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Emissions Test Report

EUT Name: eero

Model No.: J010001

CFR 47 Part 15.407 2019 and RSS 247: 2017

Prepared for:

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Prepared by:

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Revisions

Revision No.	Date MM/DD/YYYY	Reason for Change	Author
0	02/13/2020	Original Document	

Note: Latest revision report will replace all previous reports.

Statement of Compliance

Applicant:	eero LLC 660 3rd Street San Francisco, CA 94107
Requester / Applicant:	eero LLC
Name of Equipment:	eero
Model No.	J010001
Type of Equipment:	Intentional Radiator
Application of Regulations:	CFR 47 Part 15.407 2019 and RSS 247: 2017
Test Dates:	January 28, 2020 to February 12, 2020

Guidance Documents:

Emissions: ANSI C63.10-2013, KDB 789033 D02 General UNII Test Procedures v02r01, KDB 662911 D01 Multiple Transmitter Output v02r01

Test Methods:

Emissions: ANSI C63.10-2013, KDB 789033 D02 General UNII Test Procedures v02r01

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that the equipment described above has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in the Executive Summary of this report.

This report must not be used to claim product endorsement by A2LA or any agency of the U.S. Government. This report contains data that are not covered by A2LA accreditation. This report shall not be reproduced except in full, without the written authorization of TUV Rheinland of North America.

Kerwinn Corpuz — Test Engineer — Date February 13, 2020

Richard Decker — A2LA Signatory — Date February 13, 2020

Testing Cert #3331.02 **US1131** **2932M**

1 Executive Summary

1.1 Scope

This report is intended to document the status of conformance with the requirements of the CFR 47 Part 15.407 2019 and RSS 247: 2017 based on the results of testing performed on January 28, 2020 to February 12, 2020 on the eero Model J010001 manufactured by eero LLC This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report. This report will document the result for operating frequency bands 5250 to 5350 MHz and 5470 MHz to 5725 MHz with additional band-crossing signal into 5725 MHz to 5825 MHz band.

Note: Per RSS-247, 5600 MHz – 5650 MHz band shall not be capable of transmitting.

1.3 Summary of Test Results

Table 1: Summary of Test Results

Test	Test Method ANSI C63.10	Test Parameters (Measured)	Result
Spurious Emission in Transmit Mode	CFR47 15.209, CFR47 15.407 (b), 2.1053, 2.1057, RSS-GEN Sect.8.9, RSS 247 Sect. 6.2.2.2, Sect 6.2.3.2	Class B	**Complied**
Restricted Bands of Operation	CFR47 15.205, RSS GEN Sect.8.10	Class B	**Complied**
AC Power Conducted Emission	CFR47 15.207, RSS-GEN Sect.8.8	Class B	**Complied**
Occupied Bandwidth	CFR47 15.407 (a), 2.1049, RSS GEN Sect.6.7	See plots	**Complied**
Maximum Output Power	CFR47 15.407 (a), 2.1046 RSS 247 Sect 6.2.2.1 & Sect.6.2.3.1 [see note 2]	21.36 dBm (11a) 21.34 dBm (HT 20) 21.39 dBm (HT 40) 21.45 dBm (VHT80)	**Complied**
Peak Power Spectral Density	CFR47 15.407 (a), RSS 247 Sect.6.2.2.1 & 6.2.3.1	< 11 dBm/MHz	**Complied**
Conducted Emission – Antenna Port	CFR47 15.407 (b), 2.1051, 2.1057, RSS 247 Sect.6.2.2.2 & Sect 6.2.3.2	30 MHz - 40 GHz < -27 dBm/MHz	**Complied**
Frequency Stability	CFR47 15.407 (g), 2.1055, RSS GEN Sect. 6.11	±20 ppm	**Complied**
RF Exposure	CFR47 15.407 (f), 2.1091 RSS-102 Issue 5	General Population	**Complied**

Note: 1. This test report covers band 5250MHz to 5725MHz with band-crossing signals into > 5725MHz.
2. Measurements are conducted for 1x2 max power uncorrelated or non-beamforming.
3. **Per RSS-247, 5600 MHz – 5650 MHz band shall not be capable of transmitting.**

1.4 Special Accessories

No special accessories were necessary in order to achieve compliance.

1.5 Equipment Modifications

None

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America at 1279 Quarry Ln, Pleasanton, CA 94566 is recognized by the commission for performing testing services for the general public on a fee basis. These laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (US1131). The laboratory scope of accreditation includes: Title 47 CFR Parts 15, 18, and 90. The accreditation is updated every 3 years.

2.1.2 NIST / A2LA

TUV Rheinland of North America is accredited by the National Voluntary Laboratory Accreditation Program, which is administered under the auspices of the National Institute of Standards and Technology. The laboratory has been assessed and accredited in accordance with ISO Guide 17025:1999 and ISO 9002 (Lab Code Testing Cert #3331.02). The scope of laboratory accreditation includes emission and immunity testing. The accreditation is updated annually.

2.1.3 Canada – Industry Canada

TUV Rheinland of North America at the 1279 Quarry Ln, Pleasanton, CA 94566 address is accredited by Industry Canada for performing testing services for the general public on a fee basis. This laboratory test facilities have been fully described in reports submitted to and accepted by Industry Canada (File Number 2932M). This reference number is the indication to the Industry Canada Certification Officers that the site meets the requirements of RSS 212, Issue 1 (Provisional). The accreditation is updated every 3 years.

2.1.4 Japan – VCCI

The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) is a group that consists of Information Technology Equipment (ITE) manufacturers and EMC test laboratories. The purpose of the Council is to take voluntary control measures against electromagnetic interference from Information Technology Equipment, and thereby contribute to the development of a socially beneficial and responsible state of affairs in the realm of Information Technology Equipment in Japan. TUV Rheinland of North America at 1279 Quarry Ln, Pleasanton, CA 94566 has been assessed and approved in accordance with the Regulations for Voluntary Control Measures.

VCCI Registration No. for Pleasanton: A-0361

2.1.5 Acceptance by Mutual Recognition Arrangement

The United States has an established agreement with specific countries under the Asia Pacific Laboratory Accreditation Corporation (APLAC) Mutual Recognition Arrangement. Under this agreement, all TUV Rheinland at 1279 Quarry Ln, Pleasanton, CA 94566 test results and test reports within the scope of the laboratory NIST / A2LA accreditation will be accepted by each member country.

2.2 Test Facilities

All of the test facilities are located at 1279 Quarry Lane, Pleasanton, California 94566, USA. The 5015 Brandin Court, Fremont, California 94538, USA location is considered a Pleasanton annex.

2.2.1 Emission Test Facility

The Semi-Anechoic chamber and AC Line Conducted measurement facility used to collect the radiated and conducted data has been constructed in accordance with ANSI C63.7:1992. The site has been measured in accordance with and verified to comply with the theoretical normalized site attenuation requirements of ANSI C63.4-2014, at a test distance of 3 and 5 meters. The site is listed with the FCC and accredited by A2LA (Lab Code Testing Cert #3331.02). The 3/5-meter semi-anechoic chamber used to collect the radiated data has been verified to comply with the theoretical normalized site attenuation requirements of ANSI C63.4-2014, at a test distance of 3 meter and 5 meters. A report detailing this site can be obtained from TUV Rheinland of North America.

2.2.2 Immunity Test Facility

ESD, EFT, Surge, PQF: These tests are performed in an environmentally controlled room with a 3.7 m x 4.8 m x 3.175 mm thick aluminum floor connected to PE ground.

For ESD testing, tabletop equipment is placed on an insulated mat with a surface resistivity of 10^9 Ohms/square on a 1.6 m x 0.8 m x 0.8 m high non-conductive table with a 3.175 mm aluminum top (Horizontal Coupling Plane). The HCP is connected to the main ground plane via a low impedance ground strap through two 470-kΩ resistors. The Vertical Coupling Plane consists of an aluminum plate 50 cm x 50 cm x 3.175 mm thick. The VCP is connected to the main ground plane via a low impedance ground strap through two 470-kΩ resistors.

For EFT, Surge, PQF, the HCP and VCP are removed.

RF Field Immunity testing is performed in a 7.3m x 4.3m x 4.1m anechoic chamber.

RF Conducted and Magnetic Field Immunity testing is performed on a 4.8m x 3.7m x 3.175mm thick aluminum ground plane.

All test areas allow a minimum distance of 1 meter from the EUT to walls or conducting objects.

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per *ISO Guide To The Expression Of Uncertainty In Measurement*, 1st Edition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities; it is equal to the positive square root of the sum of the variances or co-variances of these other quantities, weighted according to how the measurement result varies with changes in these quantities. The term *standard uncertainty* is the result of a measurement expressed as a standard deviation.

2.3.1 Sample Calculation – radiated & conducted emissions

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dBμV/m) = RAW - AMP + CBL + ACF

Where: RAW = Measured level before correction (dBμV)

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated Emissions (dBuV/m)

25 dBuV/m + 17.5 dB – 20 dB + 1.0 dB = 23.5 dBuV/m

2.3.2 Measurement Uncertainty

Per CISPR 16-4-2	**U_{lab}**	**U_{cispr}**
Radiated Disturbance @ 10 meters		
30 – 1,000 MHz	2.25 dB	4.51 dB
Radiated Disturbance @ 3 meters		
30 – 1,000 MHz	2.26 dB	4.52 dB
1 – 6 GHz	2.12 dB	4.25 dB
6 – 18 GHz	2.47 dB	4.93 dB
Conducted Disturbance @ Mains Terminals		
150 kHz – 30 MHz	1.09 dB	2.18 dB
Disturbance Power		
30 MHz – 300 MHz	3.92 dB	4.3 dB

Voltech PM6000A

The estimated combined standard uncertainty for harmonic current and flicker measurements is ± 5.0%.	Per CISPR 16-4-2 Methods

2.3.3 Measurement Uncertainty Immunity

The estimated combined standard uncertainty for ESD immunity measurements is ± 8.2%.	Per IEC 61000-4-2
The estimated combined standard uncertainty for radiated immunity measurements is ± 4.10 dB.	Per IEC 61000-4-3
The estimated combined standard uncertainty for conducted immunity measurements with CDN is ± 3.66 dB	Per IEC 61000-4-6
The estimated combined standard uncertainty for power frequency magnetic field immunity is ± 2.9%.	Per IEC 61000-4-8

Thermo KeyTek EMC Pro

The estimated combined standard uncertainty for EFT fast transient immunity measurements is ± 2.6%.
The estimated combined standard uncertainty for surge immunity measurements is ± 2.6%.
The estimated combined standard uncertainty for voltage variation and interruption measurements is ± 1.74%.

The expanded uncertainty at a level of 95% confidence is obtained by multiplying the combined standard uncertainty by a coverage factor of 2. Compliance criteria are not based on measurement uncertainty.

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard 17025:2005. Equipment calibration records are kept on file at the test facility.

3 Product Information

3.1 Product Description

The Model J010001, eero, is a 2x2 home WiFi router. It is intended to operate as a dual band (2.4GHz and 5GHz) wireless router over 20 MHz, 40 MHz and 80 MHz channels. The router will be in compliance with regulatory standards of regions it will be operating in.

3.2 Equipment Configuration

A description of the equipment configuration is given in the Test Plan Section. The EUT was tested as called for in the test standard and was configured and operated in a manner consistent with its intended use. The EUT was connected to rated power and allowed to reach intended operating conditions. The placement of the EUT system components was guided by the test standard and selected to represent typical installation conditions.

In the case of an EUT that can operate in more than one configuration, preliminary testing was performed to determine the configuration that produced maximum radiation.

The final configuration was selected to produce the worst case radiation for emissions testing and to place the EUT in the most susceptible state for immunity testing.

3.3 Operating Mode

A description of the operation mode is given in the Test Plan Section. In the case of an EUT that can operate in more than one state, preliminary testing was performed to determine the operating mode that produced maximum radiation.

The final operating mode was selected to produce the worst case radiation for emissions testing and to place the EUT in the most susceptible state for immunity testing.

3.4 Unique Antenna Connector

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of CFR47 Parts 15.211, 15.213, 15.217, 15.219, or 15.221.

3.4.1 Results

The eero has internal 3 Flex PCB antennas for both 2.4GHz and 5GHz ranges.

The U-NII-2A (5250 – 5350 MHz) and U-NII-2C (5470 – 5725 MHz) antenna gains are listed below;

Frequency Bands	Uncorrelated Peak Gain	Correlated Total Gain
(MHz)	(dBi)	(dBi)
Bluetooth		
2400 – 2483.5	4.15	
WiFi		
2400 – 2483.5	3.40	6.41
5150 – 5250	3.11	6.12
5250 – 5350	3.96	6.97
5470 – 5725	4.25	7.26
5725 – 5850	3.97	6.98

3.5 Duty Cycle

The WiFi Router was measured for the duty cycle. All 5 GHz bands shares one chip.

Calculation of transmit duty cycle. The duty cycle (%) = (ON time / Period) * 100%

3.5.1 Result

Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a	1.430	1.515	94.4	0.25
802.11n HT20 / VHT20	1.340	1.415	94.7	0.24
802.11n HT40 / VHT40	0.659	0.746	88.3	0.54
802.11ac VHT80	0.3324	0.4071	81.7	0.88
Notes: EUT configured and measured for duty cycle. Duty factor will be used toward RF measurement offset.				

Figure 1: Duty Cycle for 802.11a at 5260MHz

Figure 2: Duty Cycle for 802.11n HT20 and 802.11ac VHT20 at 5260MHz

Figure 3: Duty Cycle for 802.11n HT40 and 802.11ac VHT40 at 5270MHz

Figure 4: Duty Cycle for 802.11ac VHT80 at 5290MHz

4 Emissions

Testing was performed in accordance with CFR 47 Part 15.407: 2019 and RSS 247: 2017. These test methods are listed under the laboratory's A2LA Scope of Accreditation. This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. Procedures described in section 8 of the standard were used.

4.1 Output Power Requirements

The maximum output power requirement is the maximum equivalent isotropic radiated power delivering at the transmitting antenna under specified conditions of measurements in the presence of modulation.

The maximum output power and harmonics shall not exceed CFR47 Part 15.407 (a) and RSS 247 Sect. 6.2.

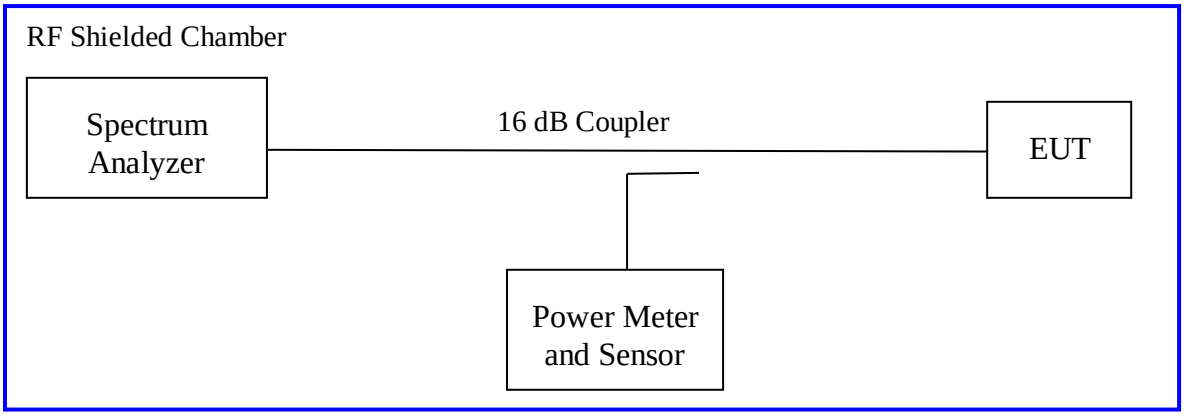
Part 15.407(a)(2) – Band 5250-5350 MHz and 5470-5725 MHz (conducted output power) : 250 mW or 11 dBm + 10 log B. Where B is 26 dB Bandwidth.

RSS 247 Section 6.2.2.3 – Band 5250-5350 MHz (e.i.r.p.): 200 mW. Section 6.2.3.1 – Band 5740-5725 MHz (conducted output power): 250 mW or 11 dBm + 10 log B. Where B is 99% Bandwidth.

4.1.1 Test Method

The ANSI C63.10-2013 Section 12.3.2.2 conducted method was used to measure the channel power output. The preliminary investigation was performed at different data rate/chain to determine the highest power output for each mode. The worst findings were conducted on 2 channels in each operating range per CFR47 Part 15.407(a) and RSS 247 Sect. 6.2; 5250 MHz to 5725 MHz. The worst mode results indicated below.

Test Setup:



Method SA-2 of "KDB 789033 D02 – Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices" were used.

Each chain was measured individually and applied the measure-and-sum approach per KDB662911.

The total directional gain was calculated by summing 2 antennas.

4.1.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 2: RF Output Power at the Antenna Port Test Results – Non Beamforming Mode

Test Date: January 29, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 3.96 dBi (5.25-5.35GHz) & 4.25 dBi (5.47-5.725GHz)
Operating Mode: Non Beamforming & Uncorrelated	**Signal State**: Modulated
Ambient Temp.: 22 °C	**Relative Humidity:**39%
Remark: 1. Highlighted data, its plots are placed in the report. 2. RSS-247 Limit = 23 dBm – 3.96 dBi = 19.04 dBm.	

