



427 West 12800 South
Draper, UT 84020

Test Report Certification

FCC ID	SWX-U6EP
ISED ID	6545A-U6EP
Equipment Under Test	U6-Enterprise
Test Report Serial Number	TR6138_03
Date of Test(s)	8, 17, 18, 25 May and 2 June 2021
Report Issue Date	9 June 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-Enterprise
FCC ID	SWX-U6EP
ISED ID	6545A-U6EP

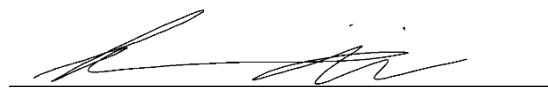
On this 9th day of June 2021, I individually and for Unified Compliance Laboratory certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge and are made in good faith.

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	9 June 2021
02	Amended Sections 3.3.1 and 5.4	11 June 2021
03	Added information to section 2.6 Added information to section 3.3.1 Added information to section 5.1 Added detail to results section 5.3 Added array gain to section 5.6 Included measurements of Nss1 mode	18 August 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.....	8
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	10
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)(3) Maximum Average Output Power	17
5.5	§15.407(b)(7) Spurious Emissions.....	18
5.6	§15.407(a) Maximum Power Spectral Density.....	22
5.7	§15.407(d) Contention Based Protocol.....	23

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-Enterprise
Serial Number	68D79A1F0D5A
Dimensions (cm)	22.0 x 22.0 x 4.8

2.2 Description of EUT

The U6-Enterprise is a four-stream WiFi 6 access point that provides up to 2.4 Gbps aggregate radio rate with 2.4 GHz (2x2), 5 GHz (4x4) and 6 GHz (4x4) radios. The U6-Enterprise is designed for indoor use. The U6-Enterprise has an Ethernet port for data transfer and is powered by an 803.2at PoE power adapter. The U6-Enterprise has a Bluetooth management radio to achieve setup and operation.

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

Band	Modulation Bandwidth	Frequency (MHz)	Maximum Power Setting
UNII-6	ax (HEW20)	6435, 6455	TP21
		6475, 6495	TP22
		6415	TP24
	ax (HEW40)	6445	TP26
		6485	TP28
	ax (HEW80)	6465	TP34
	ax (HEW160)	6505	TP40

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-Enterprise SN: 68D79A1F0D5A	WiFi Access Point	See Section 2.4
BN: Ubiquiti MN: UPOE-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
PoE	1	Shielded or Un-Shielded Cat 5e Cable/> 3 meters
Data	1	Shielded or Un-Shielded Cat 5e Cable/> 3 Meters

2.5 Operating Environment

Power Supply	120 Volts ac to 48 Volts PoE Power
AC Mains Frequency	60 Hz
Temperature	21.3 – 21.8 °C
Humidity	22.0 – 24.7 %
Barometric Pressure	1019 mBar

2.6 Operating Modes

The U6-Enterprise was tested using test software in order to enable to constant transmission. The measurements within this report are corrected to reference a 100% duty cycle. All emission modes of 802.11ax 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

