



427 West 12800 South
 Draper, UT 84020

Test Report Certification

FCC ID	SWX-U6MESHR
ISED ID	6545A-U6MESHR
Equipment Under Test	U6-Mesh
Test Report Serial Number	TR6116_01
Date of Test(s)	29, 30 January; 17, 18 February; 16-19, 22-25, 30, 31 March; 31 August; 2-3 September, 2021
Report Issue Date	15 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 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	UniFi
Model Number	U6-Mesh
FCC ID	SWX-U6MESHR
ISED ID	6545A-U6MESHR

On this 15th 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.

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Unified Compliance Laboratory



Written By: Kimberly Rodriguez



Reviewed By: Joseph W. Jackson

Revision History		
Revision	Description	Date
01	Original Report Release	15 September 2021

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1 Client Information

1.1 Applicant

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

1.2 Manufacturer

Company	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
Contact Name	Mark Feil
Title	Compliance Manager

2 Equipment Under Test (EUT)

2.1 Identification of EUT

Brand Name	UniFi
Model Number	U6-Mesh
Serial Number	68D79A1F02AB
Dimensions (cm)	4.85 x 4.85 x 15.95

2.2 Description of EUT

The U6 Mesh is a high-performance access point that uses WiFi 6 technology to provide best-in-class meshing that yields superior wireless coverage in enterprise environments. It delivers an aggregate radio rate of up to 5.3 Gbps with its 5 GHz (4x4 MU-MIMO and OFDMA) and 2.4 GHz, 2x2 MIMO radios. The U6 Mesh's sleek and minimal design allows it to easily blend into any space and its IP65-rated housing makes it ideal for both indoor and outdoor deployment.

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		

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-Mesh (Note 1) SN: 68D79A1F02AB	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 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
Ethernet/PoE	1	Shielded or Un-Shielded Cat 5e cable

2.5 Operating Environment

Power Supply	120 VAC to 48 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	20.8 – 26 °C
Humidity	15.27 – 39.39 %
Barometric Pressure	1015 mBar

2.6 Operating Modes

The U6-Mesh 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/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

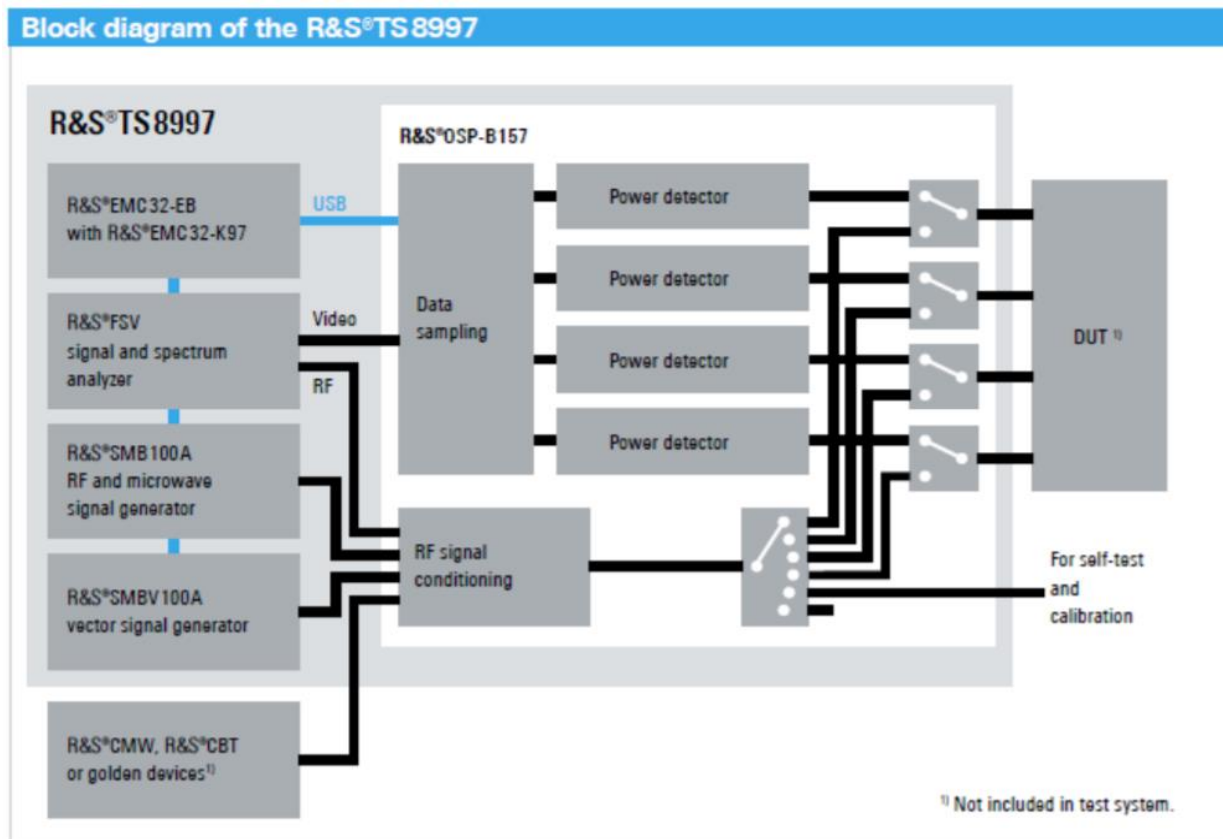


Diagram 1: Test Configuration Block Diagram

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 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 5320	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5260 to 5320	Compliant
15.407(b)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	30 to 40000	NA
15.407(b)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	30 to 40000	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5260 to 5720	Compliant
15.407(h)	RSS-247 §6.3	DFS Requirements	5260 to 5720	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 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 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	5/26/2022
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