802.11a, 1x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]	Note
5260	24.00	20.82	20.95	0.25	21.20	-2.80	FCC
5280	24.00	20.81	20.80	0.25	21.06	-2.94	FCC
5320	24.00	18.63	18.78	0.25	19.03	-4.97	FCC
5260	19.04	18.07	18.36	0.25	18.61	-0.43	RSS
5280	19.04	18.53	18.71	0.25	18.96	-0.08	RSS
5320	19.04	18.63	18.78	0.25	19.03	-0.01	RSS
5500	24.00	18.75	18.78	0.25	19.03	-4.97	FCC/RSS
5680	24.00	20.60	21.11	0.25	21.36	-2.64	FCC/RSS
5700	24.00	16.8	17.3	0.25	17.55	-6.45	FCC/RSS

Note: The highest output power observed at 802.11a, 6Mbps, 1 Data Stream, 94.4% duty cycle.

802.11ac VHT20, 1x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]	Note
5260	24.00	20.85	20.89	0.24	21.13	-2.87	FCC
5300	24.00	20.80	20.90	0.24	21.14	-2.86	FCC
5320	24.00	18.63	18.64	0.24	18.88	-5.12	FCC
5260	19.04	18.03	18.32	0.24	18.56	-0.48	RSS
5280	19.04	18.43	18.54	0.24	18.78	-0.26	RSS
5320	19.04	18.63	18.64	0.24	18.88	-0.16	RSS
5500	24.00	18.74	18.74	0.24	18.98	-5.02	FCC/RSS
5520	24.00	20.98	21.10	0.24	21.34	-2.66	FCC/RSS
5700	24.00	16.85	17.22	0.24	17.46	-6.54	FCC/RSS

Note: The highest output power observed at VHT20, MCS0, 1 Data Stream, 94.7% duty cycle. VHT20 mode is worst case (covers HT20 mode).

802.11ac VHT40, 1x2							
Freq. (MHz)	**Limit [dBm]**	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Margin [dB]**	**Note**
5270	24.00	21.19	21.13	0.54	21.73	-2.27	FCC
5310	24.00	17.33	17.37	0.54	17.91	-6.09	FCC
5270	19.04	17.87	18.23	0.54	18.77	-0.27	RSS
5310	19.04	17.33	17.37	0.54	17.91	-1.13	RSS
5510	24.00	17.66	17.85	0.54	18.39	-5.61	FCC/RSS
5550	24.00	20.70	20.85	0.54	21.39	-2.61	FCC/RSS
5670	24.00	16.99	17.34	0.54	17.88	-6.12	FCC/RSS
Note: The highest output power observed at VHT40, MCS0, 1 Data Stream, 88.3% duty cycle. VHT40 mode is worst case (covers HT40 mode).							
802.11ac VHT80, 1x2							
Freq. (MHz)	**Limit [dBm]**	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Margin [dB]**	**Note**
5290	24.00	17.76	17.84	0.88	18.72	-5.28	FCC
5290	19.04	17.76	17.84	0.88	18.72	-0.32	RSS
5530	24.00	17.67	17.84	0.88	18.72	-5.28	FCC/RSS
5610	24.00	19.12	19.30	0.88	20.18	-3.82	FCC/RSS
Note: The highest output power observed at VHT80, MCS0, 1 Data Stream, 81.7% duty cycle.							

Table 3: RF Output Power at the Antenna Port Test Results – Straddle Channels

Test Date: February 11, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 4.25 dBi (U-NII-2C) & 3.97 dBi (U-NII-3)
Operating Mode: Non Beamforming & Uncorrelated	**Signal State**: Modulated
Ambient Temp.: 22 °C	**Relative Humidity:**37%

Remark: 1. Limit = 11 dBm + 10 log B, where B is 26 dB EBW, or 24 dBm, (whichever is lesser).
2. Highlighted data, its plots are placed in the report.
3. Marker 5 is U-NII-2C power measurement and Marker 6 is U-NII-3 power measurement in the plot.

802.11a (5720 MHz), 1x2

Operating Band	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]
U-NII-2C	22.82	20.13	20.38	0.25	20.63	-2.19
U-NII-3	18.19	13.96	14.20	0.25	14.45	-3.73

Note: The highest output power observed at 6Mbps, 1 Data Stream, 94.4% duty cycle.

802.11ac VHT20 (5720 MHz), 1x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]
U-NII-2C	22.96	19.93	20.25	0.24	20.49	-2.47
U-NII-3	18.45	14.38	14.48	0.24	14.72	-3.73

Note: 1. The highest output power observed at MCS0, 1 Data Stream, 94.7% duty cycle.
2. VHT20 mode is worst case (covers HT20 mode).

802.11ac VHT40 (5710 MHz), 1x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]
U-NII-2C	24.00	20.63	20.91	0.54	21.45	-2.55
U-NII-3	21.33	9.63	9.73	0.54	10.27	-11.06

Note: 1. The highest output power observed at MCS0, 1 Data Stream, 88.3% duty cycle.
2. VHT40 mode is worst case (covers HT40 mode).

802.11ac VHT80 (5690 MHz), 1x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Margin [dB]
U-NII-2C	24.00	20.34	20.57	0.88	21.45	-2.55
U-NII-3	19.08	6.73	6.69	0.88	7.61	-11.47

Note: The highest output power observed at MCS0, 1 Data Stream, 81.7% duty cycle.

Table 4: RF Output Power at the Antenna Port Test Results – Beamforming Mode

Test Date: January 30, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Total Antenna Gain:** 6.97 dBi (5.25-5.35GHz) & 7.26 dBi (5.47-5.725GHz)
Operating Mode: Beamforming & Correlated	**Signal State**: Modulated
Ambient Temp.: 22 °C	**Relative Humidity:**41%

Remark: 1. If antenna exceeds 6dBi, apply: POut = PLimit − (GTx − 6)
2. The limit is calculated with 6dBi exceeded antenna gain.
3. RSS-247 Limit = 23 dBm – 6.97 dBi = 16.03 dBm.
4. 802.11a does not support beamforming mode or correlated.
5. Highlighted data, its plots are placed in the report.

802.11ac VHT20, 2x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Total RMS Power [dBm]	Margin [dB]	
5260	23.03	16.86	16.83	0.24	20.10	-2.93	FCC
5300	23.03	16.91	16.84	0.24	20.13	-2.90	FCC
5320	23.03	16.36	16.45	0.24	19.66	-3.37	FCC
5260	16.03	12.70	12.75	0.24	15.98	-0.05	RSS
5280	16.03	12.60	12.53	0.24	15.82	-0.21	RSS
5320	16.03	12.67	12.65	0.24	15.91	-0.12	RSS
5500	22.74	16.81	16.84	0.24	20.08	-2.66	FCC/RSS
5520	22.74	17.00	17.01	0.24	20.26	-2.48	FCC/RSS
5700	22.74	16.34	16.90	0.24	19.87	-2.86	FCC/RSS

Note: 1. The highest output power observed at MCS0, 2 Data Streams, 94.7% duty cycle.
2. VHT20 mode is worst case (covers HT20 mode).

802.11ac VHT40, 2x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Total RMS Power [dBm]	Margin [dB]	Note
5270	23.03	18.31	18.58	0.54	22.00	-1.03	FCC
5310	23.03	16.12	16.21	0.54	19.72	-3.31	FCC
5270	16.03	11.96	12.12	0.54	15.59	-0.44	RSS
5310	16.03	12.31	12.34	0.54	15.88	-0.15	RSS
5510	22.74	16.43	16.62	0.54	20.08	-2.66	FCC/RSS
5550	22.74	18.18	18.34	0.54	21.81	-0.93	FCC/RSS
5670	22.74	16.81	17.16	0.54	20.54	-2.20	FCC/RSS

Note: 1. The highest output power observed at MCS0, 2 Data Streams, 88.3% duty cycle.
2. VHT40 mode is worst case (covers HT40 mode).

802.11ac VHT80, 2x2							
Freq. (MHz)	**Limit [dBm]**	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Total RMS Power [dBm]**	**Margin [dB]**	**Note**
5270	23.03	16.17	16.03	0.88	19.99	-3.04	FCC
5270	16.03	11.74	11.70	0.88	15.61	-0.42	RSS
5530	22.74	16.00	16.12	0.88	19.95	-2.79	FCC/RSS
5610	22.74	17.54	17.59	0.88	21.46	-1.28	FCC/RSS
Note: The highest output power observed at MCS0, 2 Data Streams, 81.7% duty cycle.							

Table 5: RF Output Power at the Antenna Port Test Results – Straddle Channels

Test Date: February 12, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 7.26 dBi (U-NII-2C) & 6.98 dBi (U-NII-3)
Operating Mode: Beamforming & Correlated	**Signal State**: Modulated
Ambient Temp.: 23 °C	**Relative Humidity:**40%

Remark: 1. Limit = 11 dBm + 10 log B, where B is 26 dB EBW, or 24 dBm, (whichever is lesser).
2. If antenna exceeds 6dBi, apply: POut = PLimit − (GTx − 6).
3. The limit is calculated with 6dBi exceeded antenna gain.
4. 802.11a does not support beamforming mode or correlated.
5. Highlighted data, its plots are placed in the report.
6. Marker 5 is U-NII-2C power measurement and Marker 6 is U-NII-3 power measurement in the plot.

802.11ac VHT20, 2x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Total RMS Power [dBm]	Margin [dB]
U-NII-2C	21.55	15.40	15.70	0.24	18.80	-2.75
U-NII-3	17.12	9.86	10.10	0.24	13.23	-3.89

Note: The highest output power observed at MCS0, 2 Data Streams, 94.7% duty cycle.

802.11ac VHT40, 2x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Total RMS Power [dBm]	Margin [dB]
U-NII-2C	22.74	17.98	18.14	0.54	21.61	-1.13
U-NII-3	16.54	7.37	6.96	0.54	10.72	-5.83

Note: The highest output power observed at MCS0, 2 Data Streams, 88.3% duty cycle.

802.11ac VHT80, 2x2

Freq. (MHz)	Limit [dBm]	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Total RMS Power [dBm]	Margin [dB]
U-NII-2C	22.74	17.65	17.85	0.88	21.64	-1.10
U-NII-3	18.04	4.44	4.61	0.88	8.41	-9.63

Note: The highest output power observed at MCS0, 2 Data Streams, 81.7% duty cycle.

Figure 5: RMS Max Power-5260MHz-802.11a-6Mbps-TP21-1x2-CH0 (FCC)

Figure 6: RMS Max Power-5260MHz-802.11a-6Mbps-TP21-1x2-CH1 (FCC)

Figure 7: RMS Max Power-5320MHz-802.11a-6Mbps-TP19-1x2-CH0 (RSS)

Figure 8: RMS Max Power-5320MHz-802.11a-6Mbps-TP19-1x2-CH1 (RSS)

Figure 9: RMS Max Power-5680MHz-802.11a-6Mbps-TP21-1x2-CH0

Figure 10: RMS Max Power-5680MHz-802.11a-6Mbps-TP21-1x2-CH1

Figure 11: RMS Max Power-5260MHz-802.11ac VHT20-MCS0-TP21-1x2-CH0 (FCC)

Figure 12: RMS Max Power-5300MHz-802.11ac VHT20-MCS0-TP21-1x2-CH1 (FCC)

Figure 13: RMS Max Power-5320MHz-802.11ac VHT20-MCS0-TP19-1x2-CH0 (RSS)

Figure 14: RMS Max Power-5320MHz-802.11ac VHT20-MCS0-TP19-1x2-CH1 (RSS)

Figure 15: RMS Max Power-5520MHz-802.11ac VHT20-MCS0-TP21-1x2-CH0

Figure 16: RMS Max Power-5520MHz-802.11ac VHT20-MCS0-TP21-1x2-CH1

Figure 17: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP21-1x2-CH0 (FCC)

Figure 18: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP21-1x2-CH1 (FCC)

Figure 19: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP18-1x2-CH0 (RSS)

Figure 20: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP18-1x2-CH1 (RSS)

Figure 21: RMS Max Power-5550MHz-802.11ac VHT40-MCS0-TP21-1x2-CH0

Figure 22: RMS Max Power-5550MHz-802.11ac VHT40-MCS0-TP21-1x2-CH1

Figure 23: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP18.5-1x2-CH0 (FCC & RSS)

Figure 24: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP18.5-1x2-CH1 (FCC & RSS)

Figure 25: RMS Max Power-5610MHz-802.11ac VHT80-MCS0-TP20.5-1x2-CH0

Figure 26: RMS Max Power-5610MHz-802.11ac VHT80-MCS0-TP20.5-1x2-CH1

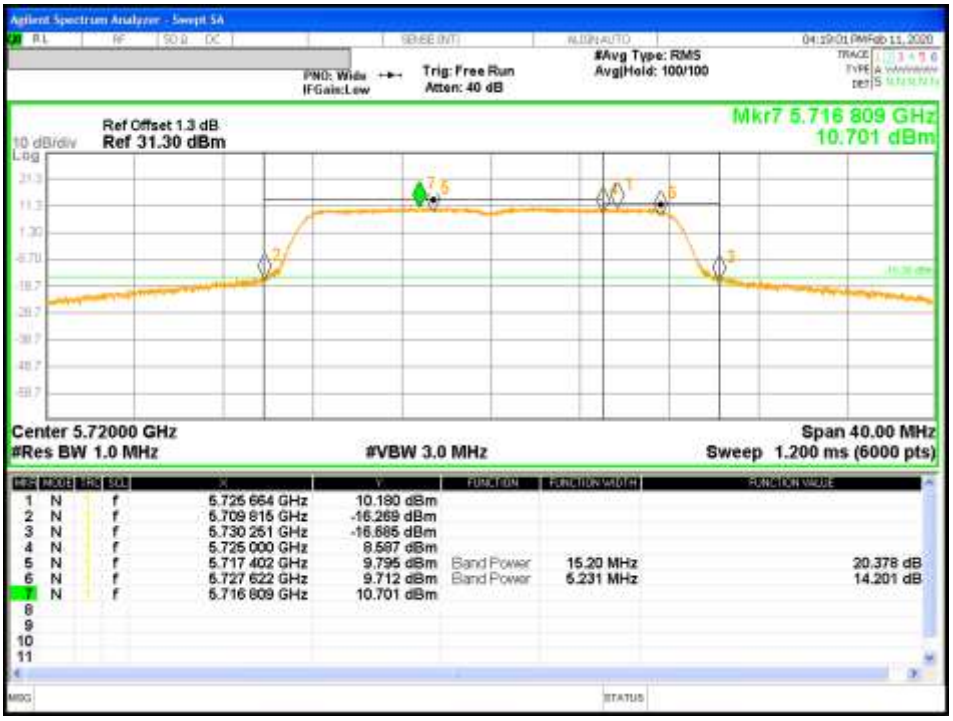


Figure 27: RMS Max Power & PSD-5720MHz-802.11a-6Mbps-TP21-1x2-CH1 (Straddle Channel in UNII2C & UNII3)

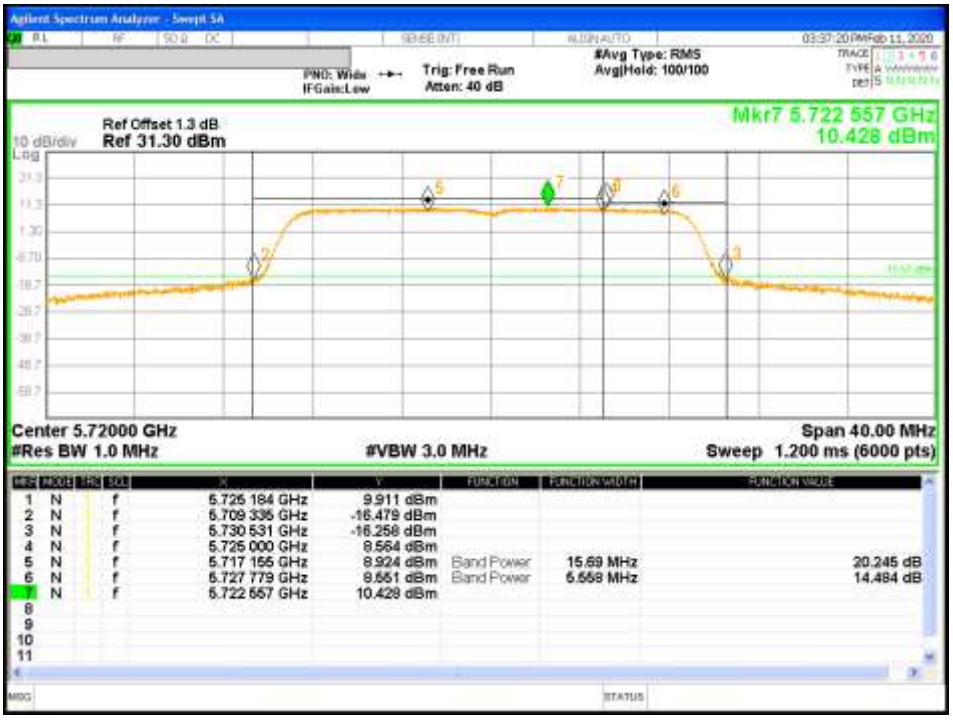


Figure 28: RMS Max Power & PSD-5720MHz-802.11ac VHT20-MCS0-TP21-1x2-CH1 (Straddle Channel in UNII2C & UNII3)