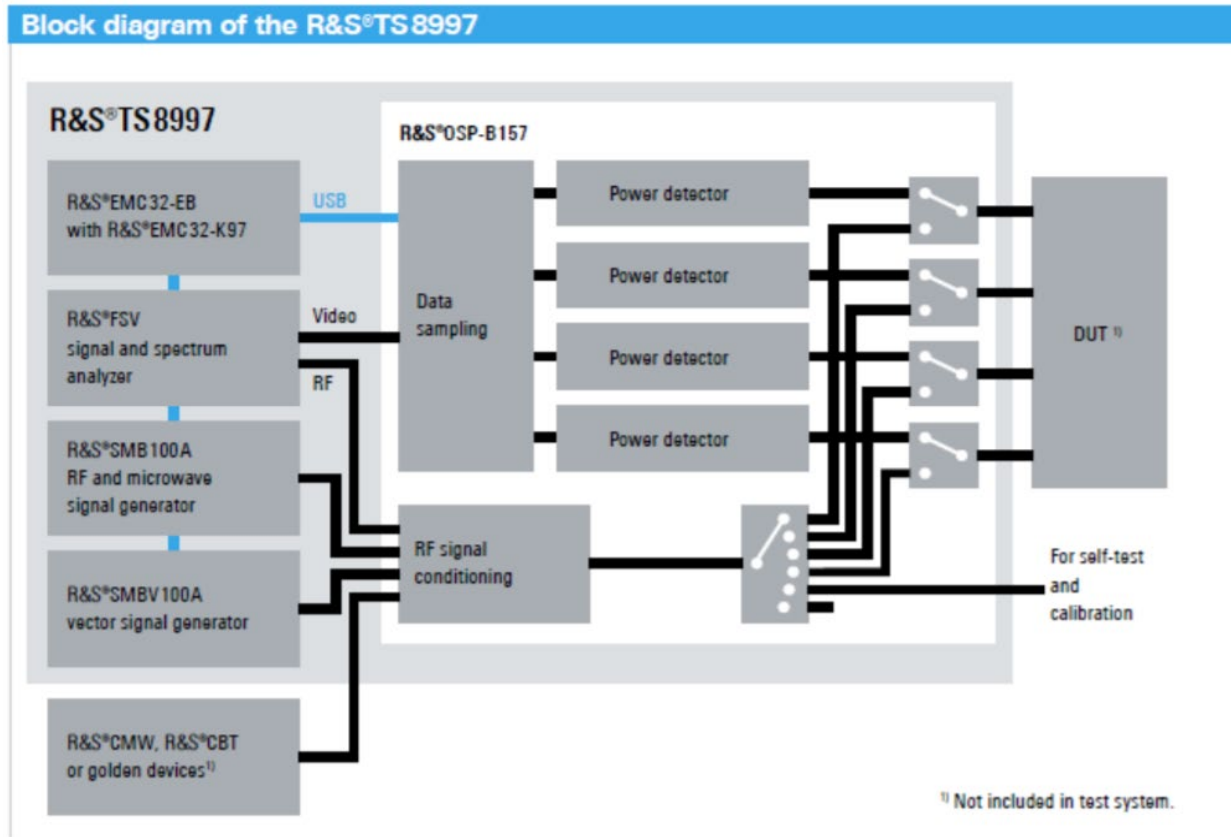


Diagram 1: Test Configuration Block Diagram

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
15.203	N/A	Antenna requirements	Structural Requirement	Compliant
15.207	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	6435 to 6515	Compliant
15.407(a)	RSS-247 §6.2.2, §6.2.3	Peak Output Power	6435 to 6515	Compliant
15.407(f)	RSS-247 §6.2.2, §6.2.3	Antenna Conducted Spurious Emissions	0.009 to 40000	N/A
15.407(a)	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	6435 to 6515	Compliant
15.407(d)	RSS-247 §6.2.2, §6.2.3	Contention Based Protocol	6435 to 6515	Compliant
The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033, KDB 987594 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 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	9/17/2021
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	6/1/2020	6/1/2021
LISN	Com-Power	LIN-120C	UCL-2612	5/19/2021	5/19/2022
AC Power Source	Laplace Instruments	AC1000A	UCL-2857	N/A	N/A
Test Software	UCL	Revision 1	UCL-3107	N/A	N/A

Table 1: List of equipment used for Conducted Emissions Testing at Mains Port

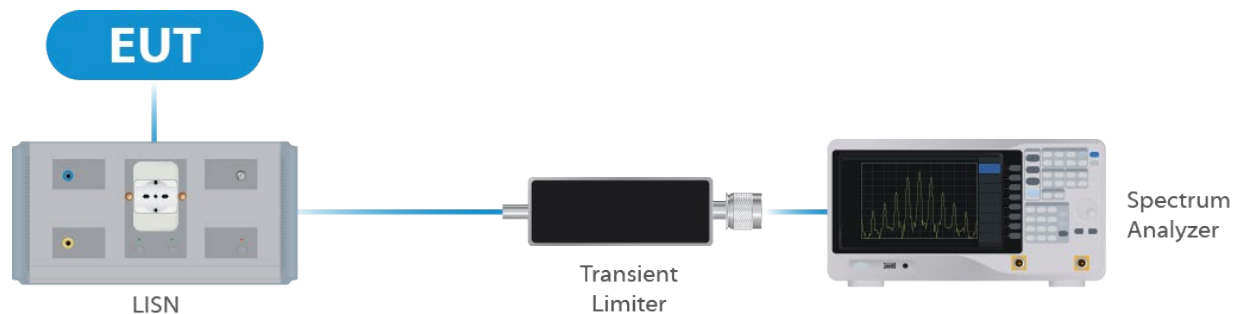


Figure 1: Conducted Emissions Test

4.2 Direct Connect at the Antenna Port Tests

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	R&S	FSV40	UCL-2861	8/24/2020	8/24/2021
Signal Generator	R&S	SMB100A	UCL-2864	N/A	N/A
Vector Signal Generator	R&S	SMBV100A	UCL-2873	N/A	N/A
Switch Extension	R&S	OSP-B157WX	UCL-2867	9/8/2020	9/8/2021
Switch Extension	R&S	OSP-150W	UCL-2870	3/3/2021	3/3/2022

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

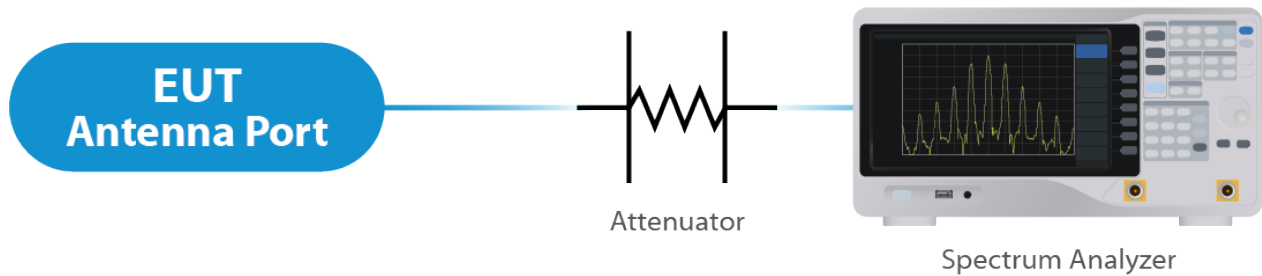


Figure 2: Direct Connect at the Antenna Port Test



Figure 3: Output Power Measurement

4.3 Radiated Emissions

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
EMI Receiver	Keysight	N9038A	UCL-2778	6/1/2020	8/1/2021
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	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