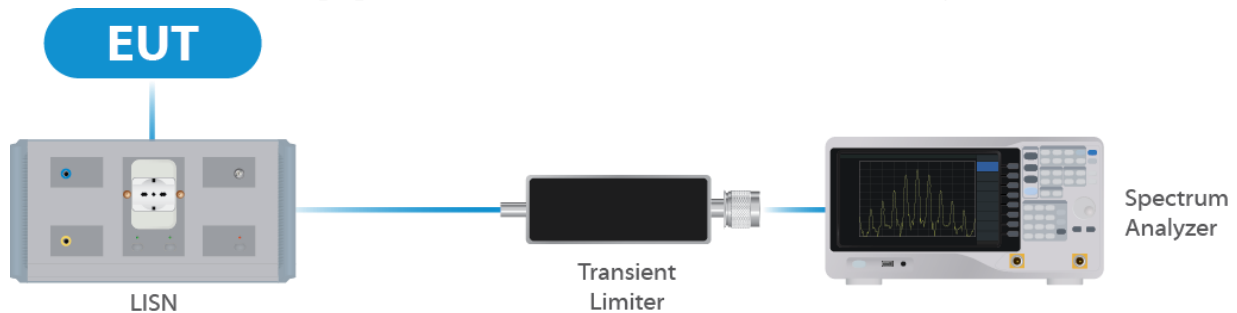


Figure 1: Conducted Emissions Test

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

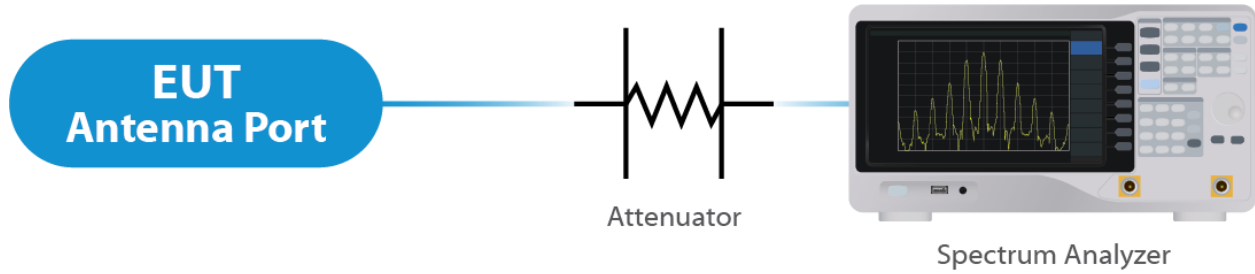


Figure 2: Direct Connect at the Antenna Port Test

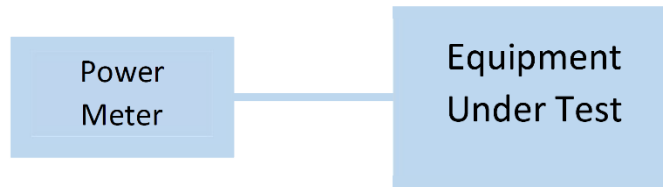


Figure 3: Output Power Measurement

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

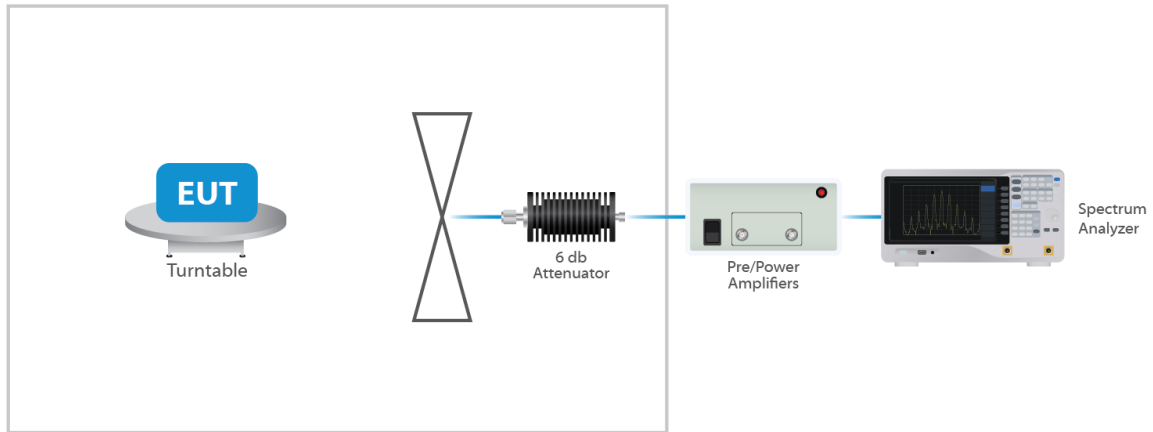


Figure 4: Radiated Emissions Test

4.4 DFS Testing

4.4.1 Master Test Set Up

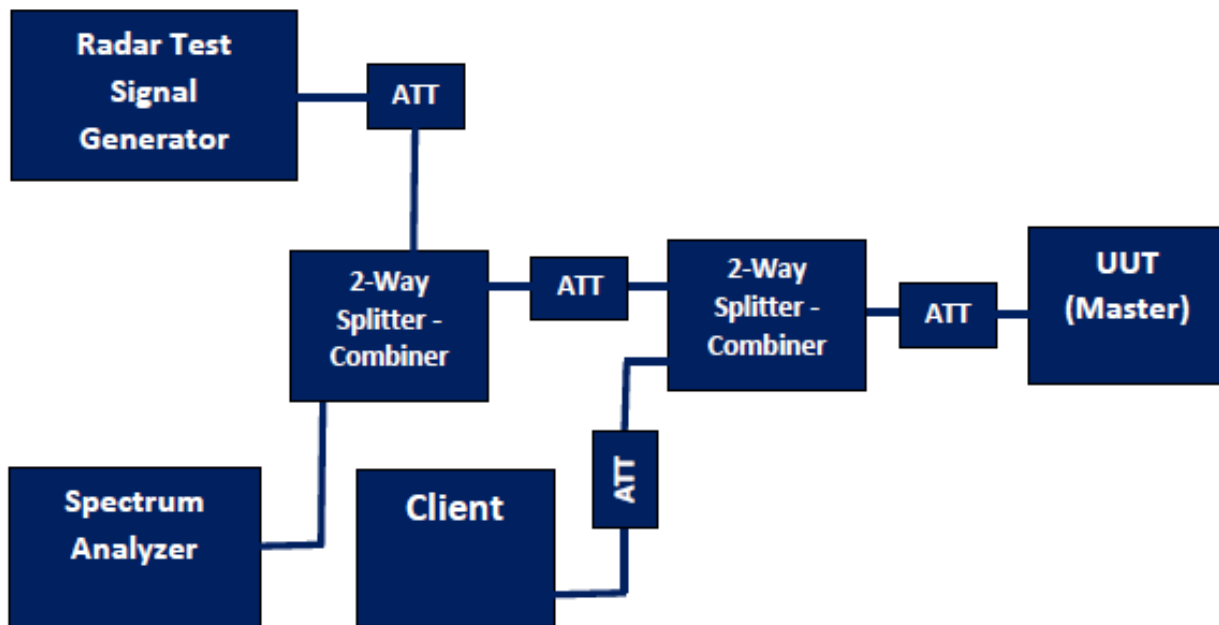


Figure 5: DFS Test Set Up – Master

4.5 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.

4.6 Measurement Uncertainty

Test	Uncertainty (\pm dB)	Confidence (%)
Conducted Emissions	1.44	95
Radiated Emissions (9 kHz to 30 MHz)	2.50	95
Radiated Emissions (30 MHz to 1 GHz)	4.38	95
Radiated Emissions (1 GHz to 18 GHz)	4.37	95
Radiated Emissions (18 GHz to 40 GHz)	3.93	95
Direct Connect Tests	K Factor	Value
Emissions Bandwidth	2	2.0%
Output Power	2	1.0 dB
Peak Power Spectral Density	2	1.3 dB
Band Edge	2	0.8 dB
Transmitter Spurious Emissions	2	1.8 dB

5 Test Results

5.1 §15.203 Antenna Requirements

The EUT uses an integral antenna. The Maximum gain of the antenna 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;

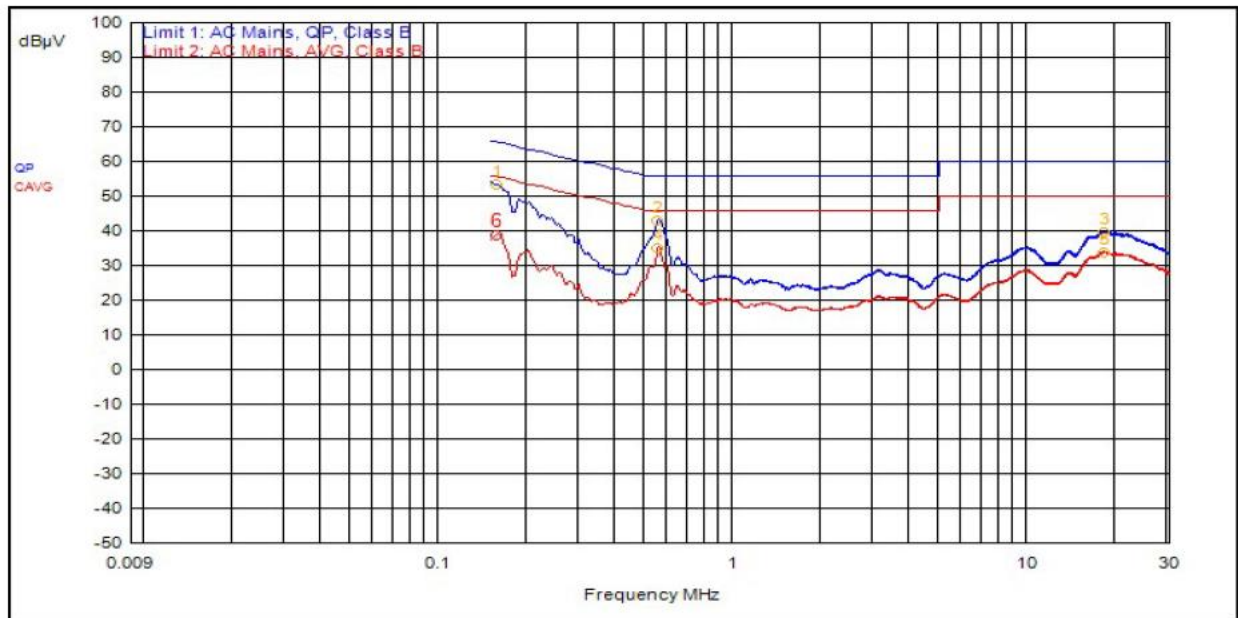
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB = 6.02dB

