



427 West 12800 South  
Draper, UT 84020

## Test Report Certification

<b>FCC ID</b>	SWX-UDBPS
<b>ISED ID</b>	6545A-UDBPS
<b>Equipment Under Test</b>	UDB-Pro-Sector
<b>Test Report Serial Number</b>	TR9776_02
<b>Date of Test(s)</b>	22, 25 October; 3 – 4 November; 10 – 12 December 2024 28 February; 3 - 4 March 2025
<b>Report Issue Date</b>	11 March 2025

<b>Test Specification</b>	<b>Applicant</b>
47 CFR FCC Part 15, Subpart E	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.



NVLAP LAB CODE 600241-0

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## 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 with the specifications provided by the manufacturer.

<b>Applicant</b>	Ubiquiti Inc.
<b>Manufacturer</b>	Ubiquiti Inc.
<b>Brand Name</b>	UBIQUITI
<b>Model Number</b>	UDB-Pro-Sector
<b>FCC ID</b>	SWX-UDBPS
<b>ISED ID</b>	6545A-UDBPS

On this 11<sup>th</sup> day of February 2025, 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. Unified Compliance laboratory is not responsible for incorrect information provided by the manufacturer.

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

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<b>Revision History</b>		
<b>Revision</b>	<b>Description</b>	<b>Date</b>
01	Original Report Release	11 February 2025
02	Removed 80 MHz Bandwidth Test Data and Amended Sections 5.3, 5.4 and 5.6	11 March 2025

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# 1 Client Information

## 1.1 Applicant

<b>Company</b>	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
<b>Contact Name</b>	Alex Macon
<b>Title</b>	Compliance

## 1.2 Manufacturer

<b>Company</b>	Ubiquiti Inc. 685 Third Avenue New York, NY 10017 U.S.A.
<b>Contact Name</b>	Alex Macon
<b>Title</b>	Compliance

## 2 Equipment Under Test (EUT)

### 2.1 Identification of EUT

<b>Brand Name</b>	UBIQUITI
<b>Model Number</b>	UDB-Pro-Sector
<b>Serial Number</b>	4C780E
<b>Dimensions (cm)</b>	36.1 x 13.0 x 7.1

### 2.2 Description of EUT

The UDB-Pro-Sector is a 5 GHz wireless access point for multiple point-to-point UDB clients. The UDB-Pro-Sector is designed for long-range applications. The UDB-Pro-Sector has an Ethernet port for power and data transfer. The UDB-Pro-Sector is powered by an 802-3at PoE power adapter. The UDB-Pro-Sector is designed for outdoor use.

The table below show the channels used within the different modulation bandwidths.

<b>Band</b>	<b>WiFi Mode</b>	<b>Modulation Bandwidth</b>	<b>Modulation Type</b>	<b>Frequency (MHz)</b>
UNII-3	a	20 MHz	OFDM	5745, 5775, 5825
	ac	20 MHz	VHT	5745, 5775, 5825
	ac	40 MHz	VHT	5755, 5775, 5795

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.

<b>Brand Name Model Number Serial Number</b>	<b>Description</b>	<b>Name of Interface Ports / Interface Cables</b>
BN: UBIQUITI MN: UDB-Pro-Sector (Note 1) SN: 4C780E	Wireless Access Point	See Section 2.4
BN: UBIQUITI MN: U-POE-at SN: N/A	PoE Injector	PoE Output / Shielded Cat 5E/ unshielded Cat 5E to AE
BN: Dell MN: XPS 13 SN: N/A	Laptop Personal Computer	LAN Port / 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
PoE Input	1	7m Shielded Cat 5E
PoE Output (PoE Injector)	1	7m Shielded Cat 5E to UDB-Pro-Sector PoE Input
LAN (PoE Injector)	1	unshielded Cat 5E to Laptop PC
AC (PoE Injector)	1	3 Conductor power cord to AC mains/80cm

## 2.5 Operating Environment

Power Supply	120 Volts AC to 48 Volts PoE
AC Mains Frequency	60 Hz
Temperature	21.2 – 23.4 °C
Humidity	22.1 – 27.8 %
Barometric Pressure	1011 mBar

## 2.6 Operating Modes

The UDB-Pro-Sector 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/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