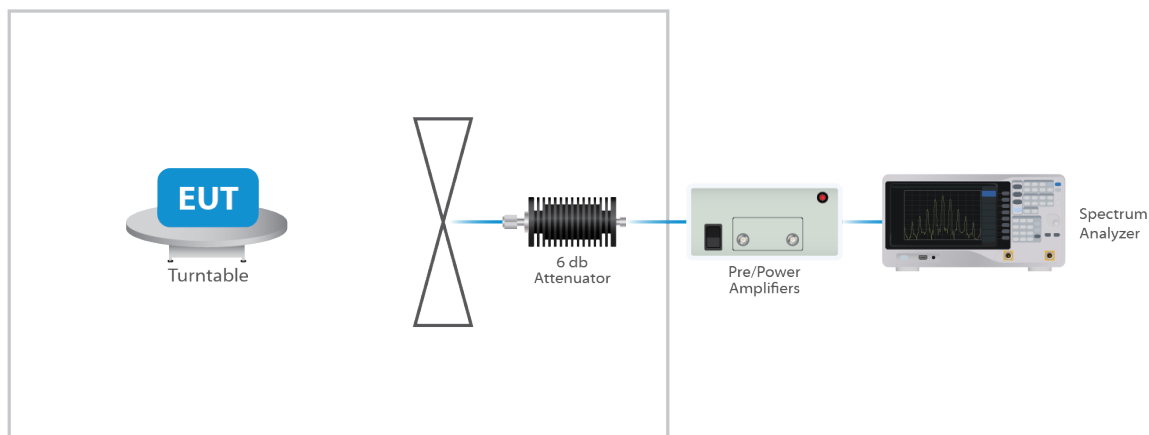


Figure 4: Radiated Emissions Test

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 (\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 folding antenna structure. The maximum gain of the antenna per chain is 6.0 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;

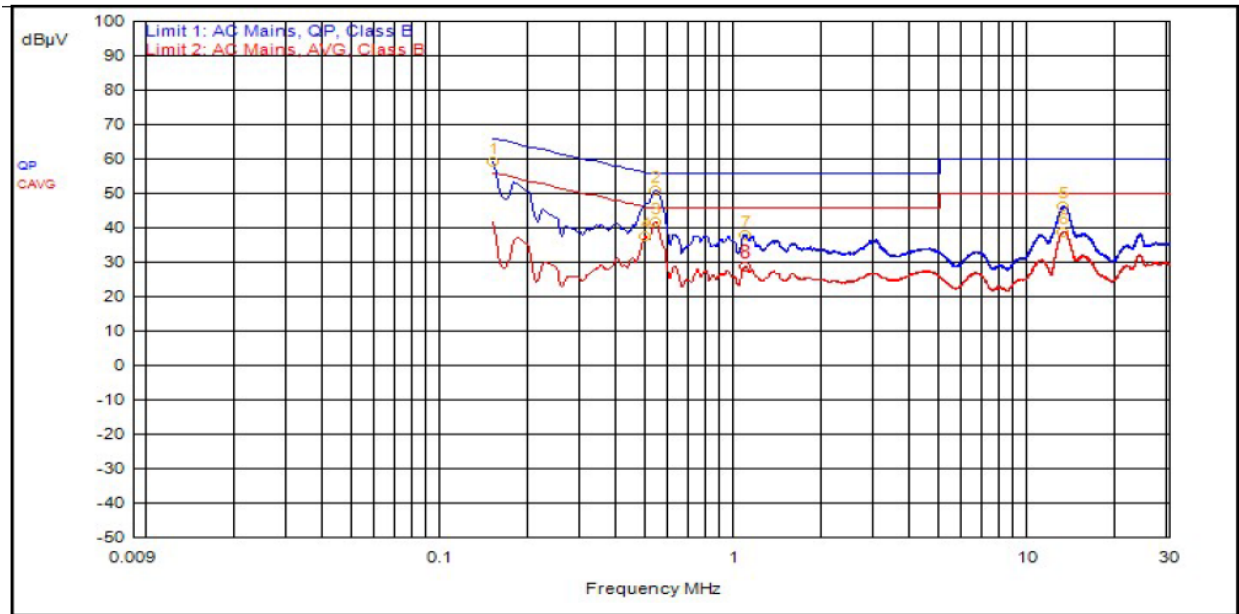
For PSD measurements when Nss=1: Array Gain = 10 log(NANT/NSS) dB = 6.02dB