Results

The EUT complied with the specification

5.2 Conducted Emissions at Mains Ports Data

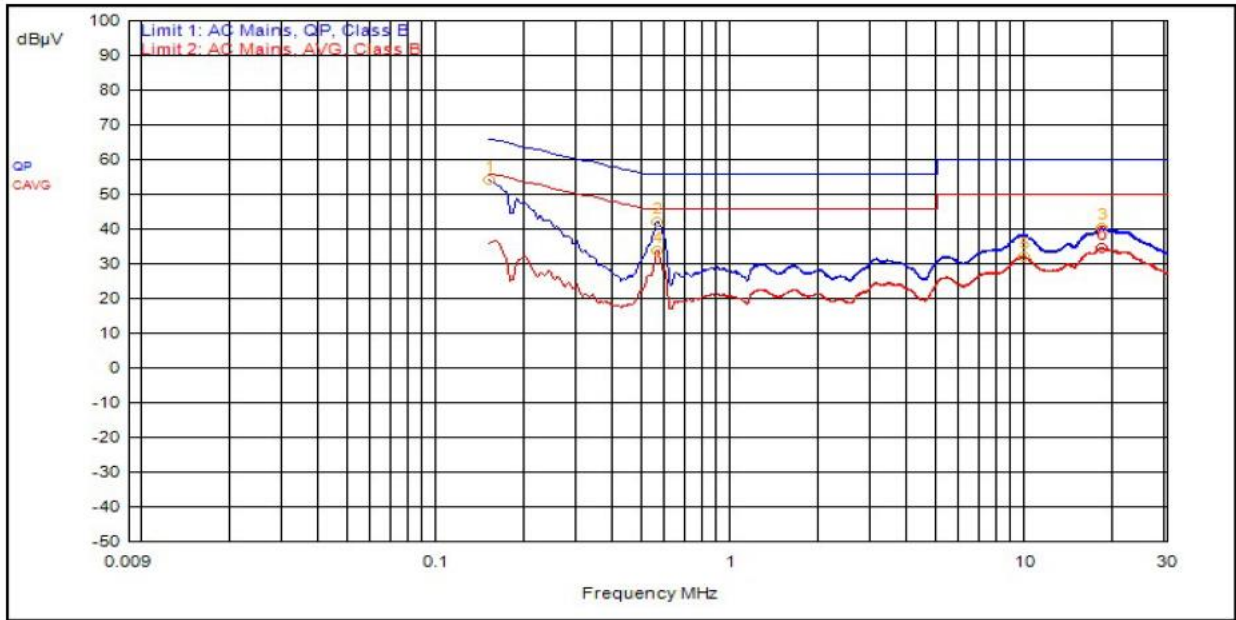
5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit	Limit Dist.
4	552.000kHz	12.4	0.0		C_AVG	22.7	35.1	46.0	-10.9
1	156.000kHz	12.4	0.0		QPeak	40.8	53.2	65.7	-12.4
2	552.000kHz	12.4	0.0		QPeak	30.7	43.1	56.0	-12.9
5	17.889MHz	12.3	0.2		C_AVG	21.4	33.9	50.0	-16.1
6	156.000kHz	12.4	0.0		C_AVG	26.4	38.8	55.7	-16.9
3	17.958MHz	12.3	0.2		QPeak	27.1	39.6	60.0	-20.4

Figure 6: Conducted Emissions – Line_1

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit	Limit Dist.
1	150.000kHz	12.4	0.0		QPeak	41.7	54.1	66.0	-11.9
4	558.000kHz	12.4	0.0		C_AVG	21.5	33.9	46.0	-12.1
2	555.000kHz	12.4	0.0		QPeak	29.6	42.1	56.0	-13.9
6	17.835MHz	12.3	0.2		C_AVG	21.9	34.5	50.0	-15.5
5	9.723MHz	12.3	0.2		C_AVG	19.5	32.0	50.0	-18.0
3	18.036MHz	12.3	0.2		QPeak	27.7	40.3	60.0	-19.7

Figure 7: Conducted Emissions – Neutral

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.

5.3.1 UNII-2A

Mode	Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
a	20	5260	16.6	20.4
a	20	5280	16.6	19.8
a	20	5320	16.5	20.4
ac	20	5260	17.7	22.0
ac	20	5280	17.7	21.6
ac	20	5320	17.7	20.8
ac	40	5270	36.25	21.225
ac	40	5310	36.25	39.3
ac	80	5290	75.5	82.5
ac	160	5250	154.0	167.0
ax	20	5260	19.1	21.4
ax	20	5280	19.1	21.4
ax	20	5320	19.1	21.2
ax	40	5270	37.75	30.05
ax	40	5310	37.75	40.05
ax	80	5290	77.0	82.5
ax	160	5250	154.0	165.0
n	20	5260	17.8	21.3
n	20	5280	17.7	21.0
n	20	5320	17.7	21.5
n	40	5270	36.0	39.0
n	40	5310	36.25	39.45

5.3.2 UNII-2C

Mode	Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
a	20	5500	16.5	19.6
a	20	5600	16.6	20.5
a	20	5720	16.6	15.35
ac	20	5500	17.8	20.7
ac	20	5600	17.7	20.7
ac	20	5720	17.8	20.9
ac	40	5510	36.25	39.45
ac	40	5590	36.25	39.45
ac	40	5710	36.25	39.75
ac	80	5530	75.5	82.5
ac	80	5610	75.5	83.0
ac	80	5690	75.5	83.0
ac	160	5570	153.0	166.0
ax	20	5500	17.8	20.3
ax	20	5600	17.7	21.2
ax	20	5720	17.9	21.7
ax	40	5510	36.25	39.15
ax	40	5590	36.0	39.75
ax	40	5710	36.25	40.05
ax	80	5530	75.5	82.0
ax	80	5610	75.5	82.0
ax	80	5690	75.5	82.5
ax	160	5570	155.0	165.0
n	20	5500	17.7	20.8
n	20	5600	17.8	21.3

n	20	5720	17.9	21.2
n	40	5510	36.25	39.75
n	40	5590	36.25	38.85
n	40	5710	36.25	39.45

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 23.9 dBm or 245.47 mW. The limit is 24 dBm or 250 mW when using antennas with 6 dBi or less gain. The antenna has a maximum gain of 5 dBi.

5.4.1 UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5260	Mcs0	40.5	23.6	10.2
OFDM 20	5280	Mcs0	40.5	23.8	10.3
OFDM 20	5320	Mcs0	40	23.9	10.6
HT 20	5260	Mcs0	40	23.3	8.7
HT 20	5280	Mcs0	40	23.5	9.1
HT 20	5320	Mcs0	40	23.6	8.9
HT 40	5270	Mcs0	40	23.8	6.7
HT 40	5310	Mcs0	40	23.9	6.9
VHT 20	5260	Mcs0	40	23.3	8.7
VHT 20	5280	Mcs0	40	23.5	8.9
VHT 20	5320	Mcs0	40	23.6	8.8
VHT 40	5270	Mcs0	40	23.4	6.9
VHT 40	5310	Mcs0	40	23.9	6.8
VHT 80	5290	Mcs0	40	23.6	3.6
VHT 160	5250	Mcs0	40	23.7	1.4
HE 20	5260	Mcs0	40	23.8	9.1
HE 20	5280	Mcs0	40	23.9	9.3
HE 20	5320	Mcs0	39	23.5	8.7
HE 40	5270	Mcs0	40	23.9	6.8
HE 40	5310	Mcs0	40	23.9	6.7
HE 80	5290	Mcs0	40	23.9	3.7
HE 160	5250	Mcs0	40	23.9	1.6