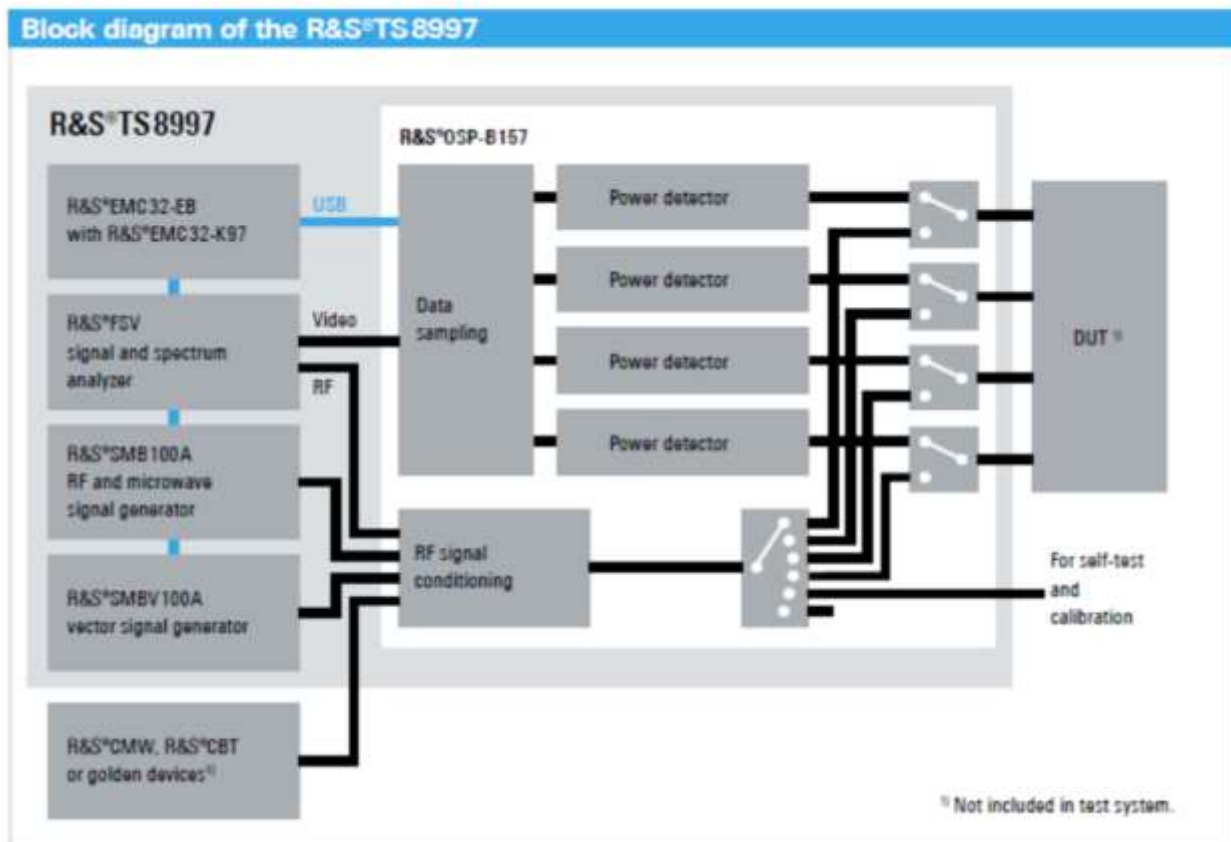


Diagram 1: Test Configuration Block Diagram

## 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

<b>Title</b>	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
<b>Purpose of Test</b>	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(c)	RSS-247 §6.2.2, §6.2.3	Bandwidth Requirement	5725 to 5850	Compliant
15.407(e)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	5725 to 5850	Compliant
15.407(f)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.407(g)	RSS-247 §6.2.2, §6.2.3	Radiated Spurious Emissions	0.009 to 40000	Compliant
15.407(h)	RSS-247 §6.2.2, §6.2.3	Peak Power Spectral Density	5725 to 5850	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033 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 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 2025. 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 30 June 2025.

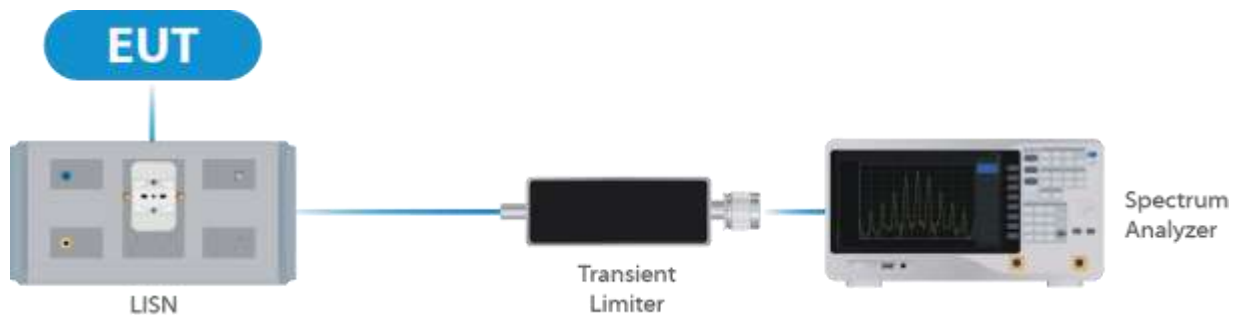
Unified Compliance Laboratory has been assigned Designation Number US5037 by the FCC and Conformity Assessment Number US0223 by ISED.