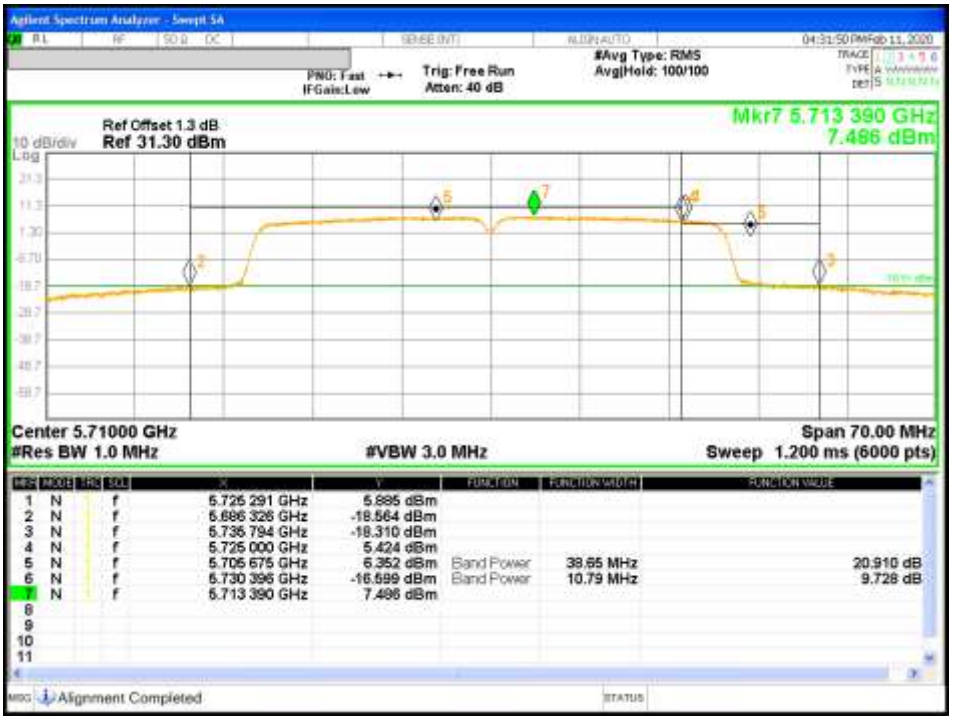


Figure 29: RMS Max Power & PSD-5710MHz-802.11ac VHT40-MCS0-TP21-1x2-CH1 (Straddle Channel in UNII2C & UNII3)

Figure 30: RMS Max Power & PSD-5690MHz-802.11ac VHT80-MCS0-TP21.5-1x2-CH1 (Straddle Channel in UNII2C & UNII3)

Figure 31: RMS Max Power-5300MHz-802.11ac VHT20-MCS0-TP17-2x2-CH0 (FCC)

Figure 32: RMS Max Power-5300MHz-802.11ac VHT20-MCS0-TP17-2x2-CH1 (FCC)

Figure 33: RMS Max Power-5260MHz-802.11ac VHT20-MCS0-TP13-2x2-CH0 (RSS)

Figure 34: RMS Max Power-5260MHz-802.11ac VHT20-MCS0-TP13-2x2-CH1 (RSS)

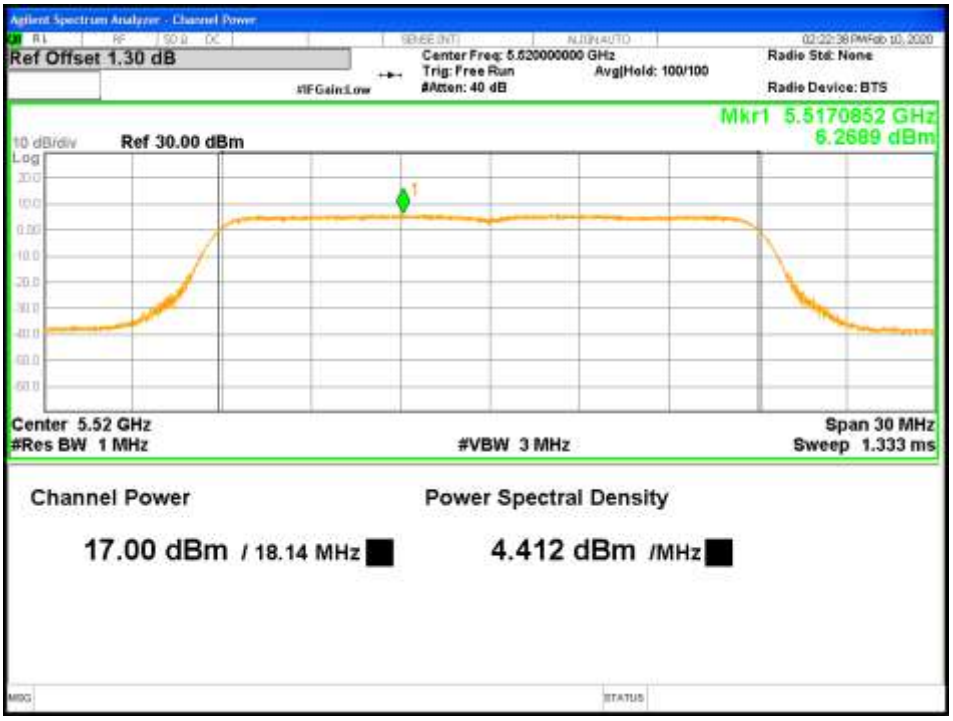


Figure 35: RMS Max Power-5520MHz-802.11ac VHT20-MCS0-TP17-2x2-CH0

Figure 36: RMS Max Power-5520MHz-802.11ac VHT20-MCS0-TP17-2x2-CH1

Figure 37: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP18.5-2x2-CH0 (FCC)

Figure 38: RMS Max Power-5270MHz-802.11ac VHT40-MCS0-TP18.5-2x2-CH1 (FCC)

Figure 39: RMS Max Power-5310MHz-802.11ac VHT40-MCS0-TP13-2x2-CH0 (RSS)

Figure 40: RMS Max Power-5310MHz-802.11ac VHT40-MCS0-TP13-2x2-CH1 (RSS)

Figure 41: RMS Max Power-5550MHz-802.11ac VHT40-MCS0-TP18.5-2x2-CH0

Figure 42: RMS Max Power-5550MHz-802.11ac VHT40-MCS0-TP18.5-2x2-CH1

Figure 43: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP17-2x2-CH0 (FCC)

Figure 44: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP17-2x2-CH1 (FCC)

Figure 45: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP13-2x2-CH0 (RSS)

Figure 46: RMS Max Power-5290MHz-802.11ac VHT80-MCS0-TP13-2x2-CH1 (RSS)

Figure 47: RMS Max Power-5610MHz-802.11ac VHT80-MCS0-TP19-2x2-CH0

Figure 48: RMS Max Power-5610MHz-802.11ac VHT80-MCS0-TP19-2x2-CH1

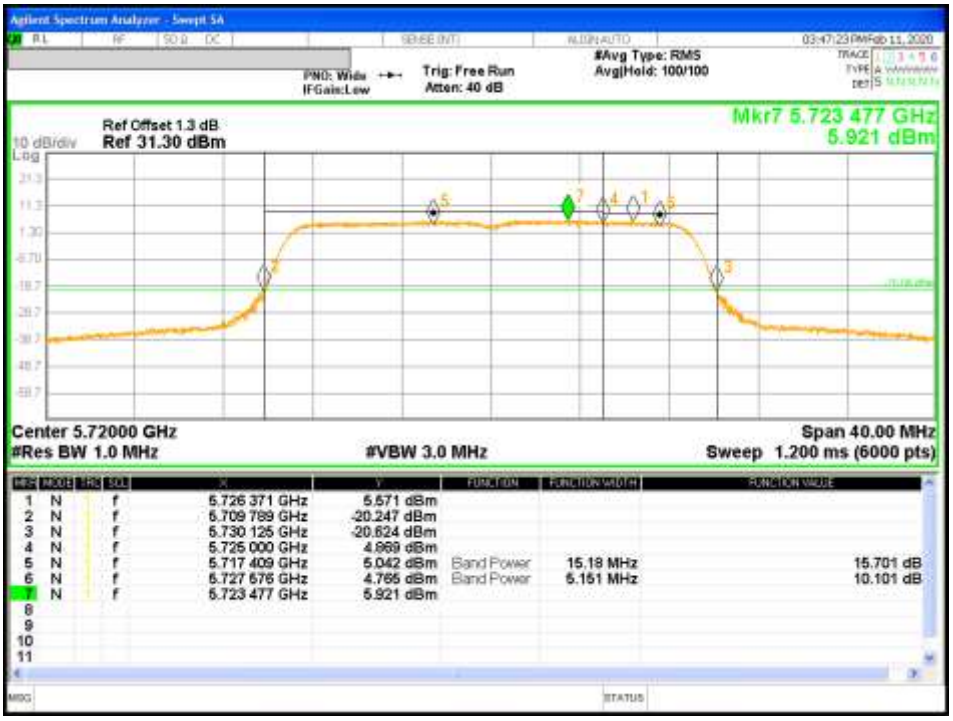


Figure 49: RMS Max Power & PSD-5720MHz-802.11ac VHT20-MCS0-TP17-2x2-CH1 (Straddle Channel in UNII2C & UNII3)

Figure 50: RMS Max Power & PSD-5710MHz-802.11ac VHT40-MCS0-TP18.5-2x2-CH1 (Straddle Channel in UNII2C & UNII3)

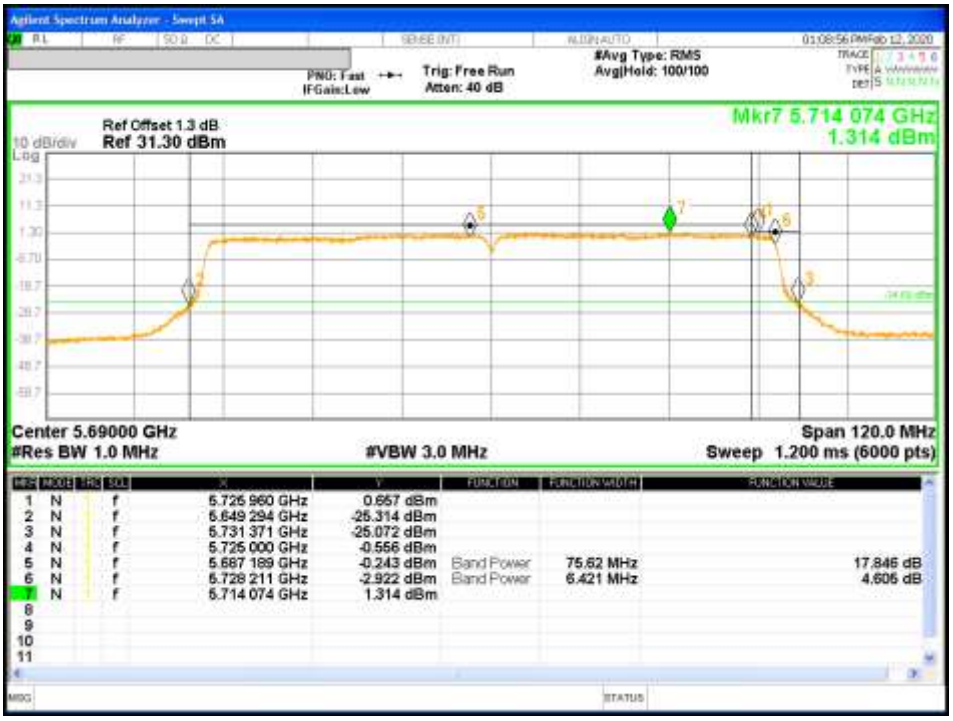


Figure 51: RMS Max Power & PSD-5690MHz-802.11ac VHT80-MCS0-TP19-2x2-CH1 (Straddle Channel in UNII2C & UNII3C)

4.2 Occupied Bandwidth

The occupied bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency.

The 99% bandwidth is the bandwidth in which 99% of the transmitted power occupied.

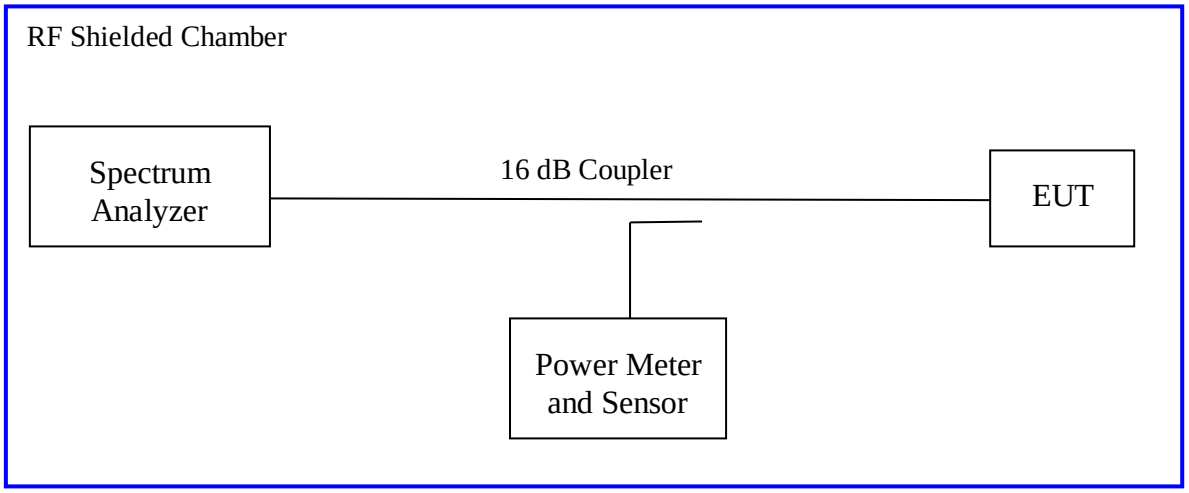
The 26 dB bandwidth is defined the bandwidth of 26 dBr from highest transmitted level of the fundamental frequency.

There is no restriction limits for the bandwidth. The 26 dB bandwidth was used to determine the limit for maximum conducted output power per CFR47 Part 15.407(a).

4.2.1 Test Method

The conducted method was used to measure the occupied bandwidth. The measurement was performed with modulation per CFR47 15.407(a) and RSS Gen Sect.6.6. The preliminary investigation was performed to find the narrowest 26 dB bandwidth for each operational mode at different data rates. This worst finding was performed on 2 channels in each operating frequency range; 5250 MHz to 5350 MHz and 5470 MHz to 5725 MHz. The worst results indicated below.

Test Setup:



4.2.2 Results

These occupied bandwidth measurements were taken for references only.

Table 6: Occupied Bandwidth (U-NII-2A) – Test Results

Test Date: January 29, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 3.96 dBi (5.25-5.35GHz)
Operating Mode: Non Beamforming & Uncorrelated	**Signal State**: Modulated
Ambient Temp.: 22 °C	**Relative Humidity:**39%
Remark: Highlighted data, its plots are placed in the report.	

Bandwidth for 802.11a

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5260	16.59	16.46	27.89	22.80
5280	16.56	16.46	26.71	19.99
5320	16.49	16.44	24.12	20.48

Note: The measured bandwidths data rate at 6Mbps.

Bandwidth for 802.11ac VHT20

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5260	17.75	17.64	28.27	20.57
5280	17.72	17.63	27.19	20.05
5320	17.68	17.65	25.33	20.61

Note: The measured bandwidths data rate at MCS0.

Bandwidth for 802.11ac VHT40

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5270	36.27	36.08	59.78	54.85
5310	36.20	36.12	58.86	55.86

Note: The measured bandwidths data rate at MCS0.

Bandwidth for 802.11ac VHT80

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5290	75.71	75.66	118.00	84.63

Note: The measured bandwidths data rate at MCS0.

Table 7: Occupied Bandwidth (U-NII-2C) – Test Results

Test Date: January 29, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 4.25 dBi (5.47-5.725GHz)
Operating Mode: Non Beamforming & Uncorrelated	**Signal State**: Modulated
Ambient Temp.: 22 °C	**Relative Humidity:**39%
Remark: Highlighted data, its plots are placed in the report.	

Bandwidth for 802.11a

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5500	16.50	16.47	25.57	21.71
5580	16.48	16.46	24.61	22.65
5700	16.47	16.50	21.07	22.83

Note: The measured bandwidths data rate at 6Mbps.

Bandwidth for 802.11ac VHT20

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5500	17.67	17.65	26.07	22.50
5580	17.65	17.64	22.08	24.57
5700	17.67	17.65	23.18	23.95

Note: The measured bandwidths data rate at MCS0.

Bandwidth for 802.11ac VHT40

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5510	36.09	36.09	58.24	53.83
5550	36.15	36.17	57.54	57.26
5670	36.13	36.15	58.08	56.13

Note: The measured bandwidths data rate at MCS0.

Bandwidth for 802.11ac VHT80

Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)	
	Ch0	Ch1	Ch0	Ch1
5530	75.68	75.64	85.29	83.88
5610	75.74	75.69	85.68	83.78

Note: The measured bandwidths data rate at MCS0.