5.4.2 UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power*	Measured PSD
OFDM 20	5500	Mcs0	40	23.7	10.2
OFDM 20	5600	Mcs0	40	23.5	10
OFDM 20	5720	Mcs0	41	23.7	10.3
HT 20	5500	Mcs0	40	23.5	9.3
HT 20	5600	Mcs0	41	23.7	9.6
HT 20	5720	Mcs0	42	23.9	10
HT 40	5510	Mcs0	40	23.8	7.4
HT 40	5590	Mcs0	40	23.6	7.4
HT 40	5710	Mcs0	40	23.4	7
VHT 20	5500	Mcs0	40	23.4	9.3
VHT 20	5600	Mcs0	41	23.7	9.5
VHT 20	5720	Mcs0	36	20.6	6.9
VHT 40	5510	Mcs0	40	23.8	7.4
VHT 40	5590	Mcs0	40	23.6	7.3
VHT 40	5710	Mcs0	41	23.9	7.5
VHT 80	5530	Mcs0	40	23.6	4.3
VHT 80	5610	Mcs0	40	23.4	4.1
VHT 80	5690	Mcs0	41	23.7	4.3
VHT 160	5570	Mcs0	40	23.7	1.5
HE 20	5500	Mcs0	40	23.4	9.3
HE 20	5600	Mcs0	41	23.7	9.6
HE 20	5720	Mcs0	41	23.4	9.5
HE 40	5510	Mcs0	40	23.8	7.4
HE 40	5590	Mcs0	40	23.6	7.3
HE 40	5710	Mcs0	41	23.8	7.5
HE 80	5530	Mcs0	40	23.6	4.4
HE 80	5610	Mcs0	41	23.9	4.5
HE 80	5690	Mcs0	41	23.7	4.3
HE 160	5570	Mcs0	40	23.9	1.8

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 plots in attached Annex).

* Gated EIRP shown in the Annex is the conducted measurement

5.5 §15.407(b) Spurious Emissions

5.5.1 Conducted Spurious Emissions

The frequency ranges from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental frequency were 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 5 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

The emissions must be below -27 dBm EIRP.

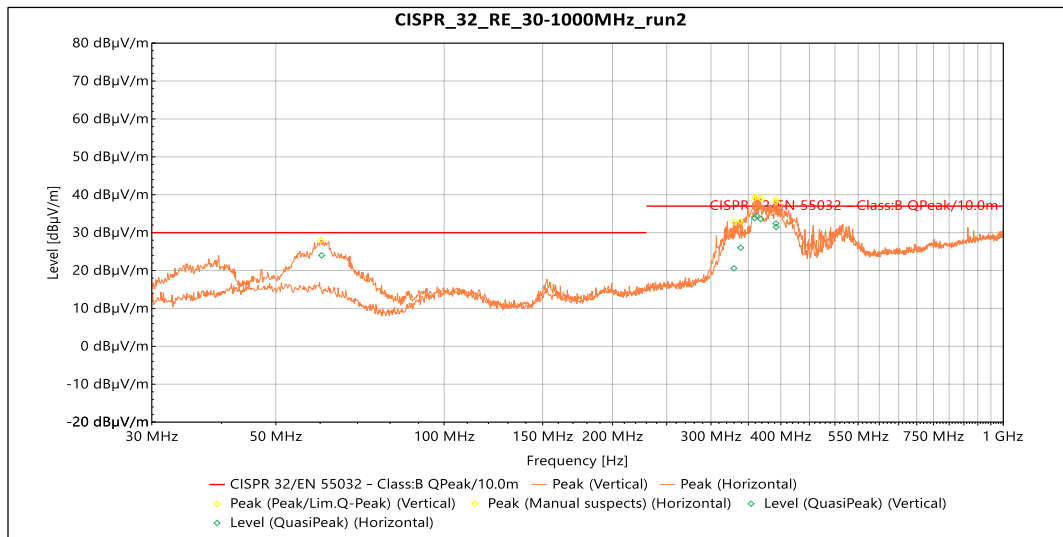
Result

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

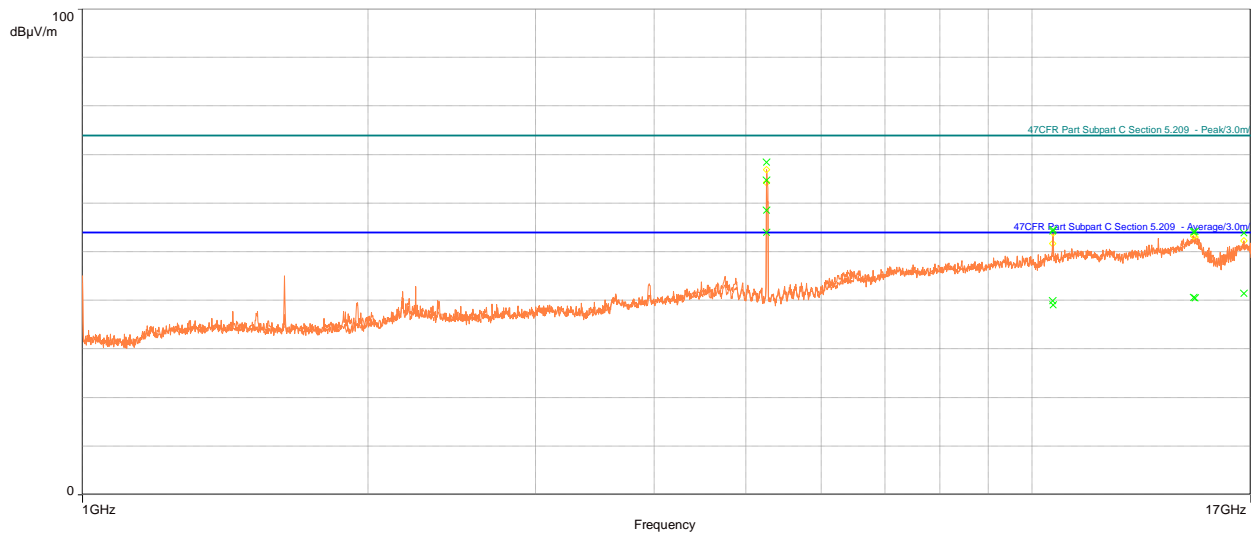
The frequency ranges from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental emissions were investigated to measure any radiated emissions in the restricted bands. For frequencies above 18.0 GHz. The emissions in the restricted bands must meet the limits 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.

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

5.5.3 UNII-2A


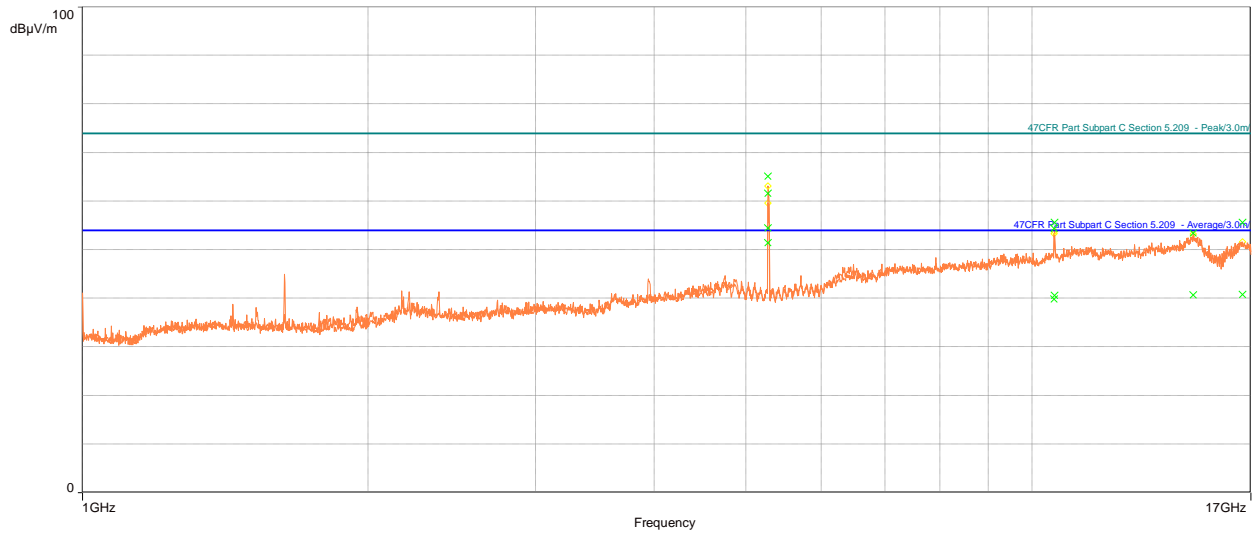
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
60.366	QP	24.005	30	-5.995	197	3.364	Vertical	-13.501
329.7	QP	20.569	37	-16.431	85	1.304	Vertical	-11.089
339.04	QP	26.006	37	-10.994	333	0.994	Vertical	-10.592
362.31	QP	34.472	37	-2.528	168	3.9	Vertical	-10.194
392.33	QP	31.485	37	-5.515	134	3.756	Vertical	-9.193
359.24	QP	33.842	37	-3.158	269	2.812	Horizontal	-10.362
368.35	QP	33.581	37	-3.419	269	2.697	Horizontal	-9.994
392.08	QP	32.41	37	-4.59	245	2.073	Horizontal	-9.2