Results

The EUT complied with the specification

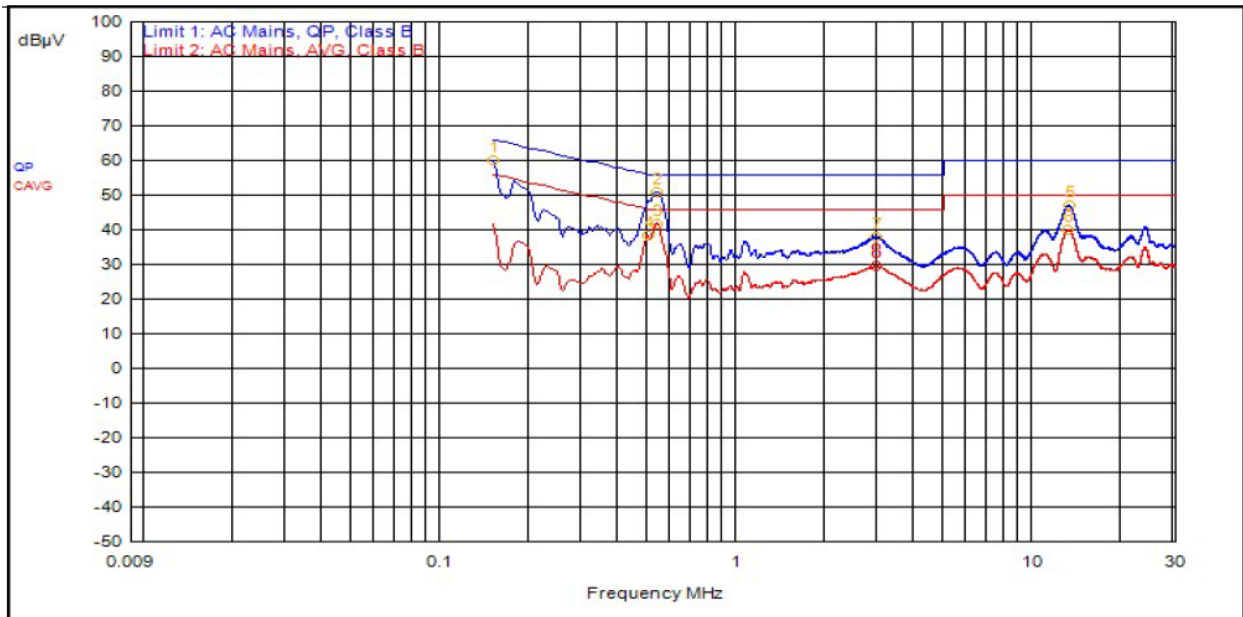
5.2 Conducted Emissions at Mains Ports Data

5.2.1 Line



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	534,000kHz	12.4			QPeak	38.3	50.7	56.0	-5.3		
1	150,000kHz	12.4			QPeak	46.8	59.2	66.0	-6.8		
5	13.041MHz	12.4			QPeak	33.7	46.2	60.0	-13.8		
7	1.083MHz	12.4			QPeak	25.4	37.8	56.0	-18.2		
3	537,000kHz	12.4			C_AVG	29.2	41.6			46.0	-4.4
4	495,000kHz	12.4			C_AVG	25.1	37.5			46.1	-8.6
6	13.041MHz	12.4			C_AVG	26.4	38.8			50.0	-11.2
8	1.083MHz	12.4			C_AVG	16.3	28.7			46.0	-17.3

5.2.2 Neutral



ID	Frequency	Probe	Cable	Atten.	Detector	Meter Read	Meas Level	Limit 1	Limit 1 Dist.	Limit 2	Limit 2 Dist.
2	531,000kHz	12.4			QPeak	38.4	50.8	56.0	-5.2		
1	150,000kHz	12.4			QPeak	47.5	59.9	66.0	-6.1		
5	13.080MHz	12.4			QPeak	34.5	46.9	60.0	-13.1		
7	2.940MHz	12.3			QPeak	25.7	38.0	56.0	-18.0		
3	531,000kHz	12.4			C_AVG	29.4	41.8			46.0	-4.2
4	498,000kHz	12.4			C_AVG	25.9	38.3			46.0	-7.8
6	12.963MHz	12.4			C_AVG	27.5	39.9			50.0	-10.1
8	2.928MHz	12.3			C_AVG	17.2	29.5			46.0	-16.5

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)	Frequency (MHz)	99% Bandwidth (MHz)	26 dB Bandwidth (MHz)
20	6435	17.8	21.1
20	6475	17.7	21.5
20	6515	17.9	21.3
40	6445	36.3	39.2
40	6485	36.3	39.5
80	6465	76.0	83.5
160	6505	156.0	164.0

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)(3) 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 23.31 dBm or 214.29 mW. The limit is 30 dBm EIRP, or 1 Watt EIRP. The antenna has a gain of 6.0 dBi.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Output Power EIRP	Measured PSD
HE20	6435	Mcs0_Nss4	21	14.63	20.63	-1.24
HE20	6475	Mcs0_Nss4	22	14.42	20.42	-1.41
HE20	6515	Mcs0_Nss4	24	14.78	20.78	-1.28
HE40	6445	Mcs0_Nss4	26	17.46	23.46	-1.06
HE40	6485	Mcs0_Nss4	28	17.76	23.76	-1.40
HE80	6465	Mcs0_Nss4	34	21.03	27.03	-1.30
HE160	6505	Mcs0_Nss4	40	23.31	29.31	-1.13