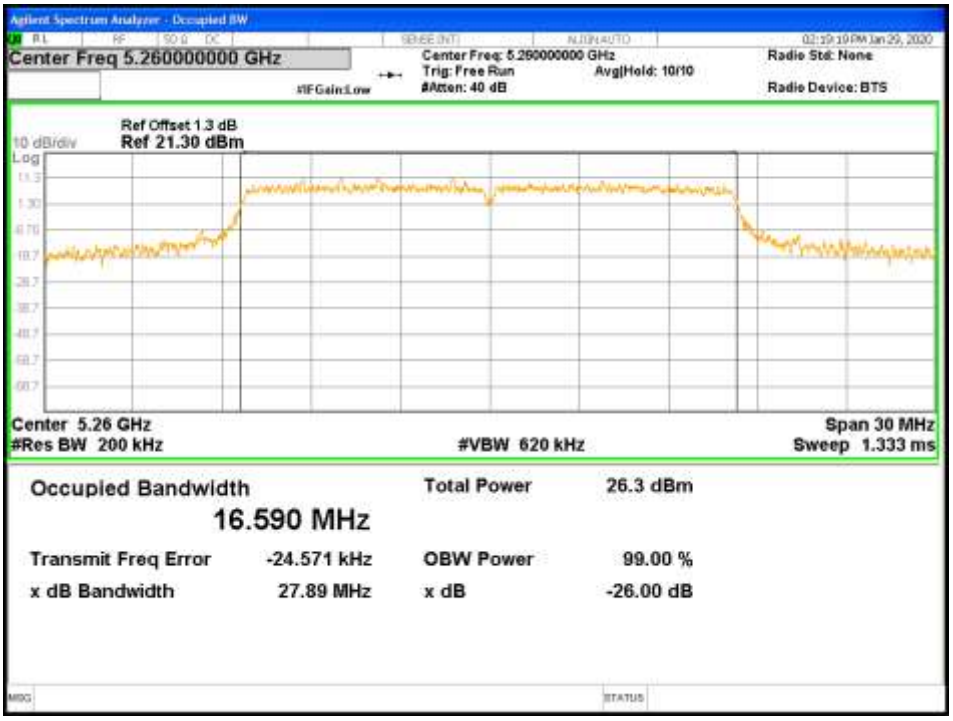


Figure 52: 99% & 26dB Occupied Bandwidth-5260MHz-802.11a-TP21-CH0

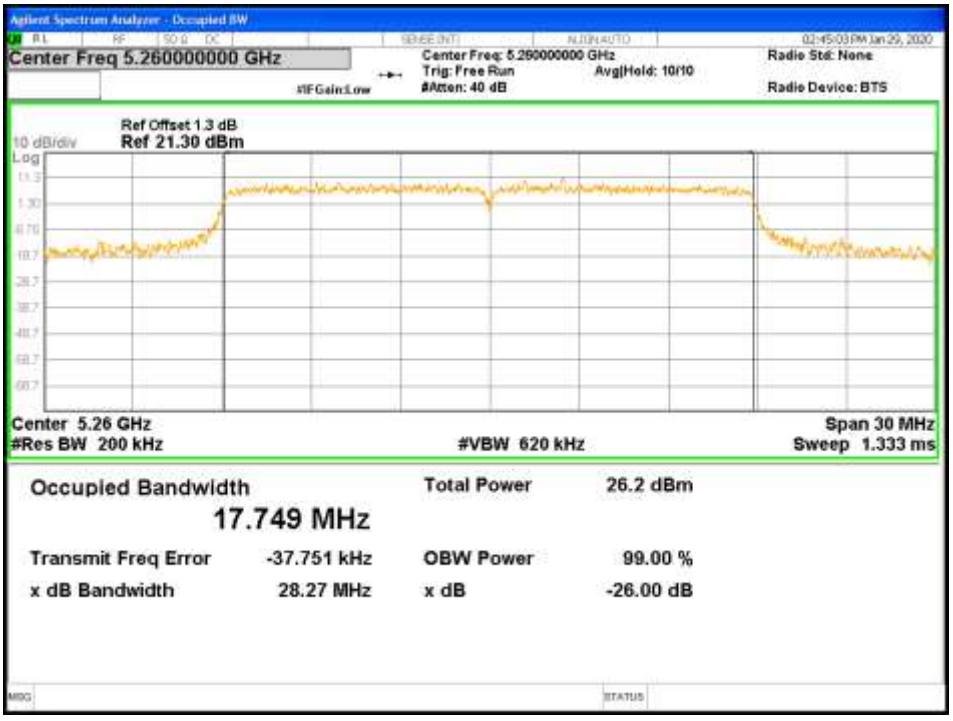


Figure 53: 99% & 26dB Occupied Bandwidth-5260MHz-802.11ac VHT20-TP21-CH0

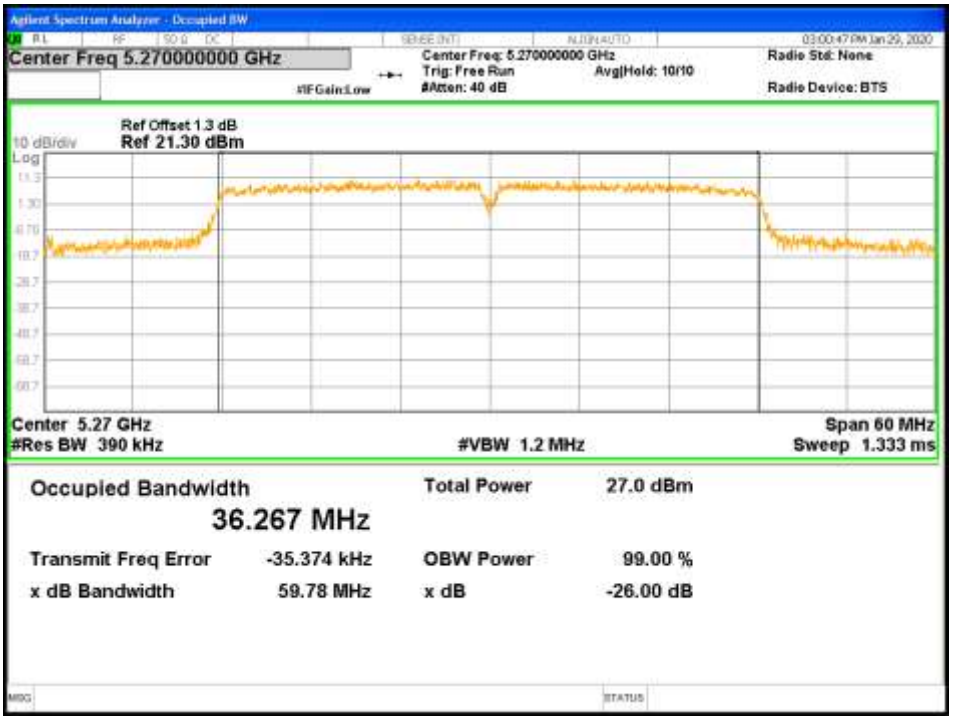


Figure 54: 99% & 26dB Occupied Bandwidth-5270MHz-802.11ac VHT40-TP21-CH0

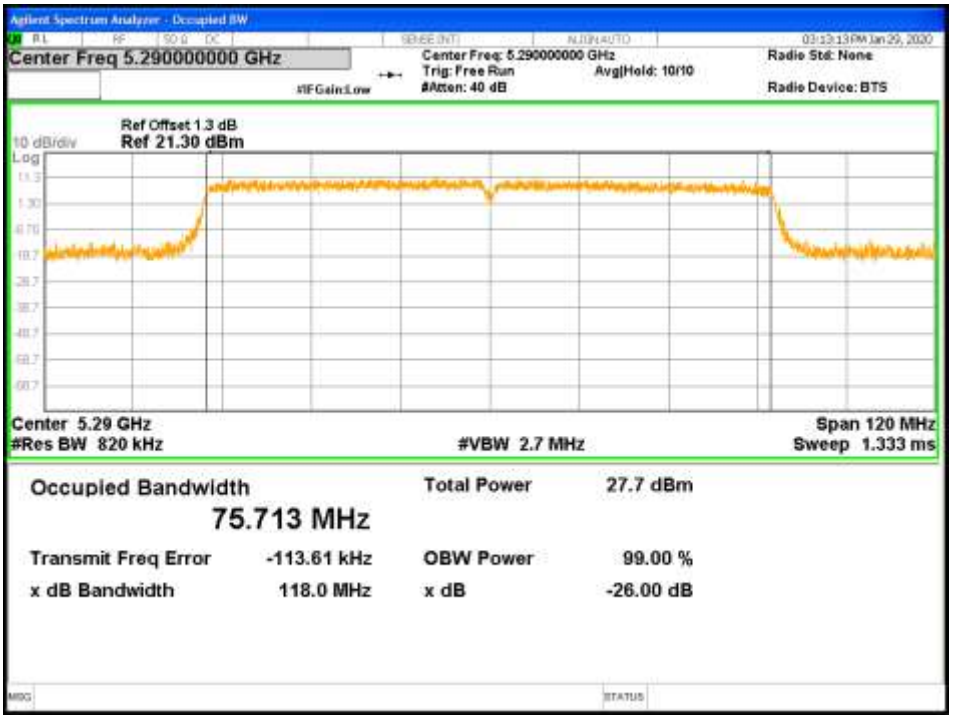


Figure 55: 99% & 26dB Occupied Bandwidth-5290MHz-802.11ac VHT80-TP21.5-CH0

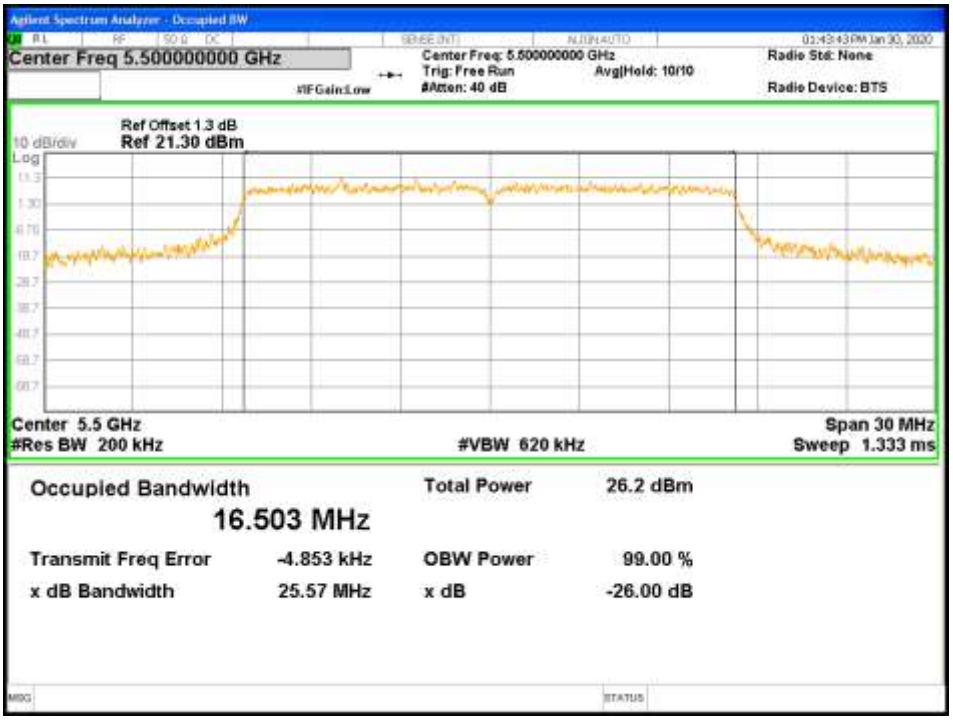


Figure 56: 99% & 26dB Occupied Bandwidth-5500MHz-802.11a-TP21-CH0

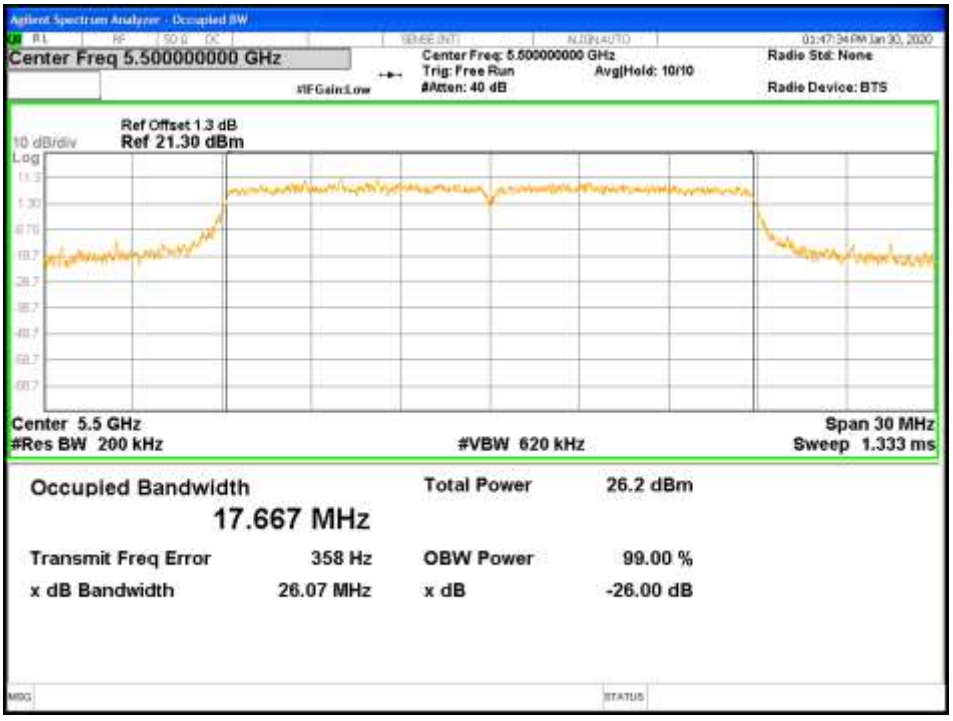


Figure 57: 99% & 26dB Occupied Bandwidth-5500MHz-802.11ac VHT20-TP21-CH0

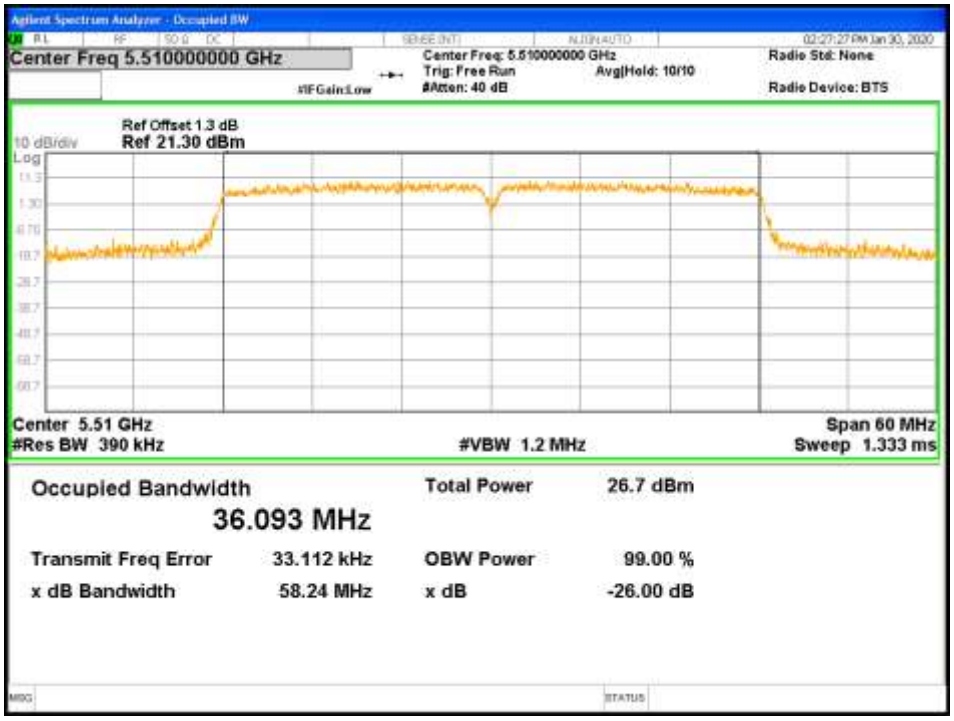


Figure 58: 99% & 26dB Occupied Bandwidth-5510MHz-802.11ac VHT40-TP21-CH0

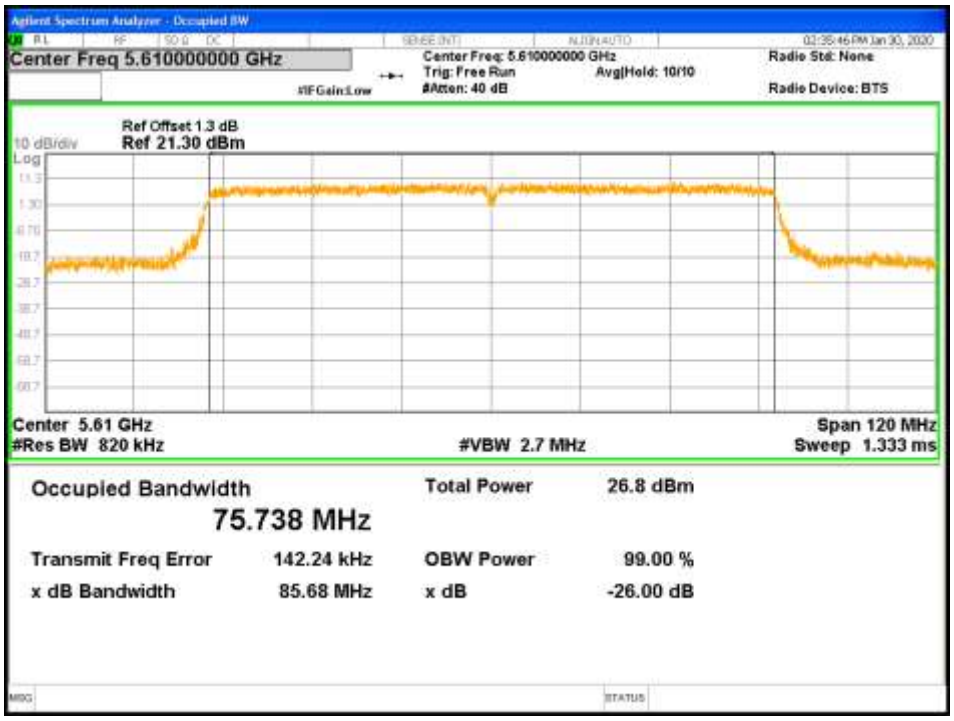


Figure 59: 99% & 26dB Occupied Bandwidth-5610MHz-802.11ac VHT80-TP21-CH0

4.3 Peak Power Spectral Density

According to the CFR47 Part 15.407 (a) and RSS 247 Sect. 6.2, the spectral power density output of the antenna port shall be as followed listed below during any time interval of continuous transmission.