Graph 1: 30 MHz – 1 GHz



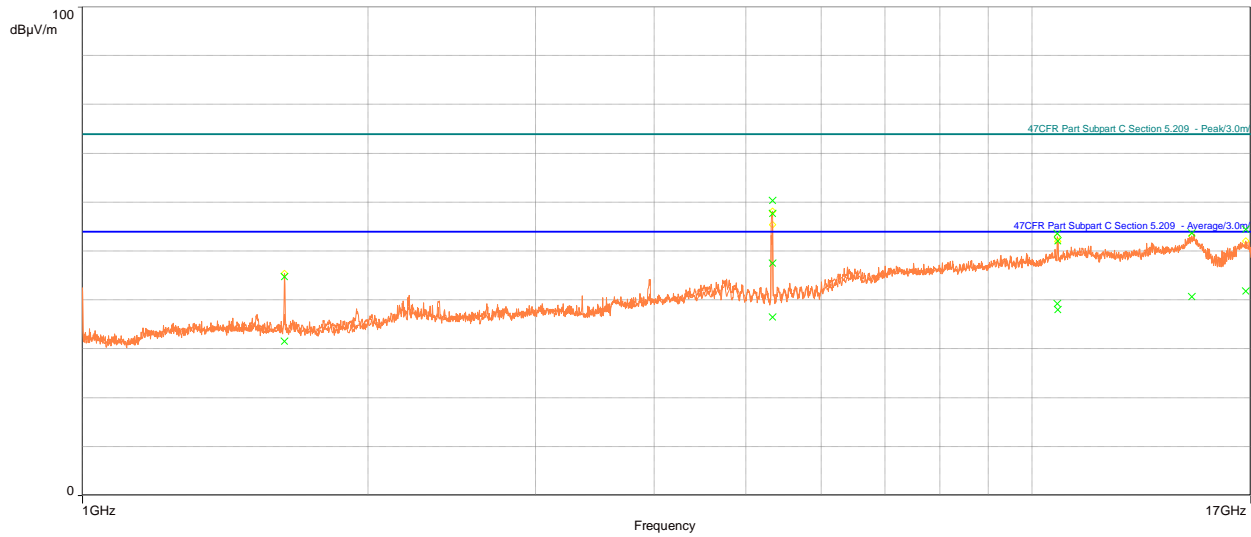
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
10515	A	39.93	54.00	-14.07	253.00	3.69	Vertical	13.83
14845	A	40.49	54.00	-13.51	259.00	1.50	Vertical	18.27
16711	A	41.45	54.00	-12.55	123.00	3.35	Vertical	19.66
10521	A	39.04	54.00	-14.96	29.00	2.51	Horizontal	13.88
14800	A	40.56	54.00	-13.44	207.00	2.97	Horizontal	18.21
10515	P	54.30	74.00	-19.70	253.00	3.69	Vertical	13.83
14845	P	54.20	74.00	-19.80	259.00	1.50	Vertical	18.27
16711	P	53.86	74.00	-20.14	123.00	3.35	Vertical	19.66
10521	P	54.57	74.00	-19.43	29.00	2.51	Horizontal	13.88
14800	P	54.12	74.00	-19.88	207.00	2.97	Horizontal	18.21

Graph 2: 1 GHz – 17 GHz (Low Channel)



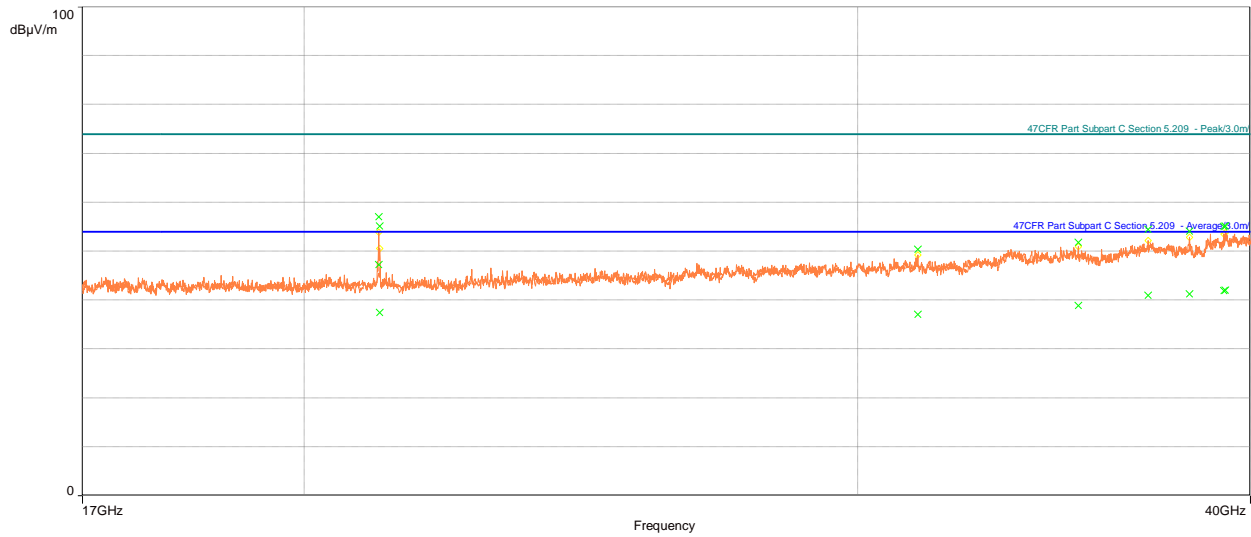
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
10554	A	39.88	54.00	-14.12	232.00	1.98	Vertical	14.04
14788	A	40.68	54.00	-13.32	73.00	1.74	Vertical	18.19
16651	A	40.83	54.00	-13.17	338.00	1.99	Vertical	19.19
10559	A	40.59	54.00	-13.41	356.00	2.39	Horizontal	14.03
10554	P	54.36	74.00	-19.64	232.00	1.98	Vertical	14.04
14788	P	53.46	74.00	-20.54	73.00	1.74	Vertical	18.19
16651	P	55.64	74.00	-18.36	338.00	1.99	Vertical	19.19
10559	P	55.62	74.00	-18.38	356.00	2.39	Horizontal	14.03

Graph 3: 1 GHz – 17 GHz (Middle Channel)