## 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	8/27/2024	8/27/2025
LISN	AFJ	LS16C/10	UCL-2512	7/08/2024	7/08/2025
ISN	Teseq	ISN T800	UCL-2974	7/09/2024	7/09/2025
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	AFJ	AFJ FFT3010	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	1/16/2025	1/16/2026
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	4/12/2024	4/19/2025
Switch Extension	R&S	OSP-150W	UCL-2870	4/12/2024	4/19/2025
Test Software	R&S	EMC32	UCL-9442	-	-

**Table 2: List of equipment used for Direct Connect at the Antenna Port**

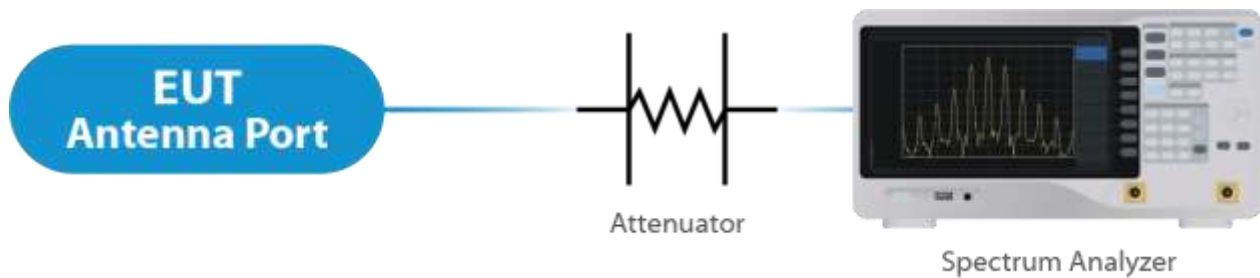


Figure 2: Direct Connect at the Antenna Port Test

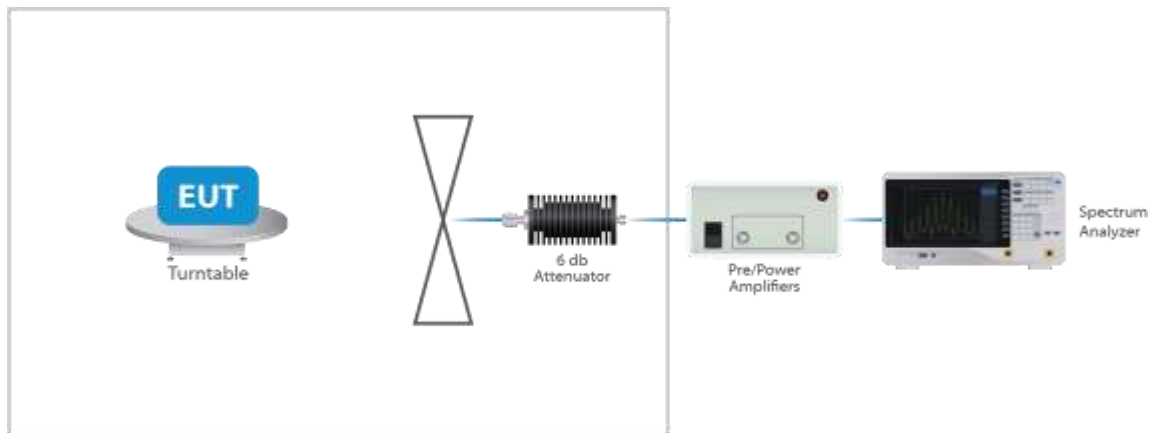


Figure 3: Output Power Measurement

### 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	12/27/2024	12/27/2025
Pre-Amplifier 9 kHz – 1 GHz	Sonoma Instruments	310N	UCL-2889	1/19/2024	1/19/2026
Broadband Antenna	Scwarzbeck	VULB 9163	UCL-3062	2/22/2023	2/22/2025
Double Ridge Horn Antenna	Scwarzbeck	BBHA 9120D	UCL-3065	3/10/2023	3/10/2025
Log Periodic	Scwarzbeck	STLP 9129	UCL-3068	1/27/2023	1/27/2025
15 - 40 GHz Horn Antenna	Scwarzbeck	BBHA 9170	UCL-2487	3/10/2023	3/10/2025
1 – 18 GHz Amplifier	Com-Power	PAM 118A	UCL-3833	1/19/2024	1/19/2026
Test Software	Nexio	BatEMC	UCL-5253 & UCL- 5249	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 ( $\pm$ 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
<b>Direct Connect Tests</b>	<b>K Factor</b>	<b>Value</b>
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 internal integrated antenna. Per the manufacturer, the Maximum gain of the antenna per chain is 17 dBi. This is an 802.11 device and utilizes CDD as described in KDB 662911 D01. The antenna is not user replaceable. For CDD transmissions, directional gain is calculated as follows.

Array Gain =  $10 \log(\text{NANT}/\text{NSS})$  dB

NANT = number of transmit antennas and

NSS = number of spatial streams. NSS = 1 considered worst case.

