00	-13.06	65.00	Vertical	3.34
35136	38.14	54.00	-15.86	351.00	Horizontal	0.87
39283	40.66	54.00	-13.34	323.00	Horizontal	2.92

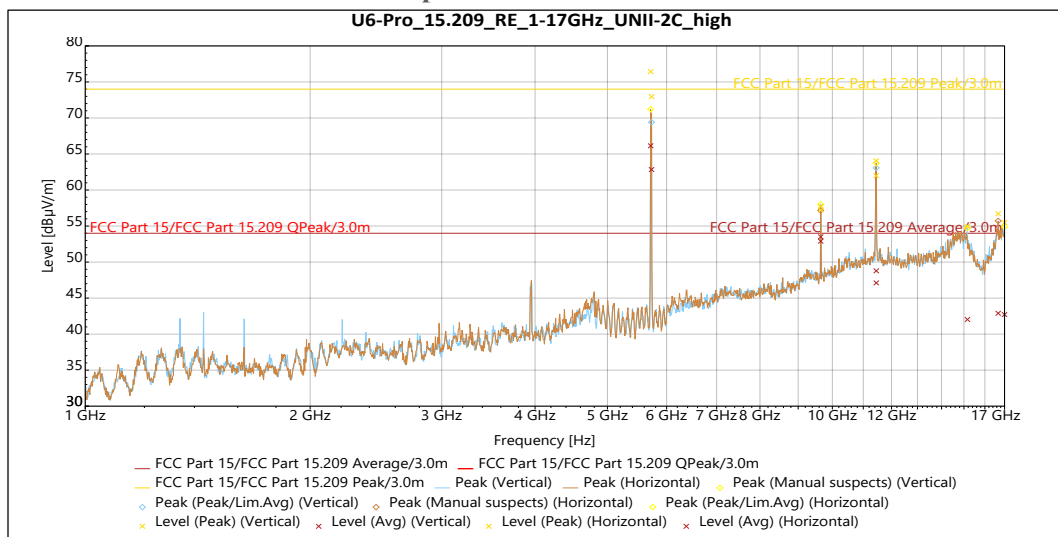
Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
28795	48.57	74.00	-25.43	136.00	Vertical	-4.74
30039	48.88	74.00	-25.12	160.00	Vertical	-2.92
37099	52.90	74.00	-21.10	341.00	Vertical	1.48
39576	53.75	74.00	-20.25	65.00	Vertical	3.34
35136	51.83	74.00	-22.17	351.00	Horizontal	0.87
39283	54.98	74.00	-19.02	323.00	Horizontal	2.92

Graph 3: 17 GHz – 40 GHz – Middle Channel 5280 (Worse Case)
5.5.4 UNII-2C


Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height	Pol.	Correction (dB)
40.37	20.39	30.00	-9.61	338.00	2.10	Vertical	-11.27
46.198	22.18	30.00	-7.82	154.00	2.53	Vertical	-11.23
53.368	22.81	30.00	-7.19	307.00	2.22	Vertical	-12.10
60.662	24.45	30.00	-5.55	351.00	3.87	Vertical	-14.15
66.367	25.01	30.00	-4.99	346.00	3.81	Vertical	-15.87

* No significant emissions were noted in the Horizontal orientation of the antenna

Graph 4: 30 MHz – 1 GHz


Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.6478 GHz	57.207	74	-16.793	331	1.647	Vertical	2.386
11.449 GHz	64.051	74	-9.949	11	3.162	Vertical	5.491
15.162 GHz	54.942	74	-19.058	206	3.798	Vertical	9.176
16.999 GHz	55.487	74	-18.513	50	1.83	Vertical	11.428

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.6478 GHz	52.903	54	-1.097	331	1.647	Vertical	2.386
11.449 GHz	48.777	54	-5.223	11	3.162	Vertical	5.491
15.162 GHz	42.026	54	-11.974	206	3.798	Vertical	9.176
16.999 GHz	42.714	54	-11.286	50	1.83	Vertical	11.428