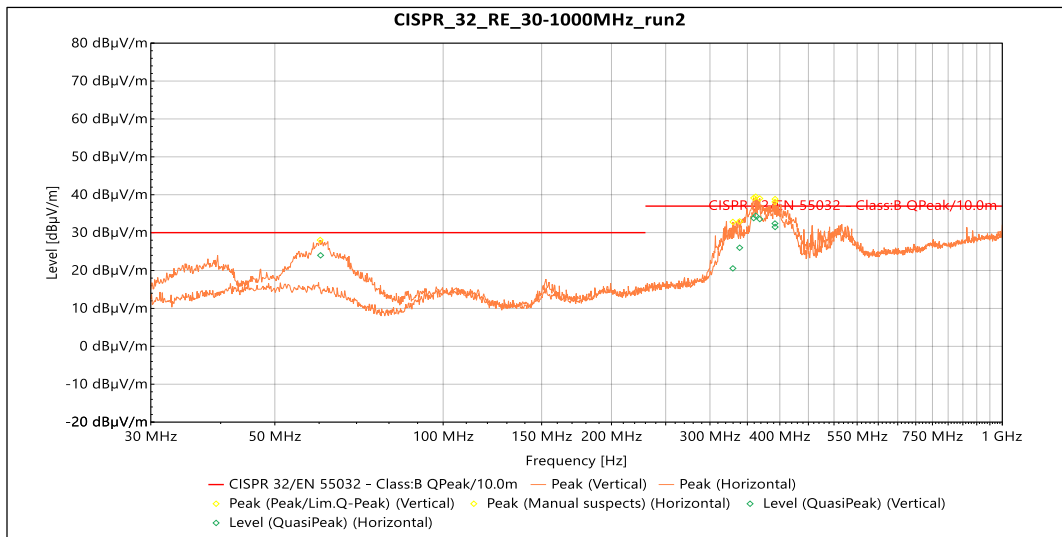
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
10645	A	38.03	54.00	-15.97	102.00	4.00	Vertical	14.07
14735	A	40.71	54.00	-13.29	180.00	3.43	Vertical	18.33
16787	A	41.83	54.00	-12.17	25.00	3.32	Vertical	20.08
1631.1	A	31.52	54.00	-22.48	105.00	2.25	Horizontal	-7.25
10637	A	39.24	54.00	-14.76	310.00	2.38	Horizontal	14.10
10645	P	52.07	74.00	-21.93	102.00	4.00	Vertical	14.07
14735	P	53.69	74.00	-20.31	180.00	3.43	Vertical	18.33
16787	P	54.46	74.00	-19.54	25.00	3.32	Vertical	20.08
1631.1	P	44.77	74.00	-29.23	105.00	2.25	Horizontal	-7.25
10637	P	53.58	74.00	-20.42	310.00	2.38	Horizontal	14.10

Graph 4: 1 GHz – 17 GHz (High Channel)



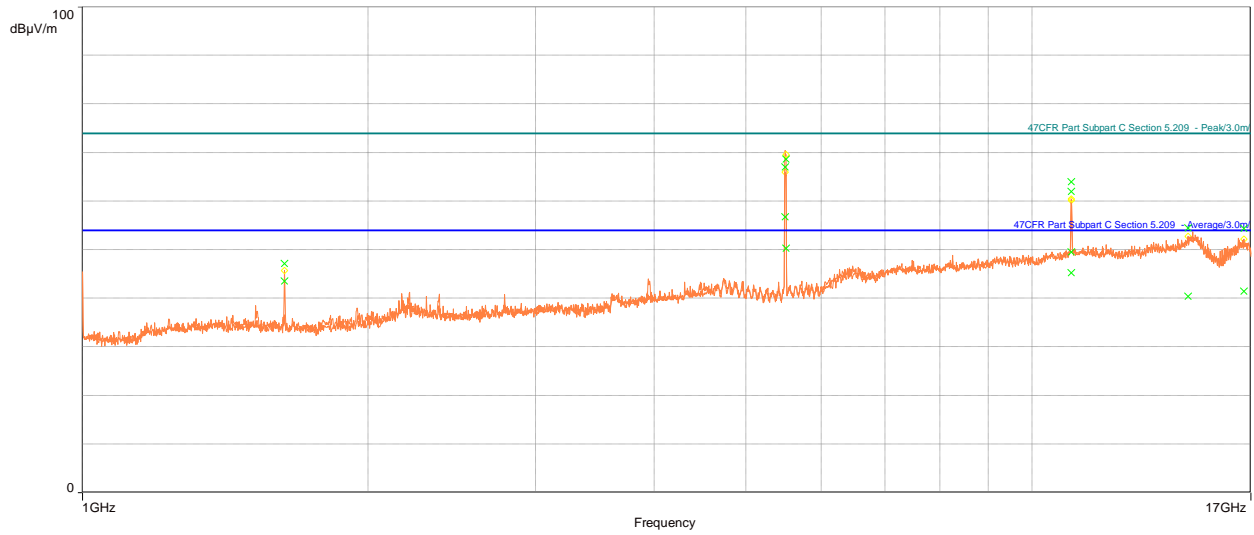
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Polarization	Correction (dB)
31356	A	37.07	54.00	-16.93	155.00	Vertical	-0.34
35259	A	38.85	54.00	-15.15	9.00	Vertical	0.79
38251	A	41.23	54.00	-12.77	359.00	Vertical	1.29
39269	A	42.01	54.00	-11.99	334.00	Vertical	2.94
21120	A	47.25	54.00	-6.75	208.00	Horizontal	-5.49
21139	A	37.49	54.00	-16.51	194.00	Horizontal	-5.64
37114	A	40.95	54.00	-13.05	230.00	Horizontal	1.18
39231	A	41.90	54.00	-12.10	246.00	Horizontal	3.08
31356	P	50.39	74.00	-23.61	155.00	Vertical	-0.34
35259	P	51.86	74.00	-22.14	9.00	Vertical	0.79
38251	P	54.05	74.00	-19.95	359.00	Vertical	1.29
39269	P	55.14	74.00	-18.86	334.00	Vertical	2.94
21120	P	57.07	74.00	-16.93	208.00	Horizontal	-5.49
21139	P	55.11	74.00	-18.89	194.00	Horizontal	-5.64
37114	P	54.45	74.00	-19.55	230.00	Horizontal	1.18
39231	P	55.06	74.00	-18.94	246.00	Horizontal	3.08

Graph 5: 17 GHz – 40 GHz (Worst Case – Middle Channel)

5.5.4 UNII-2C


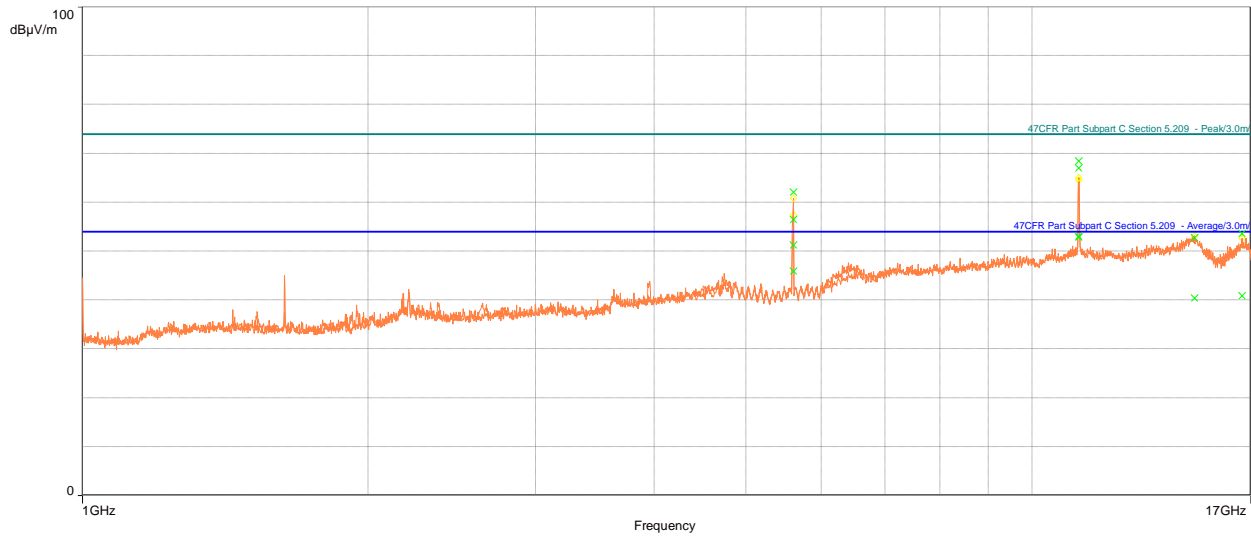
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
60.366	QP	24.005	30	-5.995	197	3.364	Vertical	-13.501
329.7	QP	20.569	37	-16.431	85	1.304	Vertical	-11.089
339.04	QP	26.006	37	-10.994	333	0.994	Vertical	-10.592
362.31	QP	34.472	37	-2.528	168	3.9	Vertical	-10.194
392.33	QP	31.485	37	-5.515	134	3.756	Vertical	-9.193
359.24	QP	33.842	37	-3.158	269	2.812	Horizontal	-10.362
368.35	QP	33.581	37	-3.419	269	2.697	Horizontal	-9.994
392.08	QP	32.41	37	-4.59	245	2.073	Horizontal	-9.2