The maximum power spectral density are:

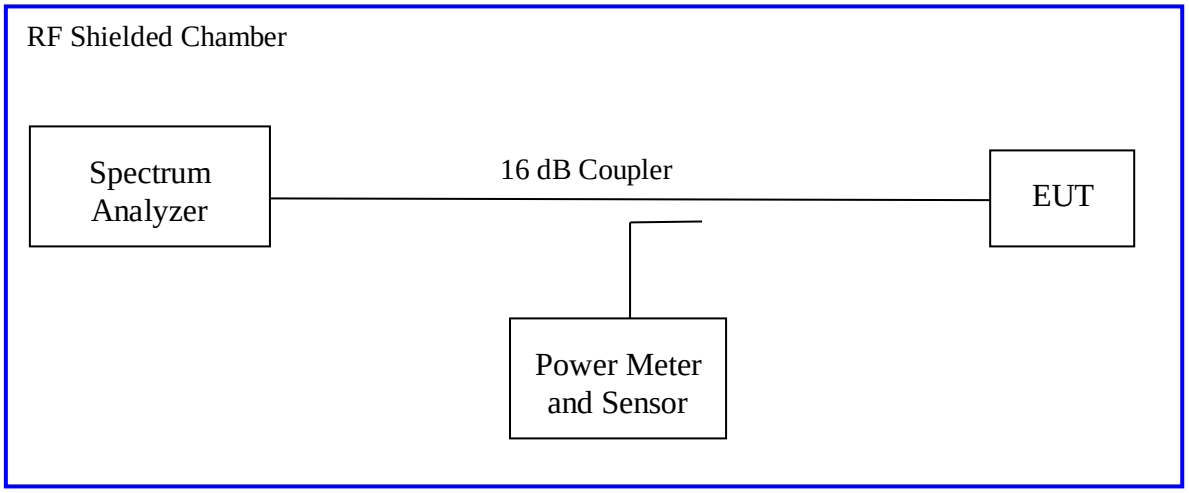
Part 15.407(a)(2) – Band 5250-5350 MHz and 5470-5725 MHz (conducted output power) : 11 dBm in any 1 MHz.

RSS 247 Section 6.2.2.1 – Band 5250-5350 MHz and Section 6.2.3.1 – Band 5740-5725 MHz (conducted output power): 11 dBm in any 1 MHz.

4.3.1 Test Method

The conducted method was used to measure the channel power output per ANSI C63.10-2013 Section 12.3.2.2. The measurement was performed with modulation per CFR47 Part 15.407 (a) and RSS 247 Sect. 6.2. The pre-evaluation was performed to find the worst modes. The worst findings were conducted on 2 or 3 channels in each operating frequency range of 5250 MHz to 5725 MHz. The worst sample result indicated below.

Test Setup:



4.3.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 8: Peak Power Spectral Density – Non Beamforming Mode

Test Date: February 10, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 3.96 dBi (5.25-5.35GHz) & 4.25 dBi (5.47-5.725GHz)
Operating Mode: Non Beamforming & Uncorrelated	**Signal State**: Modulated
Ambient Temp.: 23 °C	**Relative Humidity:**42%
Remark: Highlighted data, its plots are placed in the report.	

802.11a, 1x2

Freq. (MHz)	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Limit [dBm]	Margin [dB]	Note
5260	10.48	10.45	0.25	10.73	11.00	-0.27	FCC
5300	10.39	10.35	0.25	10.64	11.00	-0.36	FCC
5320	8.20	8.34	0.25	8.59	11.00	-2.41	FCC
5260	7.51	7.98	0.25	8.23	11.00	-2.77	RSS
5280	8.11	8.34	0.25	8.59	11.00	-2.41	RSS
5320	8.20	8.34	0.25	8.59	11.00	-2.41	RSS
5500	8.33	8.31	0.25	8.58	11.00	-2.42	FCC/RSS
5520	10.57	10.66	0.25	10.91	11.00	-0.09	FCC/RSS
5700	6.48	6.98	0.25	7.23	11.00	-3.77	FCC/RSS

Note: The highest output power observed at 802.11a, 6Mbps, 1 Data Stream, 94.4% duty cycle.

802.11ac VHT20, 1x2

Freq. (MHz)	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Limit [dBm]	Margin [dB]	Note
5260	10.27	10.18	0.25	10.52	11.00	-0.48	FCC
5300	10.00	10.44	0.25	10.69	11.00	-0.31	FCC
5320	8.15	8.42	0.25	8.67	11.00	-2.33	FCC
5260	7.40	7.72	0.25	7.97	11.00	-3.03	RSS
5280	7.75	8.13	0.25	8.38	11.00	-2.62	RSS
5320	8.15	8.42	0.25	8.67	11.00	-2.33	RSS
5500	7.80	7.86	0.25	8.11	11.00	-2.89	FCC/RSS
5520	10.43	10.32	0.25	10.68	11.00	-0.32	FCC/RSS
5700	6.09	6.49	0.25	6.74	11.00	-4.26	FCC/RSS

Note: The highest output power observed at VHT20, MCS0, 1 Data Stream, 94.7% duty cycle. VHT20 mode is worst case (covers HT20 mode).

802.11ac VHT40, 1x2							
Freq. (MHz)	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Limit [dBm]**	**Margin [dB]**	**Note**
5270	7.75	7.69	0.54	8.29	11.00	-2.71	FCC
5310	4.04	3.79	0.54	4.58	11.00	-6.42	FCC
5270	4.15	4.86	0.54	5.40	11.00	-5.60	RSS
5310	4.04	3.79	0.54	4.58	11.00	-6.42	RSS
5510	4.09	4.51	0.54	5.05	11.00	-5.95	FCC/RSS
5550	7.45	7.20	0.54	7.99	11.00	-3.01	FCC/RSS
5670	3.54	4.12	0.54	4.66	11.00	-6.34	FCC/RSS
Note: The highest output power observed at VHT40, MCS0, 1 Data Stream, 88.3% duty cycle. VHT40 mode is worst case (covers HT40 mode).							
802.11ac VHT80, 1x2							
Freq. (MHz)	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Limit [dBm]**	**Margin [dB]**	**Note**
5290	1.07	1.31	0.88	2.19	11.00	-8.81	FCC/RSS
5530	1.19	1.04	0.88	2.07	11.00	-8.93	FCC/RSS
5610	2.33	2.62	0.88	3.50	11.00	-7.50	FCC/RSS
Note: The highest output power observed at VHT80, MCS0, 1 Data Stream, 81.7% duty cycle.							

Table 9: Peak Power Spectral Density – Straddle Channels

Test Date: February 11, 2020			**Test By:** Kerwinn Corpuz			
Test Method: Conducted Measurements			**Power Setting:** See test plan			
Antenna Type: Flex PCB			**Max. Antenna Gain:** 4.25 dBi (U-NII-2C) & 3.97 dBi (U-NII-3)			
Operating Mode: Non Beamforming & Uncorrelated			**Signal State**: Modulated			
Ambient Temp.: 23 °C			**Relative Humidity:** 44%			
Remark: 1. Highlighted data, its plots are placed in the report. 2. U-NII-3 Band: CF (RBW) = 10 log (.5 MHz / 1 MHz) = -3.01 dB.						
802.11a (5720MHz), 1x2						
Operating Band	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Limit [dBm]**	**Margin [dB]**
U-NII-2C	10.26	10.70	0.25	10.95	11.00	-0.05
U-NII-3	10.62	10.18	-2.76	7.86	30.00	-22.14
Note: 1. The highest output power observed at 802.11a, 6Mbps, 1 Data Stream, 94.4% duty cycle. 2. For 802.11a PPSD plot, refer to Section 4.1.2, Figure 27, page 36. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						
802.11ac VHT20 (5720MHz), 1x2						
U-NII-2C	9.72	10.43	0.24	10.67	11.00	-0.33
U-NII-3	9.62	9.91	-2.77	7.14	30.00	-22.86
Note: 1. The highest output power observed at VHT20, MCS0, 1 Data Stream, 94.7% duty cycle. 2. For VHT20 PPSD plot, refer to Section 4.1.2, Figure 28, page 36. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						
802.11ac VHT40 (5710MHz), 1x2						
U-NII-2C	7.68	7.49	0.54	8.22	11.00	-2.78
U-NII-3	5.69	5.89	-2.47	3.42	30.00	-26.59
Note: 1. The highest output power observed at VHT40, MCS0, 1 Data Stream, 88.3% duty cycle. 2. For VHT40 PPSD plot, refer to Section 4.1.2, Figure 29, page 37. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						
802.11ac VHT80 (5690MHz), 1x2						
U-NII-2C	3.68	3.91	0.88	4.79	11.00	-6.21
U-NII-3	2.79	3.03	-2.13	0.90	30.00	-29.10
Note: 1. The highest output power observed at VHT80, MCS0, 1 Data Stream, 81.7% duty cycle. 2. For VHT80 PPSD plot, refer to Section 4.1.2, Figure 30, page 37. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						

Table 10: Peak Power Spectral Density – Beamforming Mode

Test Date: February 10, 2020	**Test By:** Kerwinn Corpuz
Test Method: Conducted Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Max. Antenna Gain:** 6.97 dBi (5.25-5.35GHz) & 7.26 dBi (5.47-5.725GHz)
Operating Mode: Beamforming & Correlated	**Signal State**: Modulated
Ambient Temp.: 23 °C	**Relative Humidity:**42%
Remark: Highlighted data, its plots are placed in the report.	

802.11ac VHT20, 2x2

Freq. (MHz)	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Limit [dBm]	Margin [dB]	Note
5260	6.25	6.32	0.24	9.53	10.03	-0.50	FCC
5300	6.03	6.52	0.24	9.53	10.03	-0.50	FCC
5320	5.72	6.04	0.24	9.13	10.03	-0.90	FCC
5260	1.78	2.38	0.24	5.33	10.03	-4.70	RSS
5300	1.72	2.34	0.24	5.29	10.03	-4.74	RSS
5320	1.90	2.23	0.24	5.32	10.03	-4.71	RSS
5500	6.16	6.57	0.24	9.61	9.74	-0.13	FCC/RSS
5520	6.18	6.46	0.24	9.57	9.74	-0.17	FCC/RSS
5700	5.98	6.36	0.24	9.42	9.74	-0.32	FCC/RSS

Note: The highest output power observed at VHT20, MCS0, 2 Data Streams, 94.7% duty cycle. VHT20 mode is worst case (covers HT20 mode).

802.11ac VHT40, 2x2

Freq. (MHz)	Ch0 [dBm]	Ch1 [dBm]	CF [dB]	Max RMS Power [dBm]	Limit [dBm]	Margin [dB]	Note
5270	4.88	5.44	0.54	8.71	10.03	-1.32	FCC
5310	2.59	3.04	0.54	6.37	10.03	-3.66	FCC
5270	-1.48	-1.25	0.54	2.19	10.03	-7.84	RSS
5310	-1.25	-0.66	0.54	2.60	10.03	-7.43	RSS
5510	2.99	3.51	0.54	6.81	9.74	-2.93	FCC/RSS
5550	4.53	4.89	0.54	8.26	9.74	-1.48	FCC/RSS
5670	3.57	3.84	0.54	7.25	9.74	-2.49	FCC/RSS

Note: The highest output power observed at VHT40, MCS0, 2 Data Streams, 88.3% duty cycle. VHT40 mode is worst case (covers HT40 mode).

802.11ac VHT80, 2x2							
Freq. (MHz)	**Ch0 [dBm]**	**Ch1 [dBm]**	**CF [dB]**	**Max RMS Power [dBm]**	**Limit [dBm]**	**Margin [dB]**	**Note**
5290	-0.41	-0.45	0.88	3.46	10.03	-6.57	FCC
5290	-4.82	-4.76	0.88	-0.90	10.03	-10.93	RSS
5530	-0.62	-0.28	0.88	3.44	9.74	-6.30	FCC/RSS
5610	1.01	1.08	0.88	4.94	9.74	-4.80	FCC/RSS
Note: The highest output power observed at VHT80, MCS0, 2 Data Streams, 81.7% duty cycle.							

Table 11: Peak Power Spectral Density – Straddle Channels

Test Date: February 12, 2020			**Test By:** Kerwinn Corpuz			
Test Method: Conducted Measurements			**Power Setting:** See test plan			
Antenna Type: Flex PCB			**Max. Antenna Gain:** 7.26 dBi (U-NII-2C) & 6.98 dBi (U-NII-3)			
Operating Mode: Beamforming & Correlated			**Signal State**: Modulated			
Ambient Temp.: 23 °C			**Relative Humidity:**40%			
Remark: 1. Highlighted data, its plots are placed in the report. 2. U-NII-3 Band: CF (RBW) = 10 log (.5 MHz / 1 MHz) = -3.01 dB.						
802.11ac VHT20 (5720MHz), 2x2						
U-NII-2C	5.53	5.92	0.24	8.98	9.74	-0.76
U-NII-3	5.33	5.57	-2.77	8.70	29.02	-20.32
Note: 1. The highest output power observed at VHT20, MCS0, 2 Data Streams, 94.7% duty cycle. 2. For VHT20 PPSD plot, refer to Section 4.1.2, Figure 49, page 47. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						
802.11ac VHT40 (5710MHz), 2x2						
U-NII-2C	4.91	4.68	0.54	8.35	9.74	-1.39
U-NII-3	3.57	3.20	-2.47	6.93	29.02	-22.09
Note: 1. The highest output power observed at VHT40, MCS0, 2 Data Streams, 88.3% duty cycle. 2. For VHT40 PPSD plot, refer to Section 4.1.2, Figure 50, page 47. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						
802.11ac VHT80 (5690MHz), 2x2						
U-NII-2C	1.43	1.31	0.88	5.26	9.74	-4.48
U-NII-3	0.63	0.66	-2.13	4.54	29.02	-24.48
Note: 1. The highest output power observed at VHT80, MCS0, 2 Data Streams, 81.7% duty cycle. 2. For VHT80 PPSD plot, refer to Section 4.1.2, Figure 51, page 48. 3. Marker 7 is U-NII-2C PPSD measurement and Marker 1 is U-NII-3 PPSD measurement in the plot.						