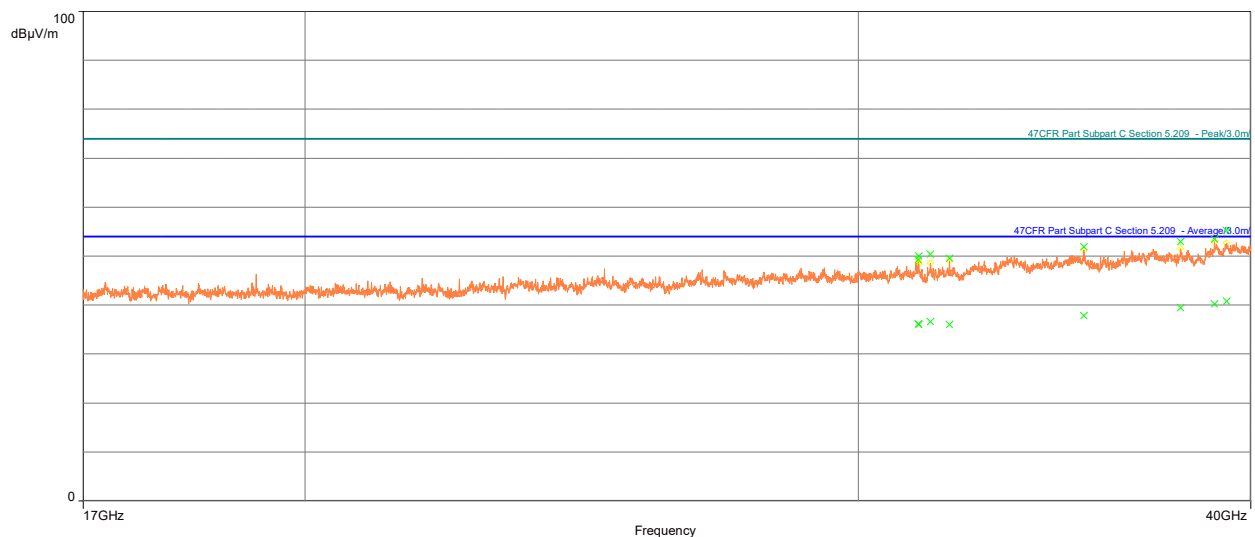
Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.648 GHz	57.754	74	-16.246	16	2.812	Horizontal	2.387
11.449 GHz	61.976	74	-12.024	344	2.812	Horizontal	5.491
16.671 GHz	56.709	74	-17.291	228	1.5	Horizontal	11.407

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
9.648 GHz	53.509	54	-0.491	16	2.812	Horizontal	2.387
11.449 GHz	47.108	54	-6.892	344	2.812	Horizontal	5.491
16.671 GHz	42.889	54	-11.111	228	1.5	Horizontal	11.407

Graph 5: 1 GHz – 16 GHz – High Channel 5720 (Worse Case)



Avg

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
31365	36.00	54.00	-18.00	359.00	Vertical	-0.52
32077	36.05	54.00	-17.95	344.00	Vertical	-0.13
35396	37.83	54.00	-16.17	309.00	Vertical	0.58
38950	40.24	54.00	-13.76	63.00	Vertical	2.92
31356	36.14	54.00	-17.86	147.00	Horizontal	-0.34
31632	36.61	54.00	-17.39	42.00	Horizontal	-0.04
37992	39.45	54.00	-14.55	1.00	Horizontal	1.37
39296	40.82	54.00	-13.18	9.00	Horizontal	3.17

Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
31365	50.05	74.00	-23.95	359.00	Vertical	-0.52
32077	49.53	74.00	-24.47	344.00	Vertical	-0.13
35396	51.91	74.00	-22.09	309.00	Vertical	0.58
38950	53.39	74.00	-20.61	63.00	Vertical	2.92
31356	49.25	74.00	-24.75	147.00	Horizontal	-0.34
31632	50.39	74.00	-23.61	42.00	Horizontal	-0.04
37992	52.92	74.00	-21.08	1.00	Horizontal	1.37
39296	55.25	74.00	-18.75	9.00	Horizontal	3.17

Graph 6: 16 GHz – 40 GHz – Middle Channel 5600 (Worse Case)

5.6 §15.407(a) Maximum Power Spectral Density

The maximum average power spectral density conducted from the intentional radiator of the antenna shall not be greater than 11 dBm in any 1 MHz band during any time interval of continuous transmission. Results of this testing are summarized. With a 6 dBi antenna, the conducted limit for power spectral density is 11 dBm.