For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for  $\text{NANT} \leq 4$ ;

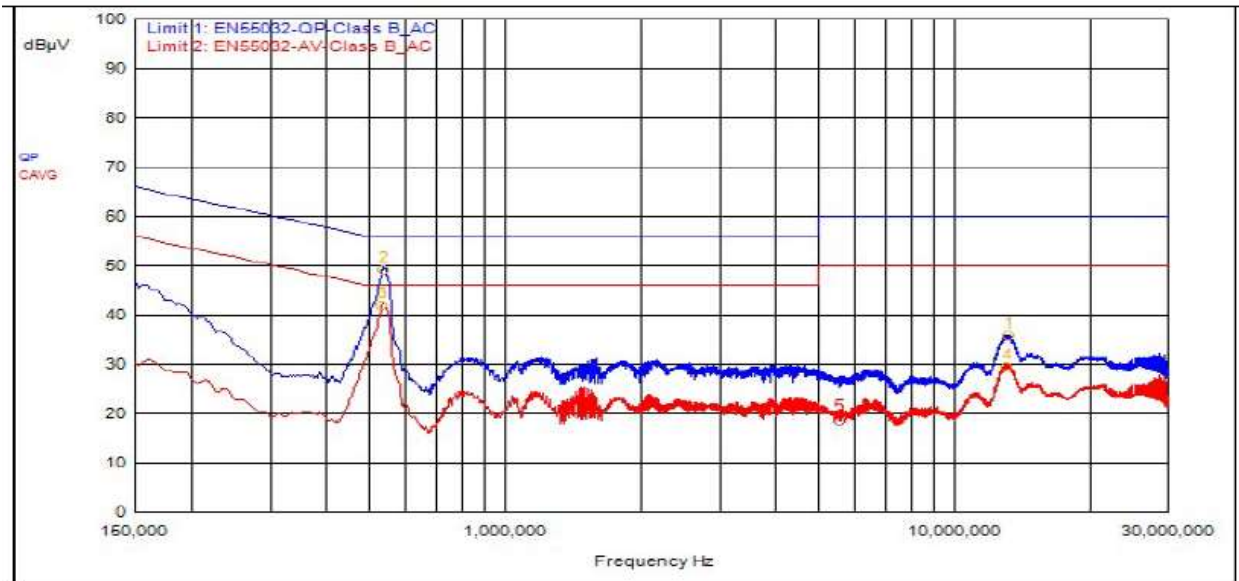
For PSD measurements when  $\text{Nss}=1$ : Array Gain =  $10 \log(\text{NANT}/\text{NSS})$  dB + Antenna Gain (dBi). Or  $3.01 \text{ dB} + 17 \text{ dBi} = 20.01 \text{ dBi}$ .

#### Results

The EUT complied with the specification

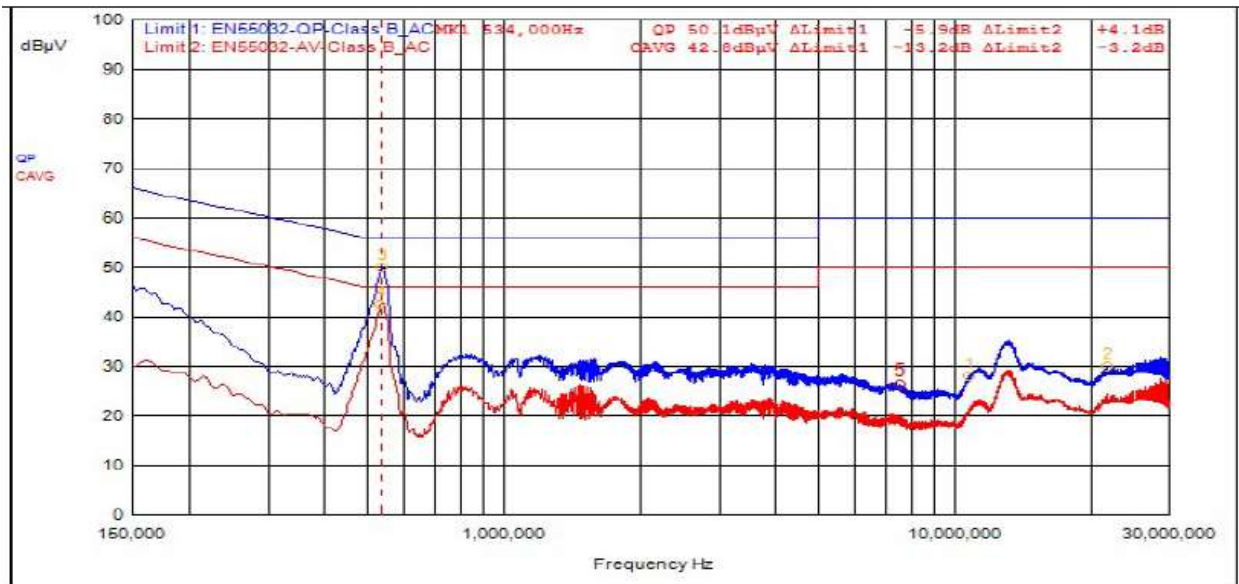
## 5.2 Conducted Emissions at Mains Ports Data