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power *	Output Power EIRP	Measured PSD
HE20	6435	Mcs0_Nss1	9	8.98	14.98	-7.08
HE20	6475	Mcs0_Nss1	9	8.89	14.89	-7.23
HE20	6515	Mcs0_Nss1	11	9.15	15.15	-7.11
HE40	6445	Mcs0_Nss1	14	11.92	17.92	-7.34
HE40	6485	Mcs0_Nss1	15	11.48	17.48	-7.93
HE80	6465	Mcs0_Nss1	21	15.24	21.24	-7.15
HE160	6505	Mcs0_Nss1	26	17.62	23.62	-7.19

Result

In the configuration tested, the maximum summed average RF output power was less than 1 watt EIRP; 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 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 6.0 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 attenuated below the limit; therefore, the EUT complies with the specification.

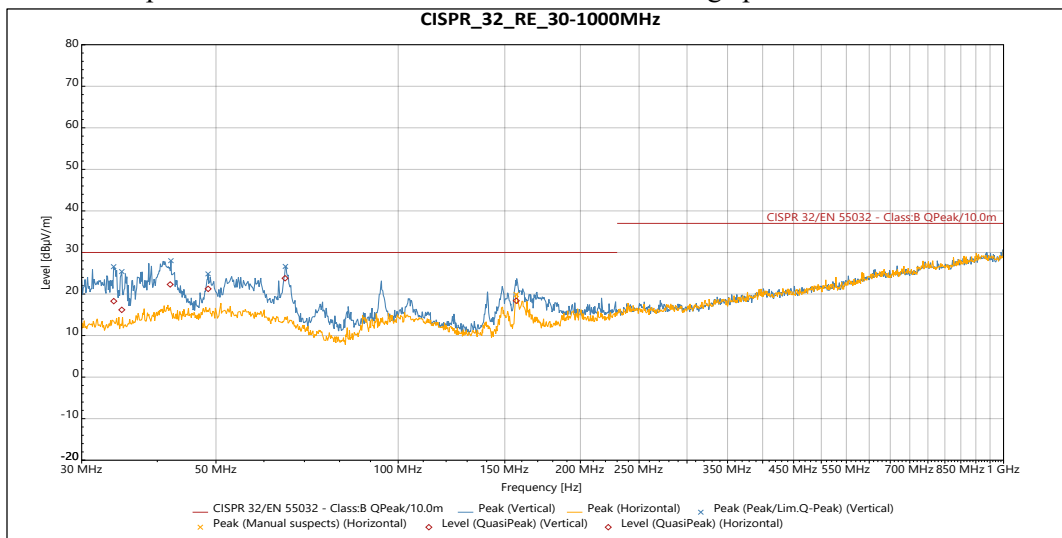
5.5.2 Radiated Spurious Emissions in the Restricted Bands of § 15.205

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 TP40.

Correction Factor = Antenna Factor + Cable Loss - Pre-amp Gain, and is added to the Receiver Reading

Result

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



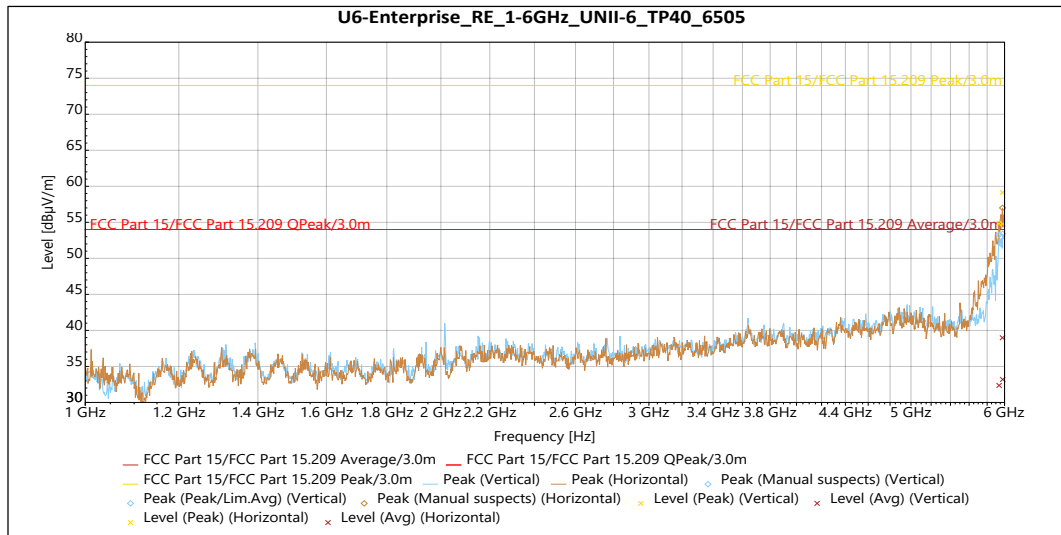
Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	33.896 MHz	18.279	30	-11.721	81	1.106	Vertical	-15.184
QuasiPeak	34.945 MHz	16.188	30	-13.812	319	1.946	Vertical	-14.833
QuasiPeak	42.009 MHz	22.297	30	-7.703	73	2.164	Vertical	-12.832