5.6.1 UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5260	Mcs0	40	23.5	10.1
OFDM 20	5280	Mcs0	40	23.6	9.3
OFDM 20	5320	Mcs0	40	23.8	10.6
HT 20	5260	Mcs0	40	23.2	8.8
HT 20	5280	Mcs0	40	23.1	9.1
HT 20	5320	Mcs0	40	23.5	9.1
HT 40	5270	Mcs0	40	23.6	6.8
HT 40	5310	Mcs0	40	23.7	6.8
VHT 20	5260	Mcs0	40	23.1	8.9
VHT 20	5280	Mcs0	40	23.3	8.8
VHT 20	5320	Mcs0	40	23.5	9.5
VHT 40	5270	Mcs0	40	23.6	6.8
VHT 40	5310	Mcs0	40	23.7	6.6
VHT 80	5290	Mcs0	40	23.5	3.7
VHT 160	5290	Mcs0	40	23.5	1.3
HE 20	5260	Mcs0	40	23.6	9.5
HE 20	5280	Mcs0	40	23.7	8.9
HE 20	5320	Mcs0	40	23.9	9.5
HE 40	5270	Mcs0	40	23.7	6.9
HE 40	5310	Mcs0	40	23.9	6.8
HE 80	5290	Mcs0	40	23.8	4.0
HE 160	5290	Mcs0	40	23.7	1.9

5.6.2 UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD
OFDM 20	5500	Mcs0	39	23.9	10.7
OFDM 20	5600	Mcs0	39	23.9	10.6
OFDM 20	5720	Mcs0	38	23.9	10.5
HT 20	5500	Mcs0	39	23.6	9.8
HT 20	5600	Mcs0	39	23.8	9.9
HT 20	5720	Mcs0	39	23.9	10.0
HT 40	5510	Mcs0	39	23.9	7.8
HT 40	5590	Mcs0	39	23.9	8.0
HT 40	5710	Mcs0	38	23.6	7.5
VHT 20	5500	Mcs0	39	23.6	9.8
VHT 20	5600	Mcs0	39	23.8	9.9
VHT 20	5720	Mcs0	39	23.9	10.1
VHT 40	5510	Mcs0	39	23.9	7.7
VHT 40	5590	Mcs0	39	23.9	8.0
VHT 40	5710	Mcs0	38	23.6	7.6
VHT 80	5530	Mcs0	39	23.8	4.7
VHT 80	5610	Mcs0	39	23.8	4.9
VHT 80	5690	Mcs0	39	23.0	4.7
VHT 160	5570	Mcs0	39	23.8	2.2
HE 20	5500	Mcs0	39	23.6	9.8
HE 20	5600	Mcs0	39	23.8	9.9
HE 20	5720	Mcs0	39	23.9	10.0
HE 40	5510	Mcs0	39	23.9	7.8
HE 40	5590	Mcs0	39	23.9	8.0
HE 40	5710	Mcs0	38	23.6	7.5
HE 80	5530	Mcs0	39	23.8	4.8
HE 80	5610	Mcs0	39	23.8	4.7
HE 80	5690	Mcs0	39	23.9	4.6
HE 160	5570	Mcs0	38	23.6	2.0

Result

The maximum average power spectral density was less than the limit of 11 dBm; therefore, the EUT complies with the specification.

5.7 DFS Requirement

This product is a master. The outcome of the required DFS tests is located in the DFS Annex. The product passes all required DFS tests for a master device.

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
<i>Non-Occupancy Period</i>	Yes	Not Required	Yes
<i>DFS Detection Threshold</i>	Yes	Not Required	Yes
<i>Channel Availability Check Time</i>	Yes	Not Required	Not Required
<i>U-NII Detection Bandwidth</i>	Yes	Not Required	Yes

Requirement	Operational Mode	
	Master Client Without Radar Detection	Client With Radar Detection
<i>DFS Detection Threshold</i>	Yes	Not Required
<i>Channel Closing Transmission Time</i>	Yes	Yes
<i>Channel Move Time</i>	Yes	Yes
<i>U-NII Detection Bandwidth</i>	Yes	Not Required

-- End of Test Report --