### 5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBμV	dBμV	dBμV	dB	dBμV	dB	P/F
2	537,000kHz	9.49			QPeak	39.59	49.08	56.00	-6.92			
1	13.158	9.66			QPeak	26.19	35.85	60.00	-24.15			
3	531,000kHz	9.49			C_AVG	32.53	42.02			46.00	-3.98	
4	13.122	9.66			C_AVG	19.66	29.32			50.00	-20.68	
5	5.556	9.61			C_AVG	9.02	18.63			50.00	-31.37	

## 5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.	P/F
MU	MHz	dB	dB	dB	Type	dBμV	dBμV	dBμV	dB	dBμV	dB	P/F
3	534,000kHz	9.62			QPeak	40.45	50.07	56.00	-5.93			
2	21.897	9.97			QPeak	20.00	29.97	60.00	-30.03			
1	10.803	9.65			QPeak	18.49	28.14	60.00	-31.86			
5	7.593	9.63			QPeak	16.79	26.42	60.00	-33.58			
4	531,000kHz	9.62			C_AVG	32.86	42.48			46.00	-3.52	

## 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 662911 D01.

Please see associated annex for details on instrument settings.

Nominal BW (MHz)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
OFDM 20	5745	17.3	20.7
OFDM 20	5775	17.0	21.0
OFDM 20	5825	17.3	21.6
VHT 20	5745	18.3	21.6
VHT 20	5775	18.3	22.9
VHT 20	5825	18.5	22.8
VHT 40	5755	36.5	43.8
VHT 40	5775	37.0	43.8
VHT 40	5795	36.5	42.0

#### Result

All chains were tested and the highest bandwidth per chain is reported above. Please see Annex for all bandwidth measurements.

## 5.4 §15.407(a)(3) Maximum Average Output Power

All chains were measured and summed under the guidance of KDB 789033 Section II. E.2. and KDB 662911 D01. Please see associated annex for details on instrument settings.

The maximum average RF conducted output power measured for this device was 18.86 dBm or 76.91 mW. The limit is 30 dBm, or 1 Watt when using antennas with 6 dBi or less gain. The antenna has a gain of 17 dBi so the adjusted conducted output power limit is 19 dBm.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP	Measured PSD
OFDM 20	5745	Mcs0	14	18.63	35.63	3.49
OFDM 20	5775	Mcs0	14	18.82	35.82	3.87
OFDM 20	5825	Mcs0	13	18.07	35.07	2.35
VHT 20	5745	Mcs0	14	18.62	35.62	2.99
VHT 20	5775	Mcs0	14	18.86	35.86	3.43
VHT 20	5825	Mcs0	14	18.83	35.83	2.74
VHT 40	5755	Mcs0	14	18.29	35.29	-0.43
VHT 40	5775	Mcs0	14	18.36	35.36	-0.16
VHT 40	5795	Mcs0	14	18.63	35.63	0.39

### Result

In the configuration tested, the maximum summed 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)(7) 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 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 within the annex below are plots with the EUT turned to the upper and lower channels with the antenna gain of 17 dBi accounted for. These demonstrate compliance with the provisions of this section at the band edges.

All emissions shall be limited to a level of  $-27$  dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

#### **Result**

Conducted spurious emissions were attenuated below the limit; therefore, the EUT complies with the specification.

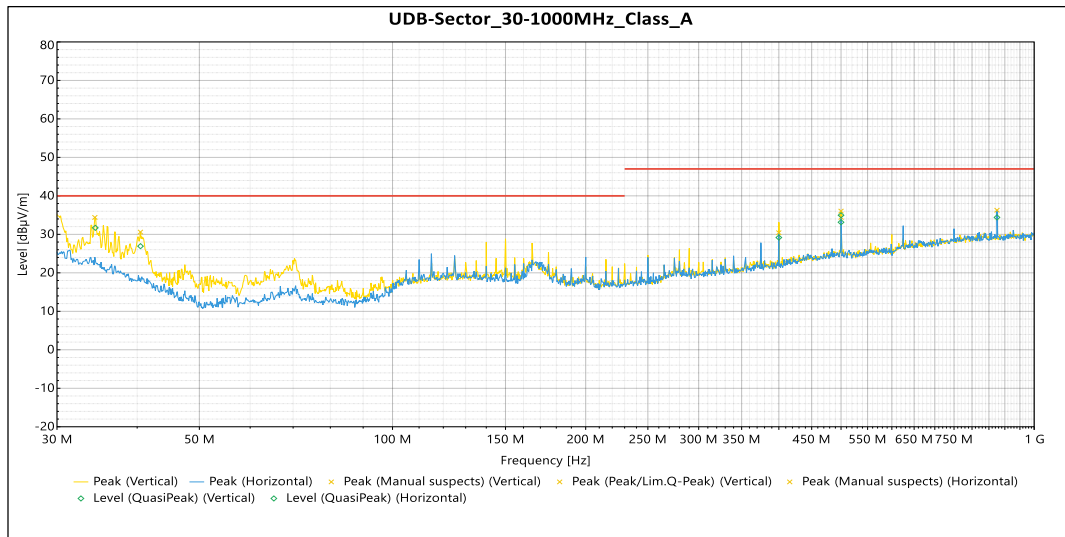
### **5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205**

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 TP17.