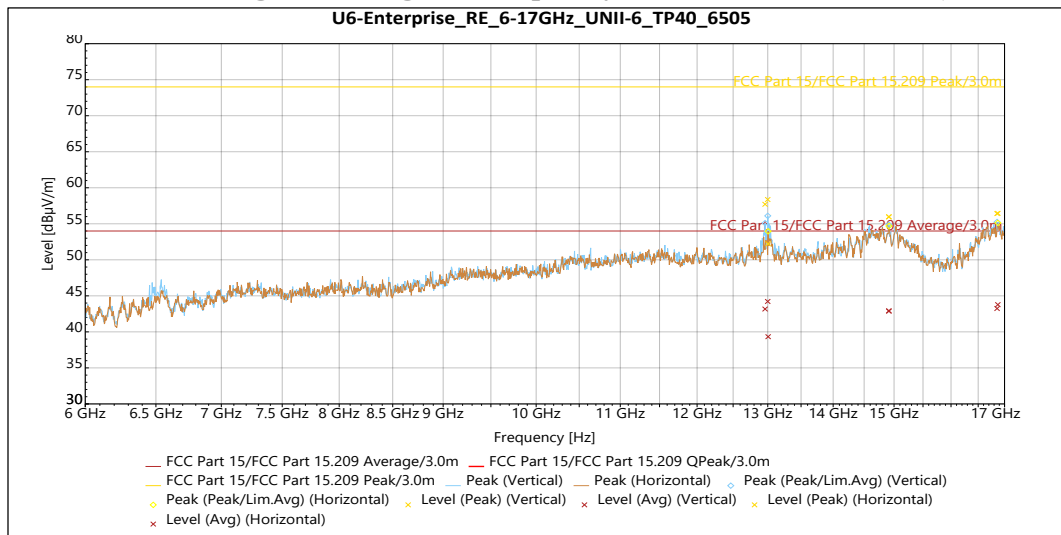
Source	Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	48.534 MHz	21.24	30	-8.76	20	2.62	Vertical	-12.359
QuasiPeak	65.031 MHz	23.786	30	-6.214	108	2.835	Vertical	-14.684

Horizontal

Source	Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin	Azimuth (°)	Height	Pol.	Correction (dB)
QuasiPeak	156.72 MHz	18.377	30	-11.623	235	3.995	Horizontal	-17.354

Table 4: Radiated Emissions 30 – 1000 MHz


Vertical – No significant emissions were observed in this orientation of the antenna from 1 – 6 GHz
 Horizontal – No significant emissions were observed in this orientation of the antenna from 1 – 6 GHz

Table 5: Transmitting on the Highest Frequency 6505 MHz – 1 – 6 GHz (Worse Case)


Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	12.961 GHz	57.708	74	-16.292	360	1.829	Vertical	5.827
Peak	13 GHz	58.369	74	-15.631	30	2.15	Vertical	5.607
Peak	14.912 GHz	55.968	74	-18.032	11	1.674	Vertical	9.975
Peak	16.857 GHz	56.424	74	-17.576	210	1.647	Vertical	11.602

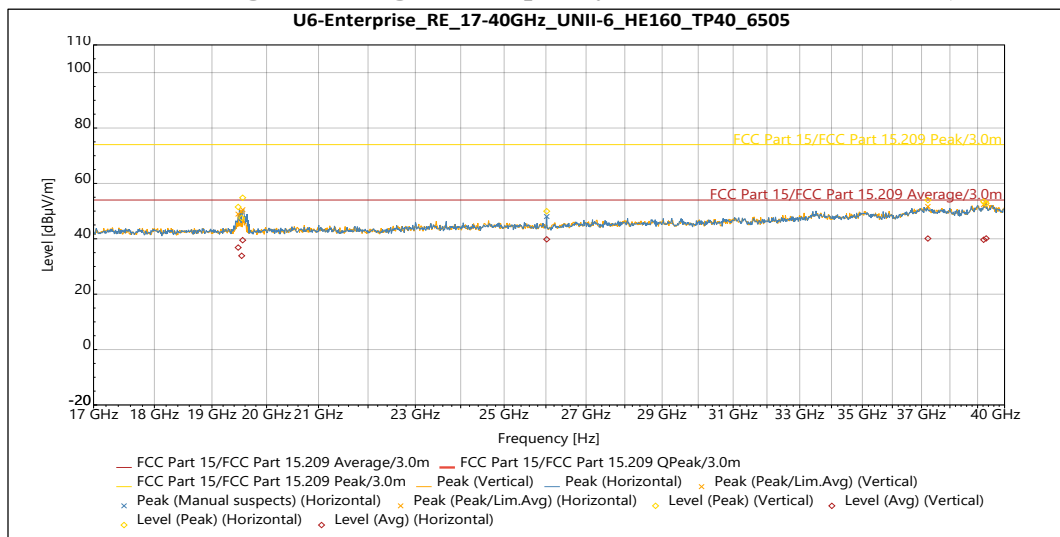
Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	12.961 GHz	43.17	54	-10.83	360	1.829	Vertical	5.827
Avg	13 GHz	44.223	54	-9.777	30	2.15	Vertical	5.607
Avg	14.912 GHz	42.93	54	-11.07	11	1.674	Vertical	9.975
Avg	16.857 GHz	43.244	54	-10.756	210	1.647	Vertical	11.602