Figure 60: PPSD-5260MHz-802.11a-6Mbps-TP21-CH0-1x2 (FCC)

Figure 61: PPSD-5320MHz-802.11a-6Mbps-TP19-CH1-1x2 (RSS)

Figure 62: PPSD-5520MHz-802.11a-6Mbps-TP21-CH1-1x2

Figure 63: PPSD-5260MHz-802.11ac VHT20-MCS0-TP21-CH0-1x2 (FCC)

Figure 64: PPSD-5320MHz-802.11ac VHT20-MCS0-TP19-CH1-1x2 (RSS)

Figure 65: PPSD-5520MHz-802.11ac VHT20-MCS0-TP21-CH0-1x2

Figure 66: PPSD-5270MHz-802.11ac VHT40-MCS0-TP21-CH0-1x2 (FCC)

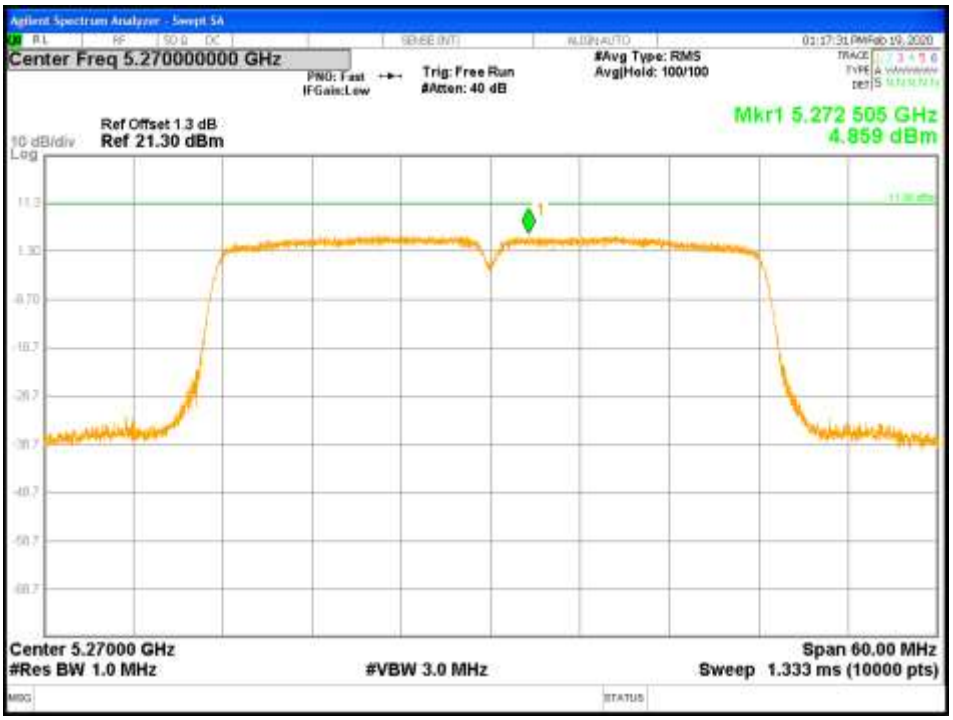


Figure 67: PPSD-5270MHz-VHT40-MCS0-TP18-CH1-1x2 (RSS)

Figure 68: PPSD-5550MHz-802.11ac VHT40-MCS0-TP21-CH0-1x2

Figure 69: PPSD-5290MHz-802.11ac VHT80-MCS0-TP18.5-CH1-1x2 (FCC & RSS)

Figure 70: PPSD-5610MHz-802.11ac VHT80-MCS0-TP20.5-CH1-1x2

Figure 71: PPSD-5300MHz-802.11a-6Mbps-TP17-CH1-2x2 (FCC)

Figure 72: PPSD-5260MHz-802.11ac VHT20-MCS0-TP13-CH1-2x2 (RSS)

Figure 73: PPSD-5500MHz-802.11ac VHT20-MCS0-TP17-CH1-2x2

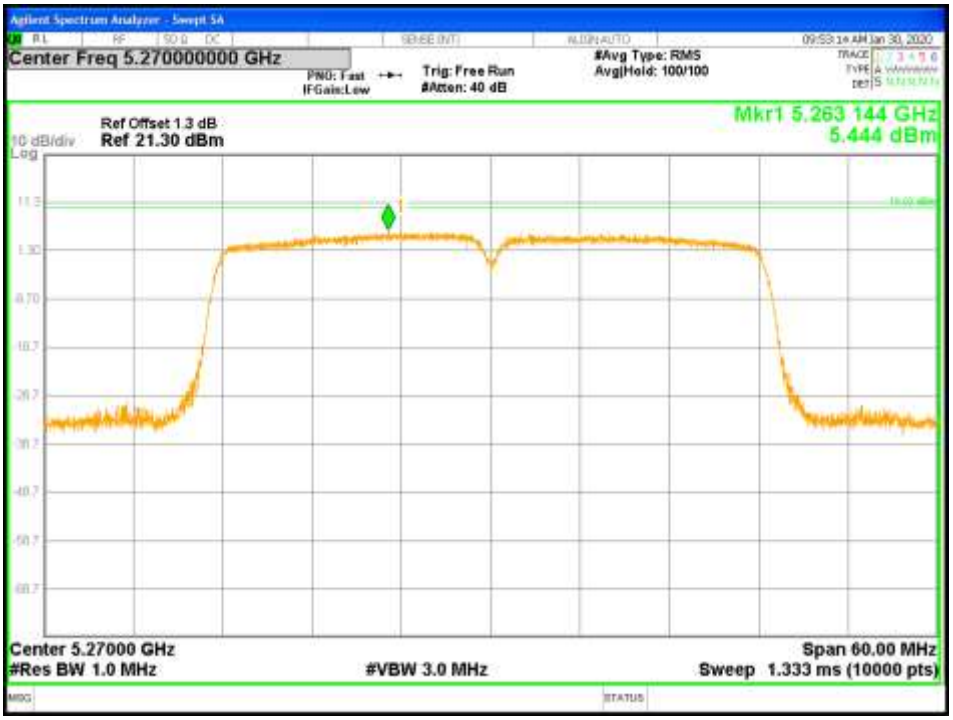


Figure 74: PPSD-5270MHz-802.11ac VHT40-MCS0-TP18.5-CH1-2x2 (FCC)

Figure 75: PPSD-5310MHz-802.11ac VHT40-MCS0-TP13-CH1-2x2 (RSS)

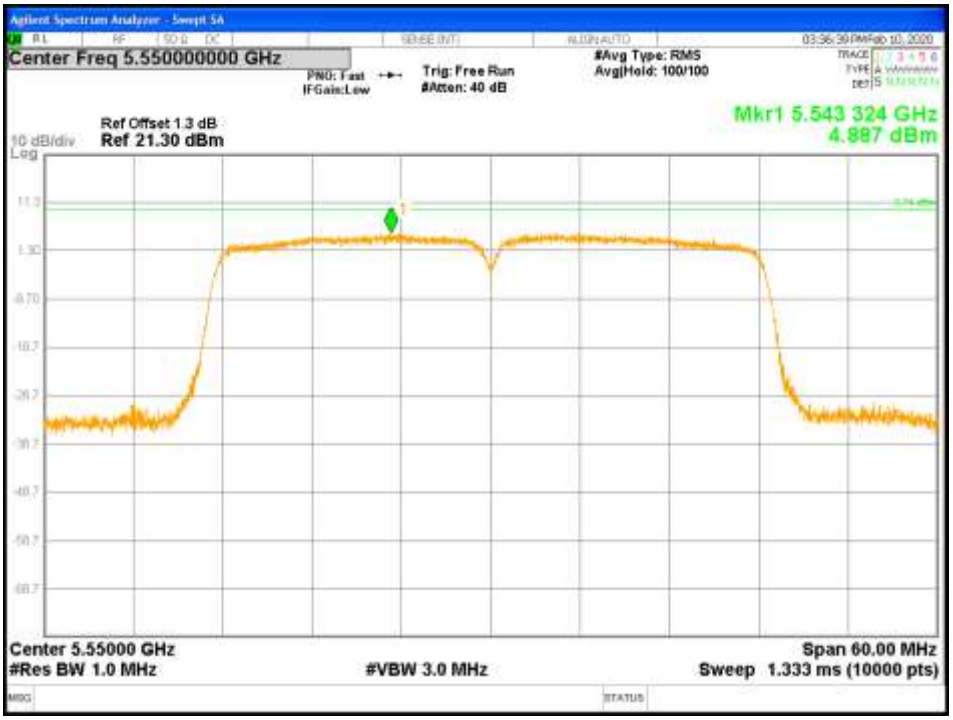


Figure 76: PPSD-5550MHz-802.11ac VHT40-MCS0-TP18.5-CH1-2x2

Figure 77: PPSD-5290MHz-802.11ac VHT80-MCS0-TP17-CH0-2x2 (FCC)

Figure 78: PPSD-5290MHz-802.11ac VHT80-MCS0-TP13-CH1-2x2 (RSS)

Figure 79: PPSD-5610MHz-802.11ac VHT80-MCS0-TP19-CH1-2x2

4.4 Transmitter Spurious Emissions

Transmitter spurious emissions are emissions outside the frequency range of the equipment when the equipment is in transmit mode; per requirement of CFR47 15.205, 15.209, 15.407(b), RSS 247 Sect. 6.2.2.2 and Sect. 6.2.3.2, RSS GEN Sect.8.9 and 8.10

4.4.1 Test Methodology

4.4.1.1 Preliminary Test

A test program that controls instrumentation and data logging was used to automate the preliminary RF emission test procedure. The frequency range of interest was divided into sub-ranges to yield a frequency resolution of approximately 120 kHz and provide a reading at each frequency for no more than 12° of turntable rotation. For each frequency sub-range the turntable was rotated 360° while peak emission data was recorded and plotted over the frequency range of interest in horizontal and vertical antenna polarization's.

Preliminary emission profile testing was performed inside the anechoic chamber. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm (<1 GHz) and 150cm (>1 GHz) above the floor. The EUT was positioned as shown in the setup photographs. The receiving antenna was placed at a distance of 3m. Measurement equipment was located outside of the chamber. A video camera was placed inside the chamber to view the EUT.

Pres-scans were performed to determine the worst, data rate/chains for 802.11a, 802.11n (HT20 and HT40), 802.11ac (VHT20, VHT40 and VHT80).

4.4.1.2 Final Test

For each frequency measured, the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation. The six highest emissions relative to the limit were measured unless such emissions were more than 20 dB below the limit. If less than six emissions are within 20 dB of the limit, than the noise level of the receiver is measured at frequencies where emissions are expected. Multiples of all oscillator and microprocessor frequencies were also checked.

Final testing was performed on an NSA compliant test site. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm (<1 GHz) and 150cm (>1 GHz) above the ground plane. The placement of EUT and cables were the same as for preliminary testing and is shown in the setup photographs.

Final results are:

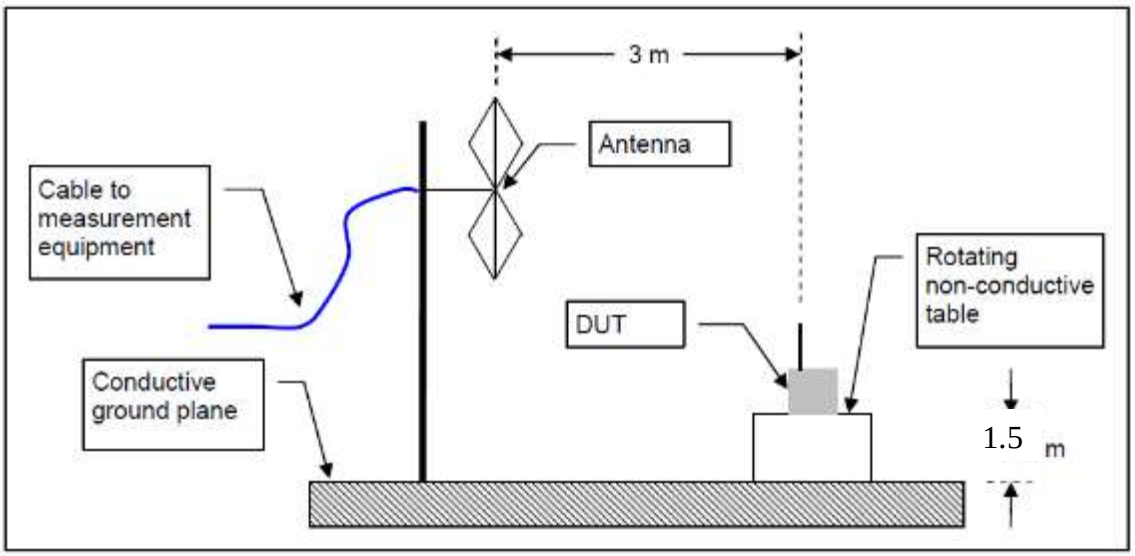
1. 802.11a at 6Mbps with 1 Chain – Nonbeamforming (covering HT20 & VHT20)
2. 802.11ac VHT40 at MCS0 with 1 Chain – Nonbeamforming (covering HT40)
3. 802.11ac VHT80 at MCS0 with 1 Chain – Nonbeamforming
4. 802.11a at 6Mbps with 2 Chains – Nonbeamforming (covering HT20 & VHT20)
5. 802.11ac VHT40 at MCS0 with 2 Chains – Beamforming (covering HT40)
6. 802.11ac VHT80 at MCS0 with 2 Chains – Beamforming

Items 4 – 6 are worst case and documented in the report.

4.4.1.3 Deviations

None.

Test Setup:



4.4.2 Transmitter Spurious Emission Limit

The spurious emissions of the transmitter shall not exceed the values in CFR47 Part 15.205, 15.209, RSS 247 Sect. 6, RSS GEN Sect. 8.9 and 8.10

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

According to CFR47 15.407 (b) and RSS 247 Sect. 6, all harmonics and spurious emissions which are outside the 5150 MHz - 5250 MHz, 5250 MHz – 5350 MHz, or 5470 MHz – 5725 MHz shall not exceed -27 dBm/MHz. This is equivalent to 68.2 dBuV/m at 3 meter distance.

4.4.3 Results

The final measurement data was taken under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and test plan.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 12: Transmit Spurious Emission at Band-Edge Requirements

Test Date: February 3-4, 2020	**Test By:** Kerwinn Corpuz
Test Method: Radiated Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Signal State**: Modulated
Directional Antenna Gain: + 6.97 dBi	**Max Antenna Gain:** + 3.96 dBi
Ambient Temp.: 23-23 °C	**Relative Humidity:**39-42%

Band-Edge Results (5250-5350 MHz)

Freq. (MHz)	Level (dBuV/m)	Pol. (H/V)	Limit (dBuV/m)	Margin (dB)	Det.	Table Deg.	Tower (cm)	Note
5447.1	67.72	V	74.00	-6.28	Pk	139	270	Fig 80: 11a-6Mbps-5320MHz-TP17-2x2
5449.2	53.06	V	54.00	-0.94	Ave	139	270	Fig 81: 11a-6Mbps-5320MHz-TP17-2x2
5412.7	67.38	H	74.00	-6.62	Pk	190	248	Fig 82: 11a-6Mbps-5320MHz-TP17-2x2
5455.4	53.13	H	54.00	-0.87	Ave	190	248	Fig 83: 11a-6Mbps-5320MHz-TP17-2x2
5356.4	71.26	V	74.00	-2.74	Pk	138	269	Fig 84: VHT40-MCS0-5310MHz-TP16.5-2x2
5352.2	53.49	V	54.00	-0.51	Ave	138	269	Fig 85: VHT40-MCS0-5310MHz-TP16.5-2x2
5356.1	70.12	H	74.00	-3.88	Pk	194	233	Fig 86: VHT40-MCS0-5310MHz-TP16.5-2x2
5455.2	53.15	H	54.00	-0.85	Ave	194	233	Fig 87: VHT40-MCS0-5310MHz-TP16.5-2x2
5381.7	68.14	V	74.00	-5.86	Pk	133	258	Fig 88: VHT80-MCS0-5290MHz-TP17-2x2
5357.5	53.86	V	54.00	-0.14	Ave	133	258	Fig 89: VHT80-MCS0-5290MHz-TP17-2x2
5360.1	69.81	H	74.00	-4.19	Pk	195	236	Fig 90: VHT80-MCS0-5290MHz-TP17-2x2
5362.6	53.86	H	54.00	-0.14	Ave	195	236	Fig 91: VHT80-MCS0-5290MHz-TP17-2x2

Note: 1. Band-edge frequencies were taken at 5350 MHz since 5150-5250 MHz band is not a restricted band.
2. All the band-edge measurements met the restricted band requirements of CFR47 15.205.
3. 11a, VHT40 and VHT80 found as worst case and documented in the report. Refer to Section 4.4.1.2 of the report for detailed test plan.

Test Date: February 3-4, 2020	**Test By:** Kerwinn Corpuz
Test Method: Radiated Measurements	**Power Setting:** See test plan
Antenna Type: Flex PCB	**Signal State**: Modulated
Directional Antenna Gain: + 6.97 dBi	**Max Antenna Gain:** + 3.96 dBi
Ambient Temp.: 23-23 °C	**Relative Humidity:**39-42%

Band-Edge Results (5470-5850 MHz)

Freq. (MHz)	Level (dBuV/m)	Pol. (H/V)	Limit (dBuV/m)	Margin (dB)	Det.	Table Deg.	Tower (cm)	Note
5458.7	68.30	V	74.00	-5.70	Pk	247	215	Fig 92: 11a-6Mbps-5500MHz-TP17-2x2
5468.8	53.51	V	54.00	-0.49	Ave	247	215	Fig 93: 11a-6Mbps-5500MHz-TP17-2x2
5456.8	67.56	H	74.00	-6.44	Pk	190	204	Fig 94: 11a-6Mbps-5500MHz-TP17-2x2
5470.0	53.33	H	54.00	-0.67	Ave	190	204	Fig 95: 11a-6Mbps-5500MHz-TP17-2x2
5464.5	70.15	V	74.00	-3.85	Pk	248	208	Fig 96: VHT40-MCS0-5510MHz-TP16.5-2x2
5464.5	53.97	V	54.00	-0.03	Ave	248	208	Fig 97: VHT40-MCS0-5510MHz-TP16.5-2x2
5464.6	69.86	H	74.00	-4.14	Pk	193	226	Fig 98: VHT40-MCS0-5510MHz-TP16.5-2x2
5463.3	53.89	H	54.00	-0.11	Ave	193	226	Fig 99: VHT40-MCS0-5510MHz-TP16.5-2x2
5458.9	68.11	V	74.00	-5.89	Pk	265	205	Fig 100: VHT80-MCS0-5530MHz-TP17-2x2
5462.5	53.97	V	54.00	-0.03	Ave	265	205	Fig 101: VHT80-MCS0-5530MHz-TP17-2x2
5458.9	68.80	H	74.00	-5.20	Pk	195	226	Fig 102: VHT80-MCS0-5530MHz-TP17-2x2
5461.0	53.90	H	54.00	-0.10	Ave	195	226	Fig 103: VHT80-MCS0-5530MHz-TP17-2x2
5931.0	67.45	V	68.23	-0.78	PK	73	198	Fig 104: 11a-6Mbps-5720MHz-TP17-2x2
5929.8	67.58	H	68.23	-0.65	PK	163	167	Fig 105: 11a-6Mbps-5720MHz-TP17-2x2
5936.5	68.16	V	68.23	-0.07	PK	77	198	Fig 106: VHT40-MCS0-5710MHz-TP18.5-2x2
5937.2	68.19	H	68.23	-0.04	PK	197	168	Fig 107: VHT40-MCS0-5710MHz-TP18.5-2x2
5938.6	67.77	V	68.23	-0.46	PK	73	198	Fig 108: VHT80-MCS0-5690MHz-TP19-2x2
5926.6	67.41	H	68.23	-0.82	PK	190	162	Fig 109: VHT80-MCS0-5690MHz-TP19-2x2

Note: 1. Band-edge frequencies were taken at 5470 MHz (restricted band) and 5850 MHz for Straddle Channels (non-restricted band).
2. All the band-edge measurements met the restricted band requirements of CFR47 15.205.
3. 11a, VHT40 and VHT80 found as worst case and documented in the report. Refer to Section 4.4.1.2 of the report for detailed test plan.