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

#### **Result**

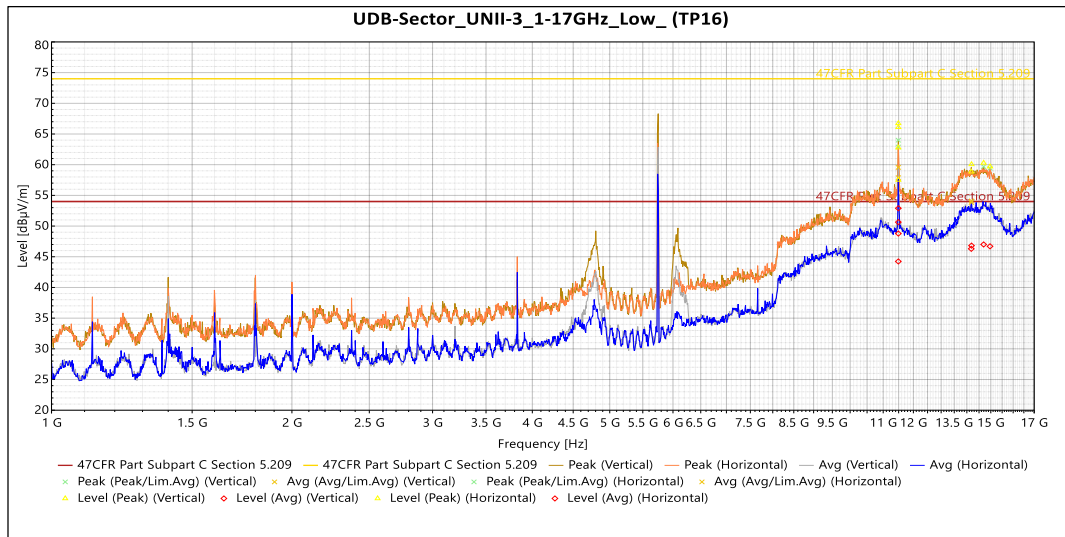
All emissions in the restricted bands of § 15.205 met the limits specified in § 15.209; therefore, the EUT complies with the specification. See Annex for Conducted Band edge plots.



#### QuasiPeak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
34.42 MHz	31.69	30	-8.31	261	1.16	Vertical	-6.12
40.48 MHz	26.93	30	-13.07	207	1	Vertical	-10.56
499.99 MHz	33.15	30	-13.85	142	2.56	Vertical	-5.19
400.00 MHz	29.17	30	-17.83	295	2.95	Horizontal	-7.62
500.01 MHz	34.96	30	-12.04	277	1.52	Horizontal	-5.19
875.01 MHz	34.40	30	-12.60	244	1.17	Horizontal	-0.65

**Table 4: Radiated Emissions 30 – 1000 MHz**



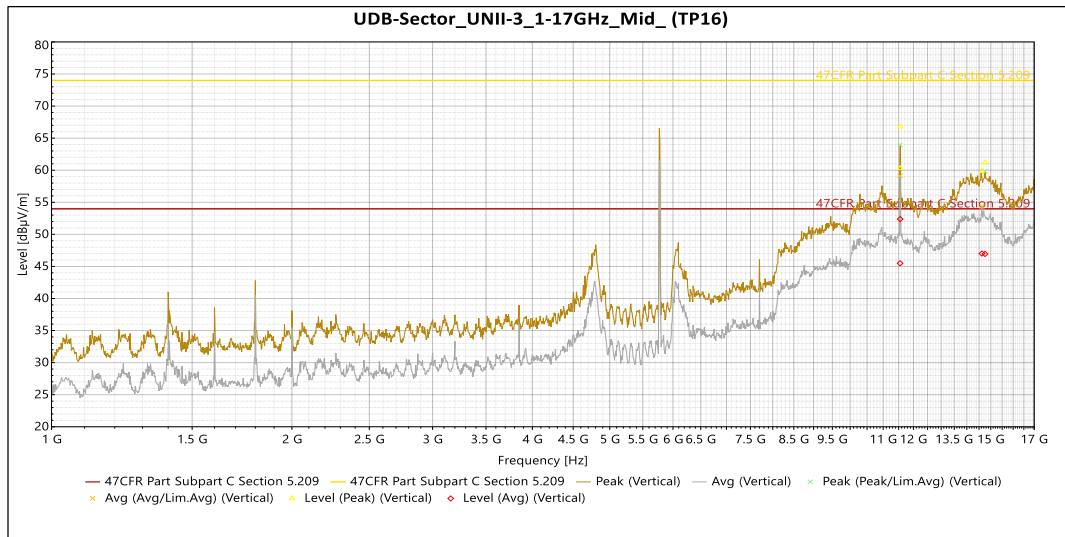
#### Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.49 GHz	57.52	74.0	-16.48	26	1.5	Vertical	11.25
11.49 GHz	66.74	74.0	-7.26	203	1.718	Vertical	11.26
14.18 GHz	58.85	74.0	-15.15	139	1.714	Vertical	14.19
14.69 GHz	60.29	74.0	-13.71	174	1.714	Vertical	15.04
11.49 MHz	66.10	74.0	-7.90	224	1.714	Horizontal	11.25
11.49 MHz	32.78	74.0	-11.22	215	2.867	Horizontal	11.26
14.19 MHz	60.05	74.0	-13.95	320	3.728	Horizontal	14.24
14.97 MHz	59.68	74.0	-14.32	85	3.728	Horizontal	14.50

#### Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.49 GHz	44.24	54.0	-9.76	26	1.5	Vertical	11.25
11.49 GHz	52.90	54.0	-1.10	203	1.718	Vertical	11.26
14.18 GHz	46.29	54.0	-7.71	139	1.714	Vertical	14.19
14.69 GHz	47.00	54.0	-7.00	174	1.714	Vertical	15.04
11.49 MHz	50.64	54.0	-3.36	224	1.714	Horizontal	11.25
11.49 MHz	48.78	54.0	-5.22	215	2.867	Horizontal	11.26
14.19 MHz	46.81	54.0	-7.19	320	3.728	Horizontal	14.24
14.97 MHz	46.70	54.0	-7.30	85	3.728	Horizontal	14.50

**Table 5: Radiated Emissions 1 – 17 GHz at the Lowest Frequency**



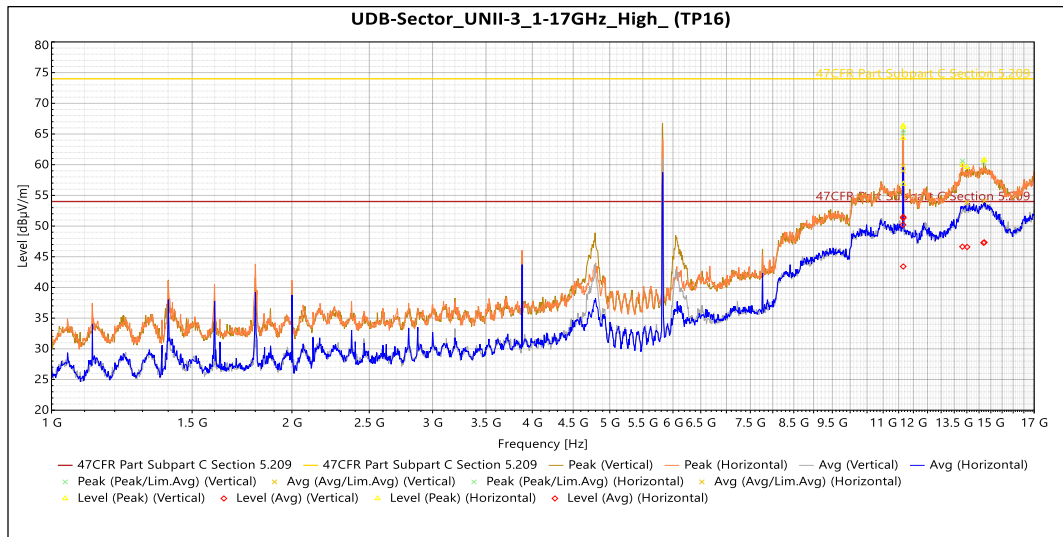
#### Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.55 GHz	60.30	74.0	-13.70	30	3.728	Vertical	11.34
11.55 GHz	66.78	74.0	-7.22	195	3.164	Vertical	11.33
14.62 GHz	59.86	74.0	-14.14	103	3.728	Vertical	14.80
14.75 GHz	61.19	74.0	-15.81	29	3.164	Vertical	14.83
No significant emissions were observed in the horizontal orientation of the antenna							

#### Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.55 GHz	45.49	54.0	-8.51	30	3.728	Vertical	11.34
11.55 GHz	52.38	54.0	-1.62	195	3.164	Vertical	11.33
14.62 GHz	47.01	54.0	-6.99	103	3.728	Vertical	14.80
14.75 GHz	46.94	54.0	-7.06	29	3.164	Vertical	14.83
No significant emissions were observed in the horizontal orientation of the antenna							