Horizontal

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Peak	13.006 GHz	52.221	74	-21.779	53	1.795	Horizontal	5.711
Peak	14.913 GHz	55.956	74	-18.044	168	4	Horizontal	9.951
Peak	16.872 GHz	56.452	74	-17.548	152	3.302	Horizontal	12.032

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Height (m)	Pol.	Correction (dB)
Avg	13.006 GHz	39.326	54	-14.674	53	1.795	Horizontal	5.711
Avg	14.913 GHz	42.869	54	-11.131	168	4	Horizontal	9.951
Avg	16.872 GHz	43.776	54	-10.224	152	3.302	Horizontal	12.032

Table 6: Transmitting on the Highest Frequency 6505 MHz – 6 – 17 GHz (Worse Case)



Vertical

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
Peak	19.474 GHz	51.484	74	-22.516	44	Vertical	-6.379
Peak	19.538 GHz	47.534	74	-26.466	331	Vertical	-6.273
Peak	37.222 GHz	53.946	74	-20.054	59	Vertical	1.477
Peak	39.224 GHz	53.422	74	-20.578	345	Vertical	3.138

Source	Frequency	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
Avg	19.474 GHz	36.842	54	-17.158	44	Vertical	-6.379
Avg	19.538 GHz	33.865	54	-20.135	331	Vertical	-6.273

Source	Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
Avg	37.222 GHz	40.095	54	-13.905	59	Vertical	1.477
Avg	39.224 GHz	39.646	54	-14.354	345	Vertical	3.138

Horizontal

Source	Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
Peak	19.556 GHz	54.821	74	-19.179	346	Horizontal	-6.091
Peak	26.02 GHz	49.957	74	-24.043	314	Horizontal	-5.704
Peak	39.316 GHz	52.824	74	-21.176	11	Horizontal	3.263

Source	Frequency	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Azimuth (°)	Pol.	Correction (dB)
Avg	19.556 GHz	39.503	54	-14.497	346	Horizontal	-6.091
Avg	26.02 GHz	39.807	54	-14.193	314	Horizontal	-5.704
Avg	39.316 GHz	40.144	54	-13.856	11	Horizontal	3.263

Table 7: Transmitting on the Highest Frequency 6505 MHz – 17 – 40 GHz (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 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 5 dBm EIRP in any 1 MHz band during any time interval of continuous transmission. 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 6.0 dBi + Array gain of 6.02 dB which is a total of 12.02 dBi

Results of this testing are summarized.

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD	PSD EIRP
HE20	6435	Mcs0_Nss4	21	14.63	-1.24	4.76
HE20	6475	Mcs0_Nss4	22	14.42	-1.41	4.59
HE20	6515	Mcs0_Nss4	24	14.78	-1.28	4.72
HE40	6445	Mcs0_Nss4	26	17.46	-1.06	4.94
HE40	6485	Mcs0_Nss4	28	17.76	-1.40	4.6
HE80	6465	Mcs0_Nss4	34	21.03	-1.30	4.7
HE160	6505	Mcs0_Nss4	40	23.31	-1.13	4.87

Modulation (BW)	Frequency (MHz)	Data Rate	TP Setting	Conducted Output Power	Measured PSD	PSD EIRP
HE20	6435	Mcs0_Nss1	9	8.98	-7.08	4.94
HE20	6475	Mcs0_Nss1	9	8.89	-7.23	4.79
HE20	6515	Mcs0_Nss1	11	9.15	-7.11	4.91
HE40	6445	Mcs0_Nss1	14	11.92	-7.34	4.68
HE40	6485	Mcs0_Nss1	15	11.48	-7.93	4.09
HE80	6465	Mcs0_Nss1	21	15.24	-7.15	4.87
HE160	6505	Mcs0_Nss1	26	17.62	-7.19	4.83