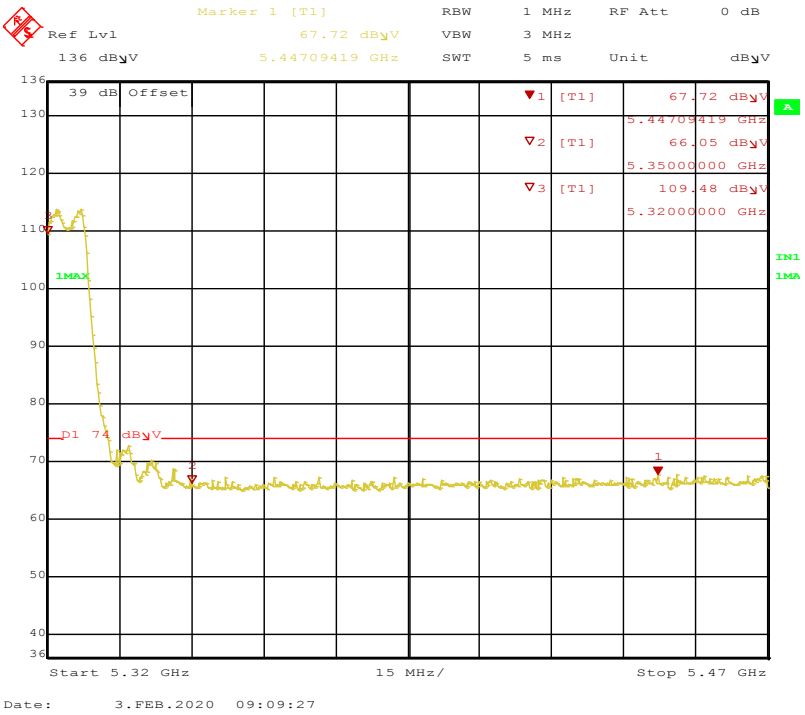


Figure 80: 802.11a-6Mbps-5320MHz-TP17-Peak-Vertical-2x2

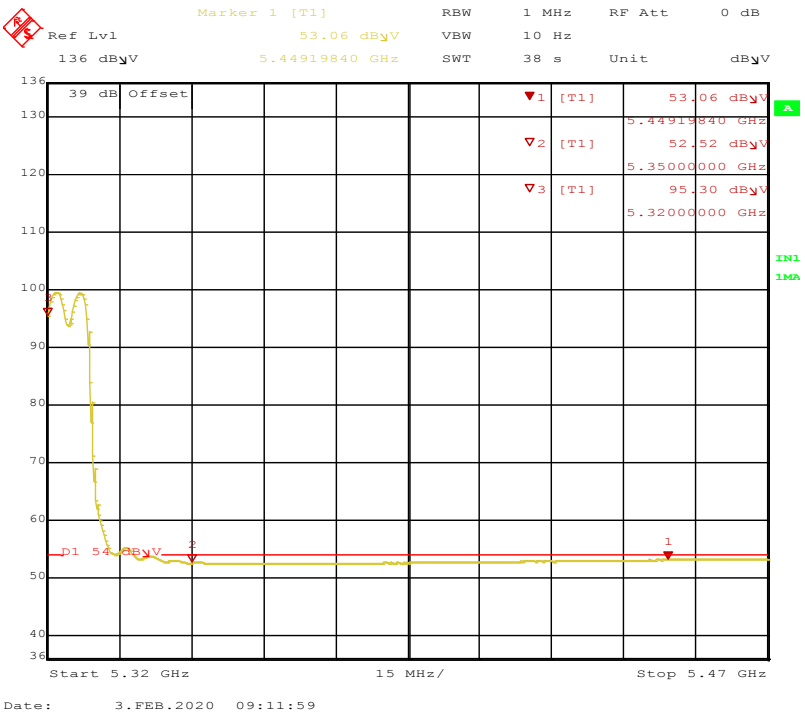


Figure 81: 802.11a-6Mbps-5320MHz-TP17-Average-Vertical-2x2

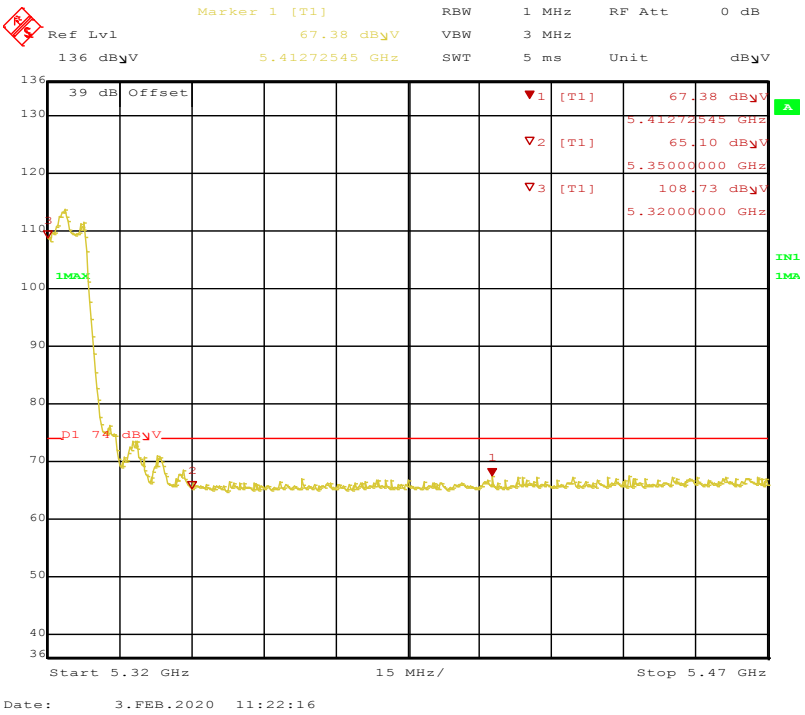


Figure 82: 802.11a-6Mbps-5320MHz-TP17-Peak-Horizontal-2x2

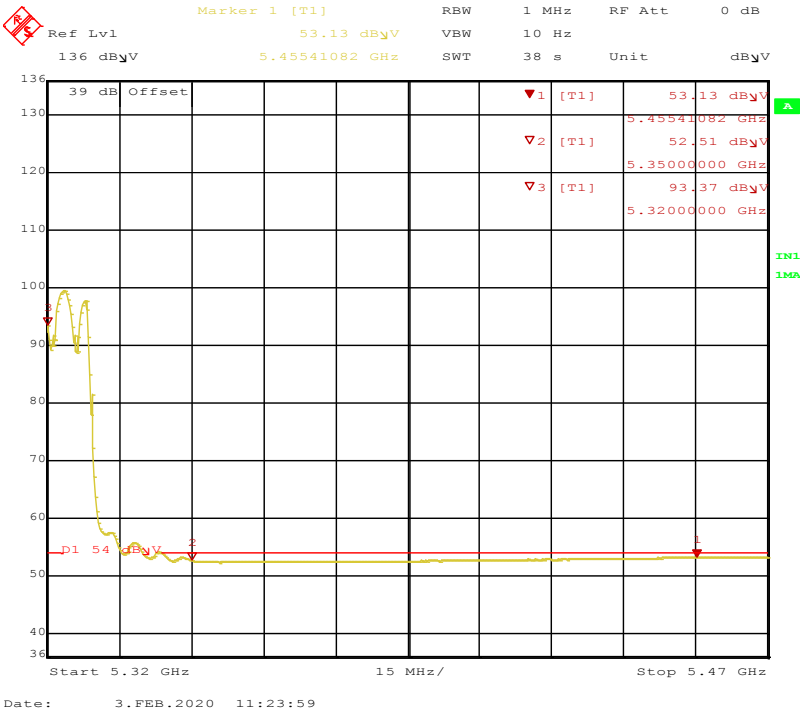


Figure 83: 802.11a-6Mbps-5320MHz-TP17-Average-Horizontal-2x2

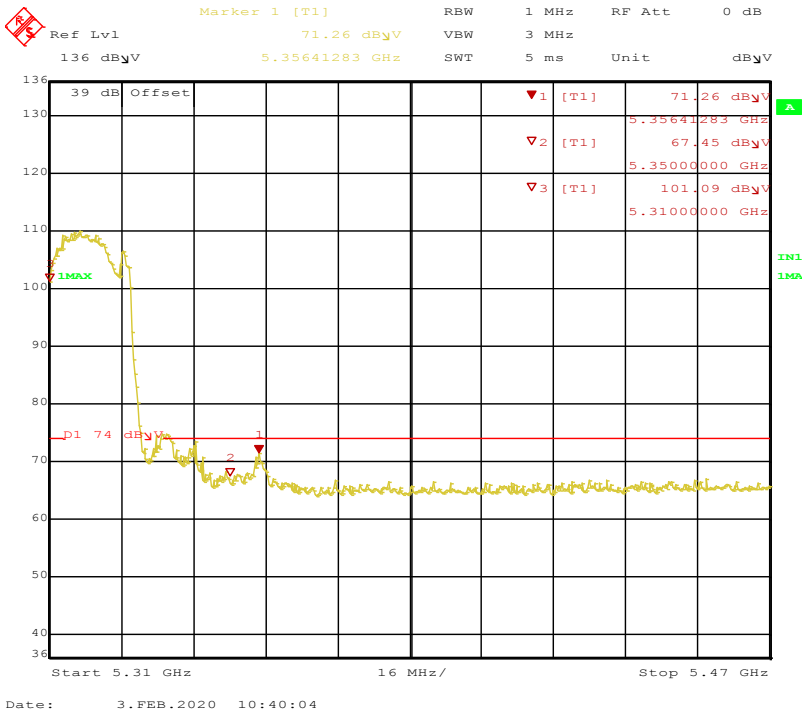


Figure 84: 802.11ac VHT40-MCS0-TP16.5-5310MHz-Peak-Vertical-2x2

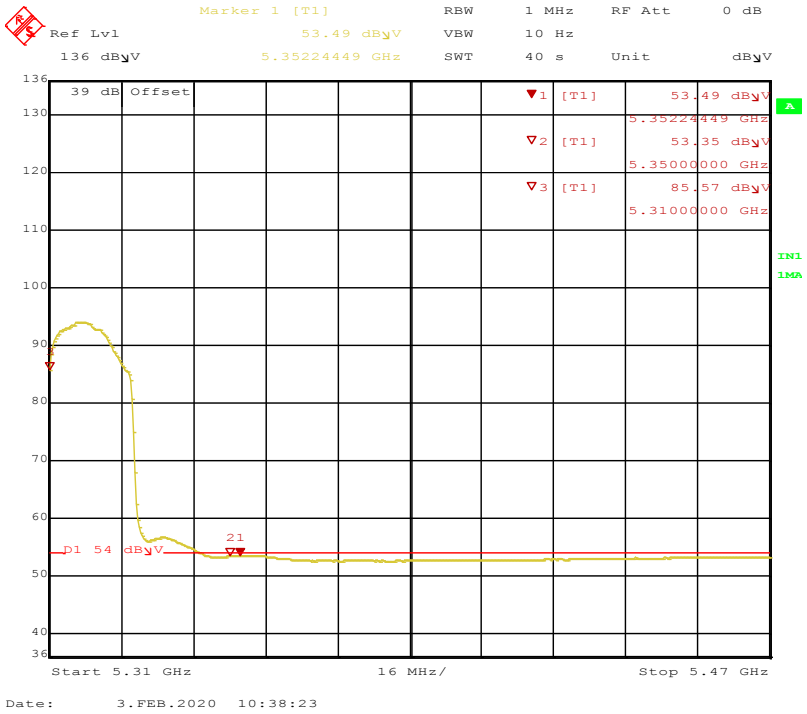


Figure 85: 802.11ac VHT40-MCS0-TP16.5-5310MHz-Average-Vertical-2x2

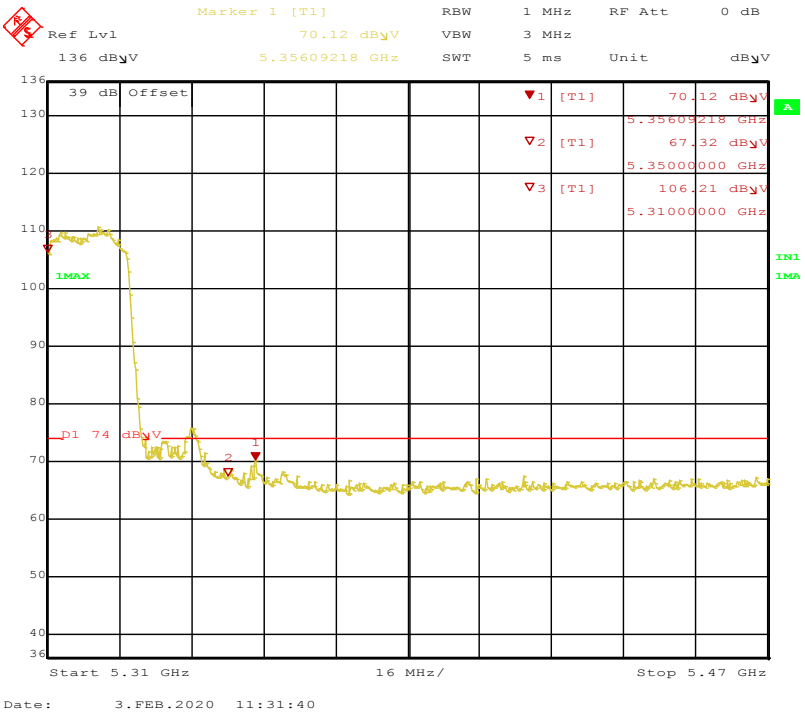


Figure 86: 802.11ac VHT40-MCS0-TP16.5-5310MHz-Peak-Horizontal-2x2

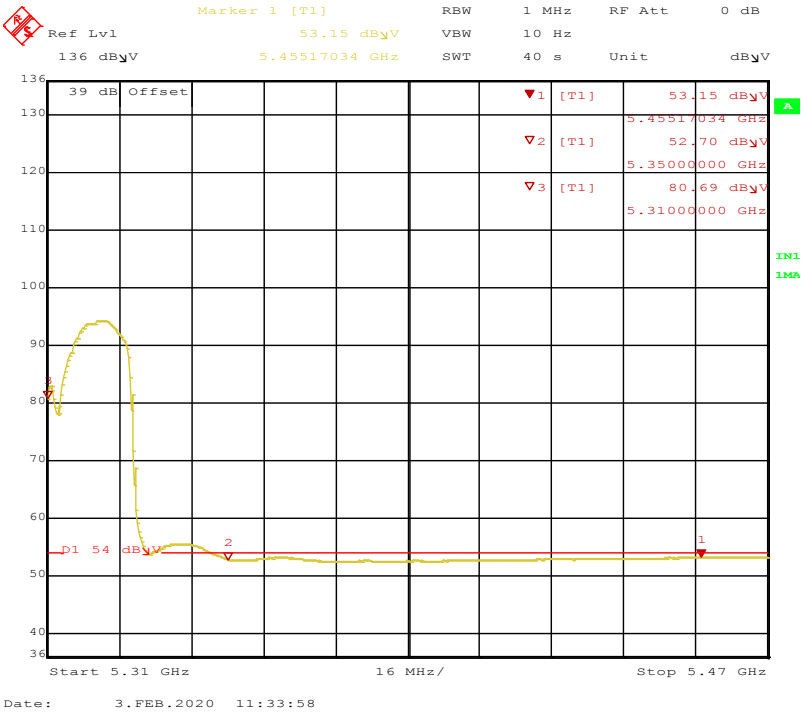


Figure 87: 802.11ac VHT40-MCS0-TP16.5-5310MHz-Average-Horizontal-2x2

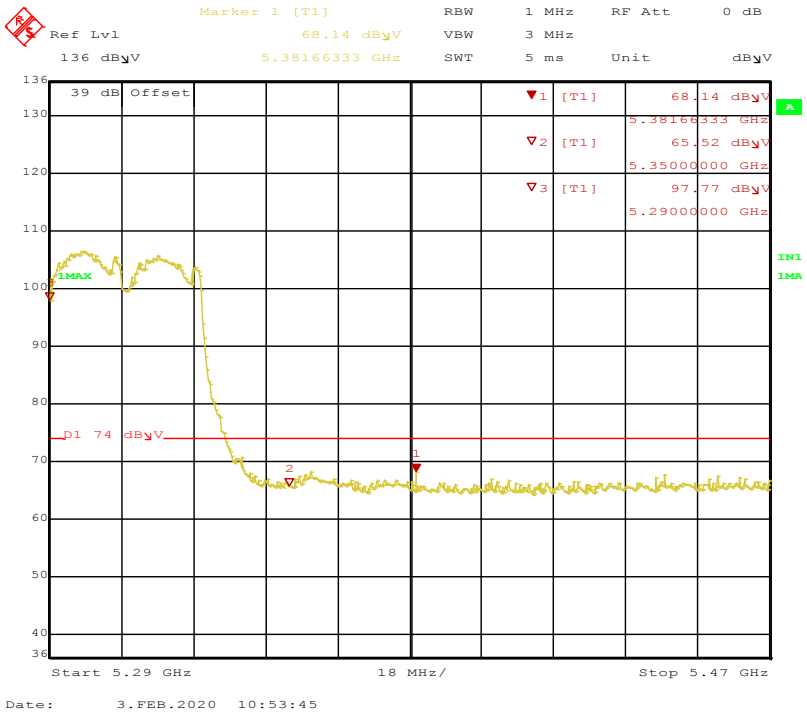