**Table 6: Radiated Emissions 1 – 17 GHz at the Middle Frequency**



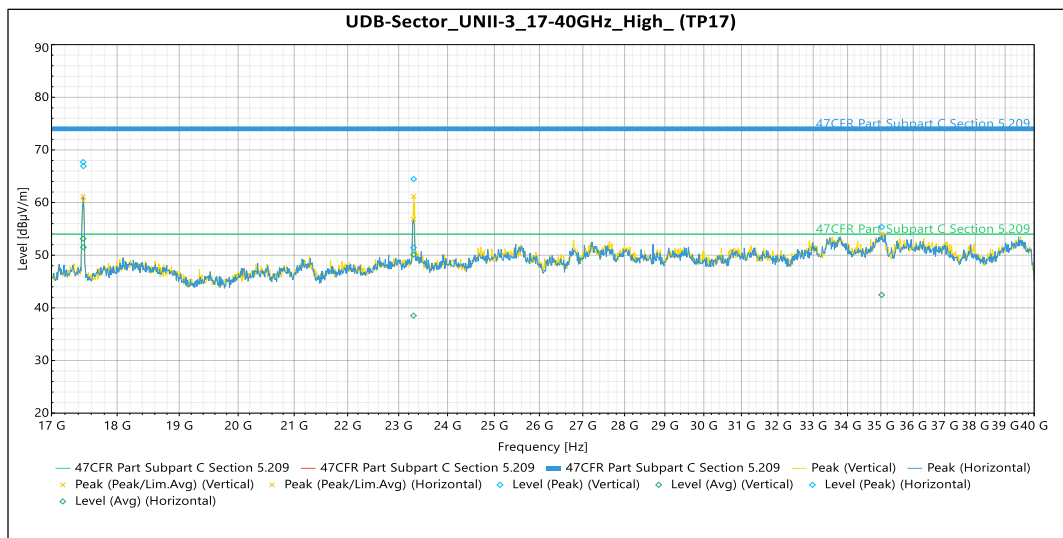
## Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.65 GHz	66.36	74.0	-7.64	203	2.288	Vertical	10.98
11.66 GHz	56.87	74.0	-17.13	4	2.871	Vertical	10.97
14.01 GHz	59.58	74.0	-14.42	272	3.729	Vertical	13.91
14.69 GHz	60.66	74.0	-13.34	280	1.5	Vertical	15.03
11.65 GHz	64.33	74.0	-9.67	125	1.71	Horizontal	11.00
11.66 GHz	66.14	74.0	-7.86	83	1.714	Horizontal	10.97
13.82 GHz	59.93	74.0	-14.07	25	3.445	Horizontal	13.94
14.72 GHz	60.81	74.0	-13.19	113	3.728	Horizontal	14.94

## Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
11.65 GHz	51.48	54.0	-2.52	203	2.288	Vertical	10.98
11.66 GHz	43.41	54.0	-10.59	4	2.871	Vertical	10.97
14.01 GHz	46.59	54.0	-7.41	272	3.729	Vertical	13.91
14.69 GHz	47.28	54.0	-6.72	280	1.5	Vertical	15.03
11.65 GHz	50.21	54.0	-3.79	125	1.71	Horizontal	11.00
11.66 GHz	51.31	54.0	-2.69	83	1.714	Horizontal	10.97
13.82 GHz	46.64	54.0	-7.36	25	3.445	Horizontal	13.94
14.72 GHz	47.35	54.0	-6.65	113	3.728	Horizontal	14.94

Table 7: Radiated Emissions 1 – 17 GHz at the Highest Frequency



Peak

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.48 GHz	66.93	74.0	-7.07	174	Vertical	-1.09
23.30 GHz	64.46	74.0	-9.54	203	Vertical	1.71
17.47 GHz	67.70	74.0	-6.30	236	Horizontal	-1.09
23.30 GHz	51.43	74.0	-22.57	248	Horizontal	0.71
35.03 GHz	55.34	74.0	-18.66	346	Horizontal	5.00

Avg

Frequency	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
17.48 GHz	51.52	54.0	-2.48	174	Vertical	-1.09
23.30 GHz	50.13	54.0	-3.87	203	Vertical	1.71
17.47 GHz	53.15	54.0	-0.85	236	Horizontal	-1.09
23.30 GHz	38.51	54.0	-15.49	248	Horizontal	0.71
35.03 GHz	42.46	54.0	-11.54	346	Horizontal	5.00

**Table 8: Radiated Emissions 17 – 40 GHz at the Highest Frequency (worse case)**



## 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 662911 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 30 dBm in any 500 kHz band during any time interval of continuous transmission. Results of this testing are summarized.

As per KDB 662911, 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 17 dBi + Array gain of 3.01 dB which is a total of 20.01 dBi. The adjusted limit for Nss1 is 15.99.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Measured EIRP	Measured PSD
OFDM 20	5745	Mcs0	14	18.63	35.63	3.49
OFDM 20	5775	Mcs0	14	18.82	35.82	3.87
OFDM 20	5825	Mcs0	13	18.07	35.07	2.35
VHT 20	5745	Mcs0	14	18.62	35.62	2.99
VHT 20	5775	Mcs0	14	18.86	35.86	3.43
VHT 20	5825	Mcs0	14	18.83	35.83	2.74
VHT 40	5755	Mcs0	14	18.29	35.29	-0.43
VHT 40	5775	Mcs0	14	18.36	35.36	-0.16
VHT 40	5795	Mcs0	14	18.63	35.63	0.39

### Result

The maximum summed average power spectral density was less than the limit of 30 dBm; therefore, the EUT complies with the specification.

**-- End of Test Report --**