Graph 6: 30 MHz – 1 GHz



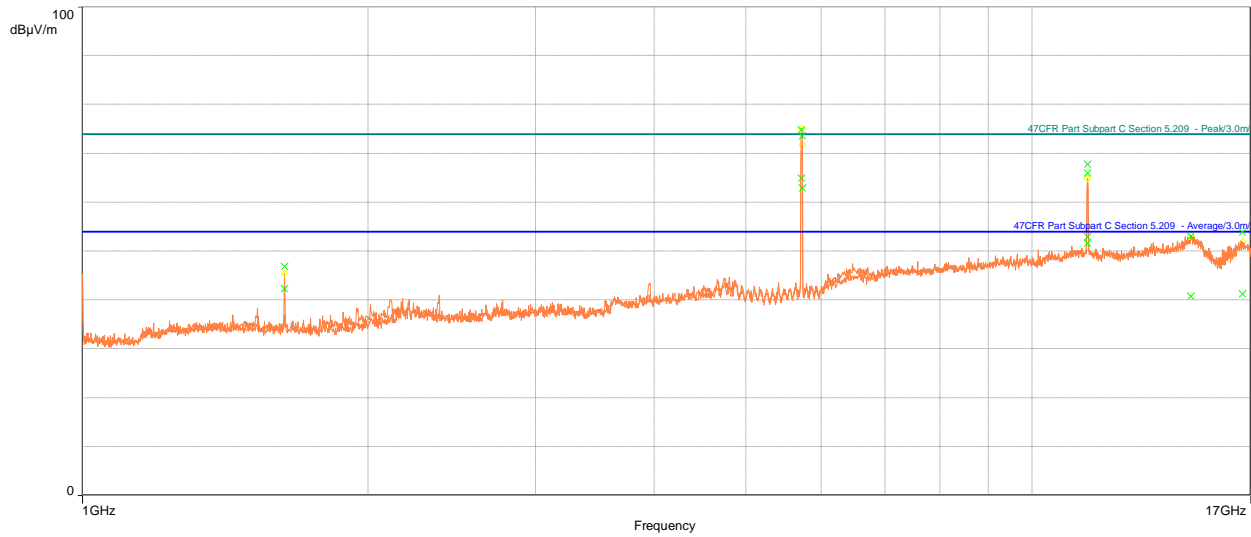
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
10996	A	45.29	54.00	-8.71	252.00	2.48	Vertical	14.86
14592	A	40.36	54.00	-13.64	180.00	3.96	Vertical	18.15
16716	A	41.47	54.00	-12.53	151.00	3.44	Vertical	19.67
1632	A	43.58	54.00	-10.42	94.00	1.50	Horizontal	-7.26
11004	A	49.51	54.00	-4.49	338.00	2.50	Horizontal	14.88
10996	P	62.03	74.00	-11.97	252.00	2.48	Vertical	14.86
14592	P	54.47	74.00	-19.53	180.00	3.96	Vertical	18.15
16716	P	54.40	74.00	-19.60	151.00	3.44	Vertical	19.67
1632	P	47.16	74.00	-26.84	94.00	1.50	Horizontal	-7.26
11004	P	64.00	74.00	-10.00	338.00	2.50	Horizontal	14.88

Graph 7: 1 GHz – 17 GHz (Low Channel)



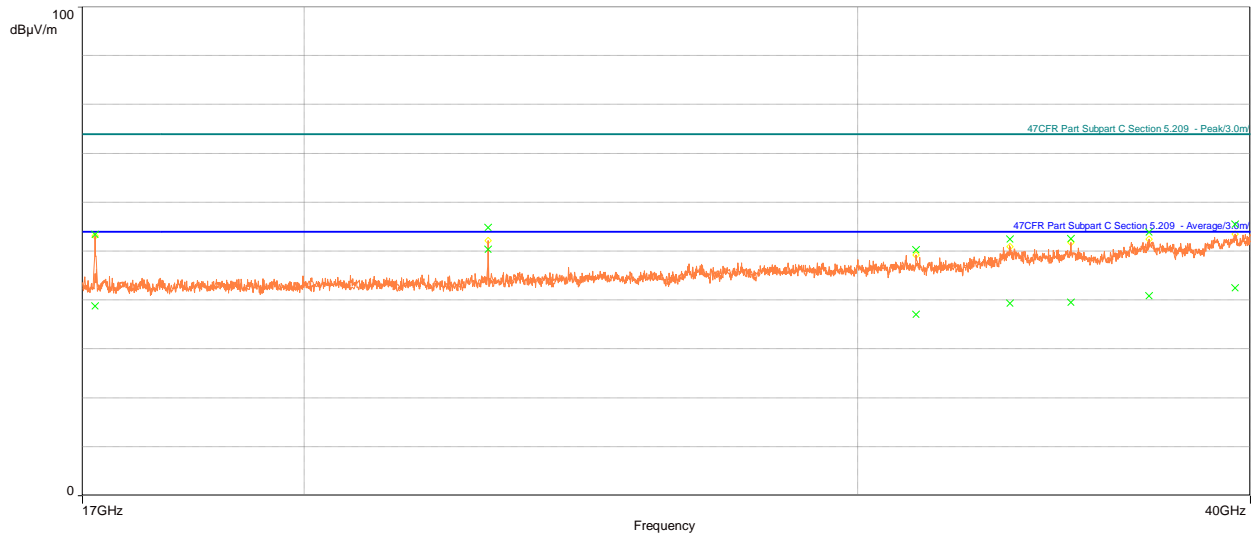
Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
11196	A	52.86	54.00	-1.14	263.00	3.80	Vertical	14.51
14835	A	40.40	54.00	-13.60	258.00	2.21	Vertical	18.35
16649	A	40.85	54.00	-13.15	225.00	2.06	Vertical	19.16
11202	A	53.07	54.00	-0.93	115.00	2.61	Horizontal	14.56
11196	P	68.47	74.00	-5.53	263.00	3.80	Vertical	14.51
14835	P	52.80	74.00	-21.20	258.00	2.21	Vertical	18.35
16649	P	53.64	74.00	-20.36	225.00	2.06	Vertical	19.16
11202	P	67.05	74.00	-6.95	115.00	2.61	Horizontal	14.56

Graph 8: 1 GHz – 17 GHz (Middle Channel)



Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Polarization	Correction (dB)
11443	A	51.58	54.00	-2.42	86.00	1.68	Vertical	15.34
14693	A	40.76	54.00	-13.24	16.00	2.05	Vertical	18.30
16664	A	41.27	54.00	-12.73	139.00	1.64	Vertical	19.41
1631.8	A	42.28	54.00	-11.72	115.00	1.50	Horizontal	-7.26
11443	A	52.94	54.00	-1.06	269.00	2.25	Horizontal	15.34
11443	P	65.99	74.00	-8.01	86.00	1.68	Vertical	15.34
14693	P	53.02	74.00	-20.98	16.00	2.05	Vertical	18.30
16664	P	53.87	74.00	-20.13	139.00	1.64	Vertical	19.41
1631.8	P	46.84	74.00	-27.16	115.00	1.50	Horizontal	-7.26
11443	P	67.79	74.00	-6.21	269.00	2.25	Horizontal	15.34

Graph 9: 1 GHz – 17 GHz (High Channel)