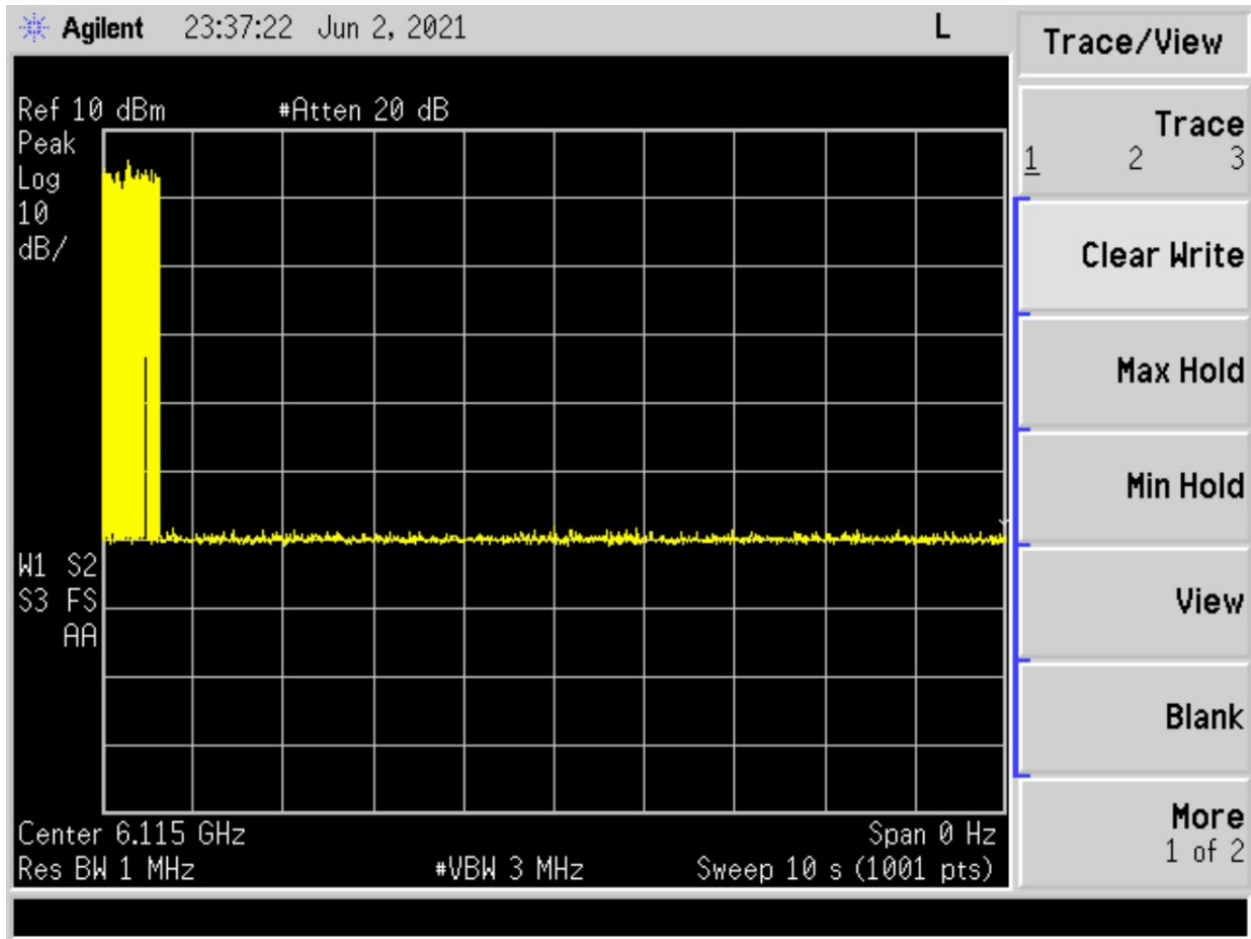
Result

The maximum summed average power spectral density was less than the limit of 5 dBm EIRP; therefore, the EUT complies with the specification.

5.7 §15.407(d) Contention Based Protocol

This product was tested and found to be compliant with the requirements of Contention-based Protocol as specified in FCC Part 15.407 and KDB 987594 D02.

Frequency (MHz)	Sensitivity Level (dBm)	Sensitivity Requirement (dBm)	Trial #									
			1	2	3	4	5	6	7	8	9	10
Bandwidth: 20 MHz			1	2	3	4	5	6	7	8	9	10
6115	-80.39	-62	X	X	X	X	X	X	X	X	X	X
6435	-78.78	-62	X	X	X	X	X	X	X	X	X	X
6535	-79.11	-62	X	X	X	X	X	X	X	X	X	X
6895	-78.55	-62	X	X	X	X	X	X	X	X	X	X
Bandwidth: 160 MHz			1	2	3	4	5	6	7	8	9	10
6112.5 (L)	-67.95	-62	X	X	X	X	X	X	X	X	X	X
6185 (M)	-71.56	-62	X	X	X	X	X	X	X	X	X	X
6257.5 (H)	-67.78	-62	X	X	X	X	X	X	X	X	X	X
6432.5 (L)	-66.32	-62	X	X	X	X	X	X	X	X	X	X
6505 (M)	-72.62	-62	X	X	X	X	X	X	X	X	X	X
6577.5 (H)	-70.22	-62	X	X	X	X	X	X	X	X	X	X
6592.5 (L)	-66.99	-62	X	X	X	X	X	X	X	X	X	X
6665 (M)	-69.63	-62	X	X	X	X	X	X	X	X	X	X
6737.5 (H)	-67.56	-62	X	X	X	X	X	X	X	X	X	X
6912.5 (L)	-65.04	-62	X	X	X	X	X	X	X	X	X	X
6985 (M)	-71.27	-62	X	X	X	X	X	X	X	X	X	X
7057.5 (H)	-70.73	-62	X	X	X	X	X	X	X	X	X	X



Plot 1: Example Detection Trace

Result

The EUT complies with the specification.

-- End of Test Report --