Frequency (MHz)	Det.	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Polarization	Correction (dB)
31311	A	37.12	54.00	-16.88	99.00	Vertical	-0.28
33539	A	39.38	54.00	-14.62	53.00	Vertical	1.29
37136	A	40.91	54.00	-13.09	2.00	Vertical	1.11
39556	A	42.47	54.00	-11.53	284.00	Vertical	3.30
17160	A	38.82	54.00	-15.18	126.00	Horizontal	-5.30
22880	A	50.41	54.00	-3.59	121.00	Horizontal	-5.02
35069	A	39.58	54.00	-14.42	1.00	Horizontal	1.23
31311	P	50.25	74.00	-23.75	99.00	Vertical	-0.28
33539	P	52.46	74.00	-21.54	53.00	Vertical	1.29
37136	P	53.86	74.00	-20.14	2.00	Vertical	1.11
39556	P	55.53	74.00	-18.47	284.00	Vertical	3.30
17160	P	53.43	74.00	-20.57	126.00	Horizontal	-5.30
22880	P	54.83	74.00	-19.17	121.00	Horizontal	-5.02
35069	P	52.56	74.00	-21.44	1.00	Horizontal	1.23

Graph 10: 17 GHz – 40 GHz (Worst Case – High Channel)

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 11 dBm in any 1 MHz band during any time interval of continuous transmission. Results of this testing are summarized. With a 5 dBi antenna, the conducted limit for power spectral density is 11 dBm. When the EUT is using spatial-multiplexing in HE modes, there is not additional array gain to accommodate. When the EUT uses Nss=1 data rates, the antenna gain is 6 dBi + Array gain of 6.02 dB which is a total of 11.02 dBi

Results of this testing are summarized.

5.6.1 UNII-2A

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
OFDM 20	5260	Mcs0_Nss4	40.5	10.2
OFDM 20	5280	Mcs0_Nss4	40.5	10.3
OFDM 20	5320	Mcs0_Nss4	40	10.6
HT 20	5260	Mcs0_Nss4	40	8.7
HT 20	5280	Mcs0_Nss4	40	9.1
HT 20	5320	Mcs0_Nss4	40	8.9
HT 40	5270	Mcs0_Nss4	40	6.7
HT 40	5310	Mcs0_Nss4	40	6.9
VHT 20	5260	Mcs0_Nss4	40	8.7
VHT 20	5280	Mcs0_Nss4	40	8.9
VHT 20	5320	Mcs0_Nss4	40	8.8
VHT 40	5270	Mcs0_Nss4	40	6.9
VHT 40	5310	Mcs0_Nss4	40	6.8
VHT 80	5290	Mcs0_Nss4	40	3.6
VHT 160	5250	Mcs0_Nss4	40	1.4
HE 20	5260	Mcs0_Nss4	40	9.1
HE 20	5280	Mcs0_Nss4	40	9.3
HE 20	5320	Mcs0_Nss4	39	8.7
HE 40	5270	Mcs0_Nss4	40	6.8

HE 40	5310	Mcs0_Nss4	40	6.7
HE 80	5290	Mcs0_Nss4	40	3.7
HE 160	5250	Mcs0_Nss4	40	1.6

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
OFDM 20	5260	Mcs0_Nss1	40.5	10.2
OFDM 20	5280	Mcs0_Nss1	40.5	10.3
OFDM 20	5320	Mcs0_Nss1	40	10.6
HT 20	5260	Mcs0_Nss1	40	8.7
HT 20	5280	Mcs0_Nss1	40	9.1
HT 20	5320	Mcs0_Nss1	40	8.9
HT 40	5270	Mcs0_Nss1	40	6.7
HT 40	5310	Mcs0_Nss1	40	6.9
VHT 20	5260	Mcs0_Nss1	40	8.7
VHT 20	5280	Mcs0_Nss1	40	8.9
VHT 20	5320	Mcs0_Nss1	40	8.8
VHT 40	5270	Mcs0_Nss1	40	6.9
VHT 40	5310	Mcs0_Nss1	40	6.8
VHT 80	5290	Mcs0_Nss1	40	3.6
VHT 160	5250	Mcs0_Nss1	40	1.4
HE 20	5260	Mcs0_Nss1	40	9.1
HE 20	5280	Mcs0_Nss1	40	9.3
HE 20	5320	Mcs0_Nss1	39	8.7
HE 40	5270	Mcs0_Nss1	40	6.8
HE 40	5310	Mcs0_Nss1	40	6.7
HE 80	5290	Mcs0_Nss1	40	3.7
HE 160	5250	Mcs0_Nss1	40	1.6

5.6.2 UNII-2C

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
OFDM 20	5500	Mcs0_Nss4	40	10.2
OFDM 20	5600	Mcs0_Nss4	40	10
OFDM 20	5720	Mcs0_Nss4	41	10.3
HT 20	5500	Mcs0_Nss4	40	9.3
HT 20	5600	Mcs0_Nss4	41	9.6
HT 20	5720	Mcs0_Nss4	42	10
HT 40	5510	Mcs0_Nss4	40	7.4
HT 40	5590	Mcs0_Nss4	40	7.4
HT 40	5710	Mcs0_Nss4	40	7
VHT 20	5500	Mcs0_Nss4	40	9.3
VHT 20	5600	Mcs0_Nss4	41	9.5
VHT 20	5720	Mcs0_Nss4	36	6.9
VHT 40	5510	Mcs0_Nss4	40	7.4
VHT 40	5590	Mcs0_Nss4	40	7.3
VHT 40	5710	Mcs0_Nss4	41	7.5
VHT 80	5530	Mcs0_Nss4	40	4.3
VHT 80	5610	Mcs0_Nss4	40	4.1
VHT 80	5690	Mcs0_Nss4	41	4.3
VHT 160	5570	Mcs0_Nss4	40	1.5
HE 20	5500	Mcs0_Nss4	40	9.3
HE 20	5600	Mcs0_Nss4	41	9.6
HE 20	5720	Mcs0_Nss4	41	9.5
HE 40	5510	Mcs0_Nss4	40	7.4
HE 40	5590	Mcs0_Nss4	40	7.3
HE 40	5710	Mcs0_Nss4	41	7.5
HE 80	5530	Mcs0_Nss4	40	4.4
HE 80	5610	Mcs0_Nss4	41	4.5
HE 80	5690	Mcs0_Nss4	41	4.3
HE 160	5570	Mcs0_Nss4	40	1.8

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Measured PSD
OFDM 20	5500	Mcs0_Nss4	40	10.2
OFDM 20	5600	Mcs0_Nss4	40	10
OFDM 20	5720	Mcs0_Nss4	41	10.3
HT 20	5500	Mcs0_Nss4	40	9.3
HT 20	5600	Mcs0_Nss4	41	9.6
HT 20	5720	Mcs0_Nss4	42	10
HT 40	5510	Mcs0_Nss4	40	7.4
HT 40	5590	Mcs0_Nss4	40	7.4
HT 40	5710	Mcs0_Nss4	40	7
VHT 20	5500	Mcs0_Nss4	40	9.3
VHT 20	5600	Mcs0_Nss4	41	9.5
VHT 20	5720	Mcs0_Nss4	36	6.9
VHT 40	5510	Mcs0_Nss4	40	7.4
VHT 40	5590	Mcs0_Nss4	40	7.3
VHT 40	5710	Mcs0_Nss4	41	7.5
VHT 80	5530	Mcs0_Nss4	40	4.3
VHT 80	5610	Mcs0_Nss4	40	4.1
VHT 80	5690	Mcs0_Nss4	41	4.3
VHT 160	5570	Mcs0_Nss4	40	1.5
HE 20	5500	Mcs0_Nss4	40	9.3
HE 20	5600	Mcs0_Nss4	41	9.6
HE 20	5720	Mcs0_Nss4	41	9.5
HE 40	5510	Mcs0_Nss4	40	7.4
HE 40	5590	Mcs0_Nss4	40	7.3
HE 40	5710	Mcs0_Nss4	41	7.5
HE 80	5530	Mcs0_Nss4	40	4.4
HE 80	5610	Mcs0_Nss4	41	4.5
HE 80	5690	Mcs0_Nss4	41	4.3
HE 160	5570	Mcs0_Nss4	40	1.8

Result

The maximum average power spectral density was less than the limit of 8 dBm; therefore, the EUT complies with the specification.

5.7 DFS Requirement

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

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 --