Figure 88: 802.11ac VHT80-MCS0-TP17-5290MHz-Peak-Vertical-2x2

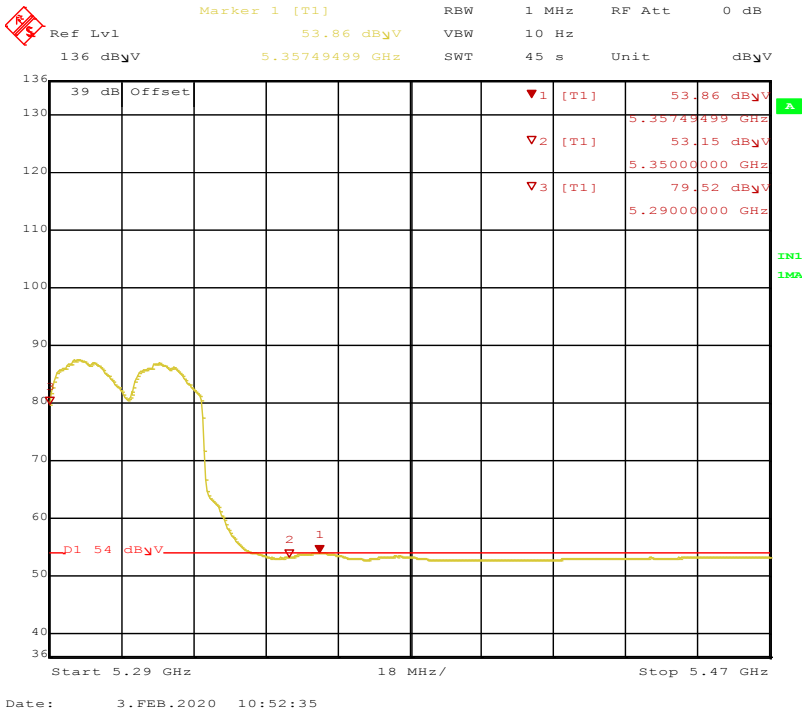


Figure 89: 802.11ac VHT80-MCS0-TP17-5290MHz-Average-Vertical-2x2

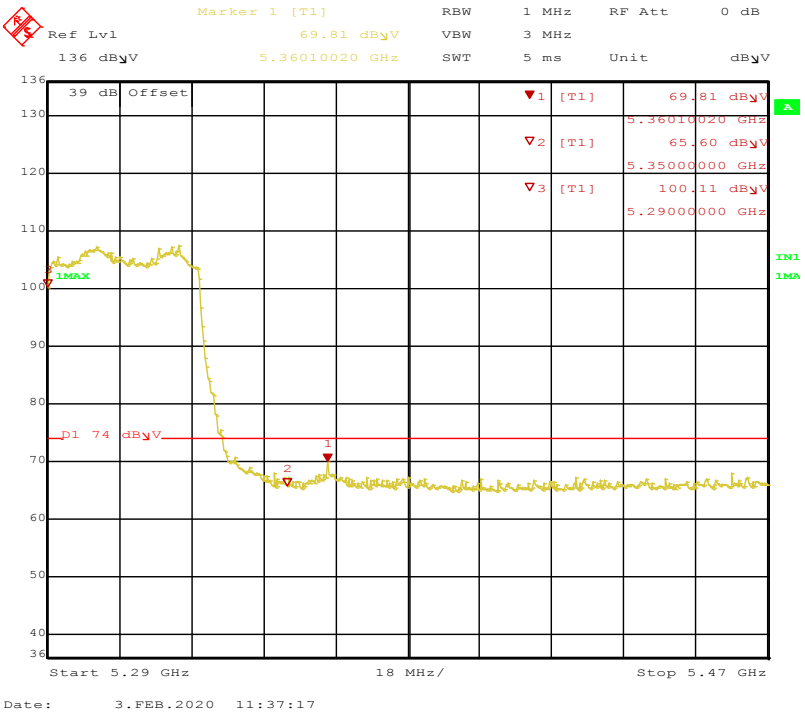


Figure 90: 802.11ac VHT80-MCS0-TP17-5290MHz-Peak-Horizontal-2x2

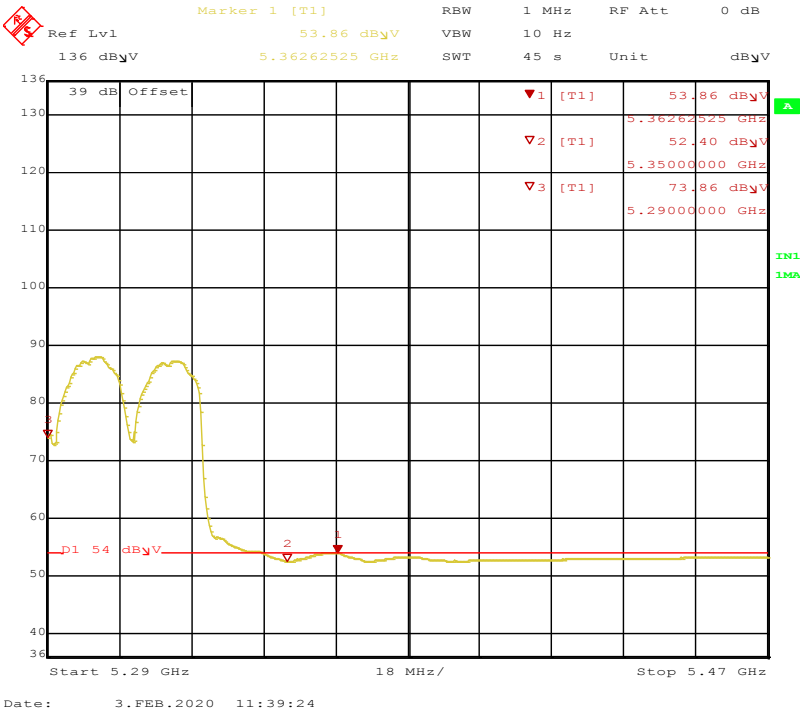


Figure 91: 802.11ac VHT80-MCS0-TP17-5290MHz-Average-Horizontal-2x2

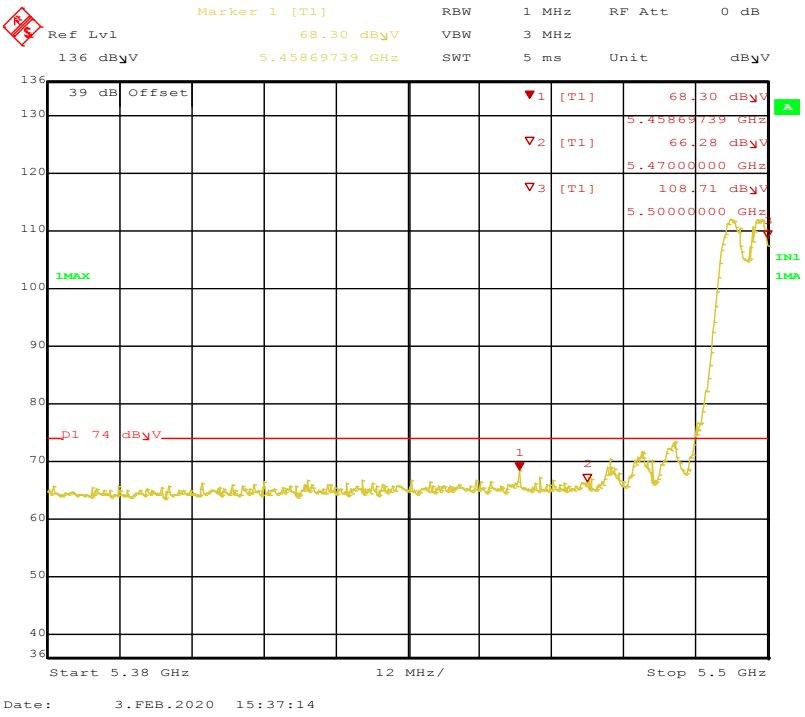


Figure 92: 802.11a-6Mbps-TP17-5500MHz-Peak-Vertical-2x2

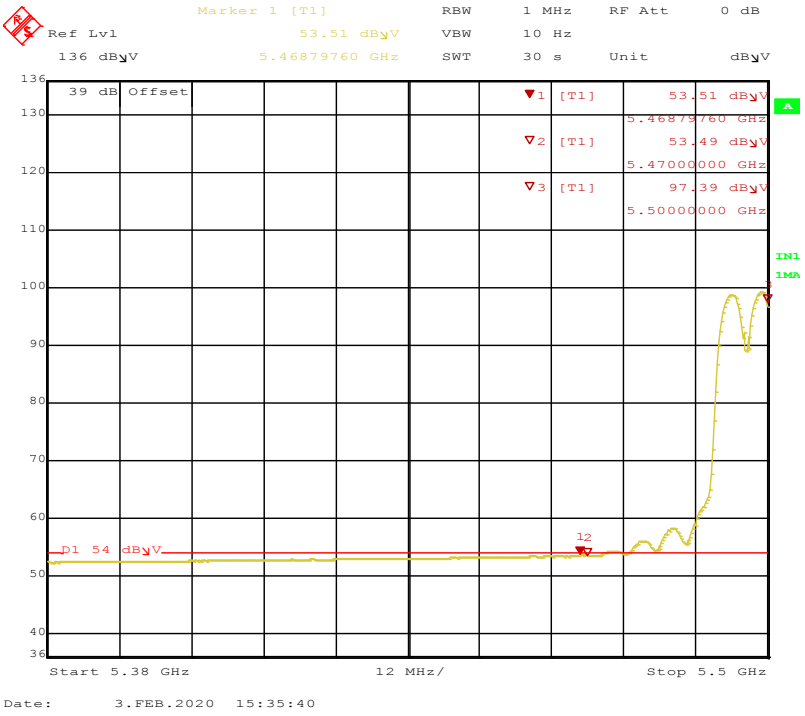


Figure 93: 802.11a-6Mbps-TP17-5500MHz-Average-Vertical-2x2

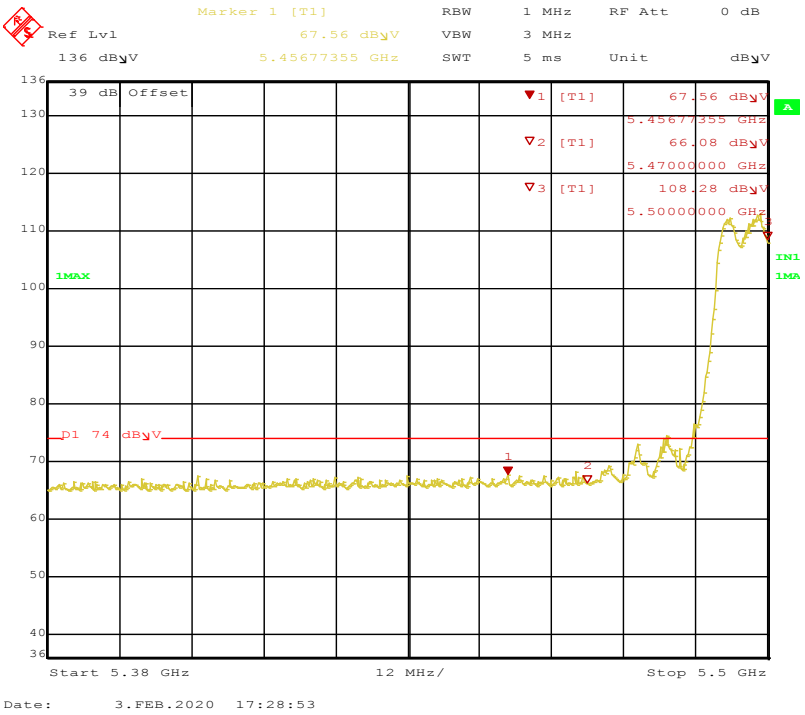


Figure 94: 802.11a-6Mbps-TP17-5500MHz-Peak-Horizontal-2x2

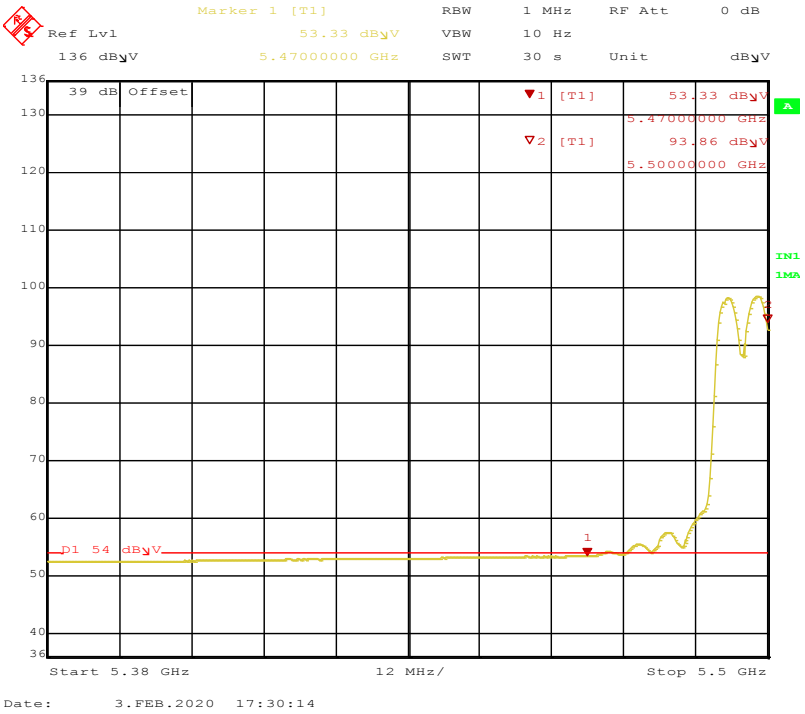


Figure 95: 802.11a-6Mbps-TP17-5500MHz-Average-Horizontal-2x2

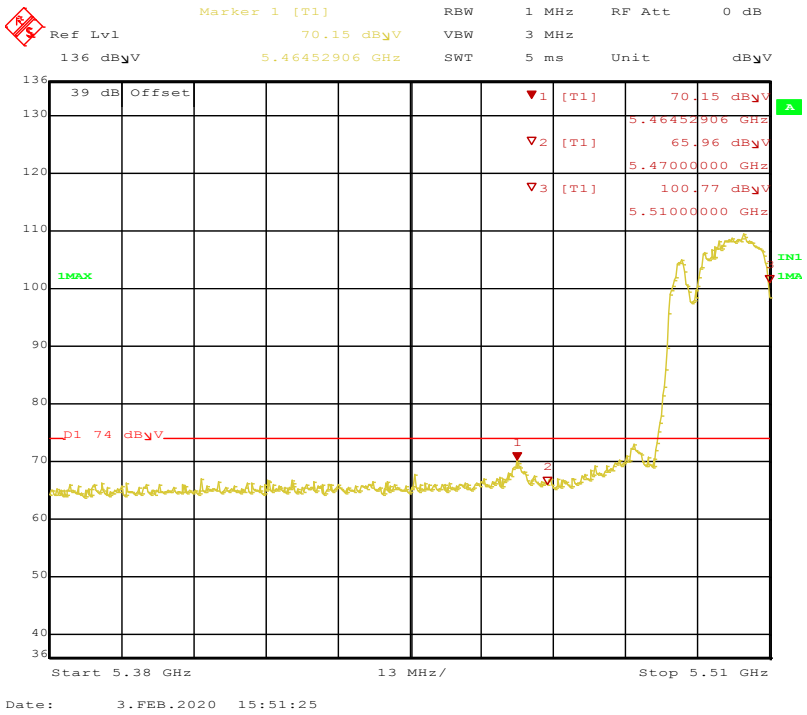


Figure 96: 802.11ac VHT40-MCS0-TP16.5-5510MHz-Peak-Vertical-2x2

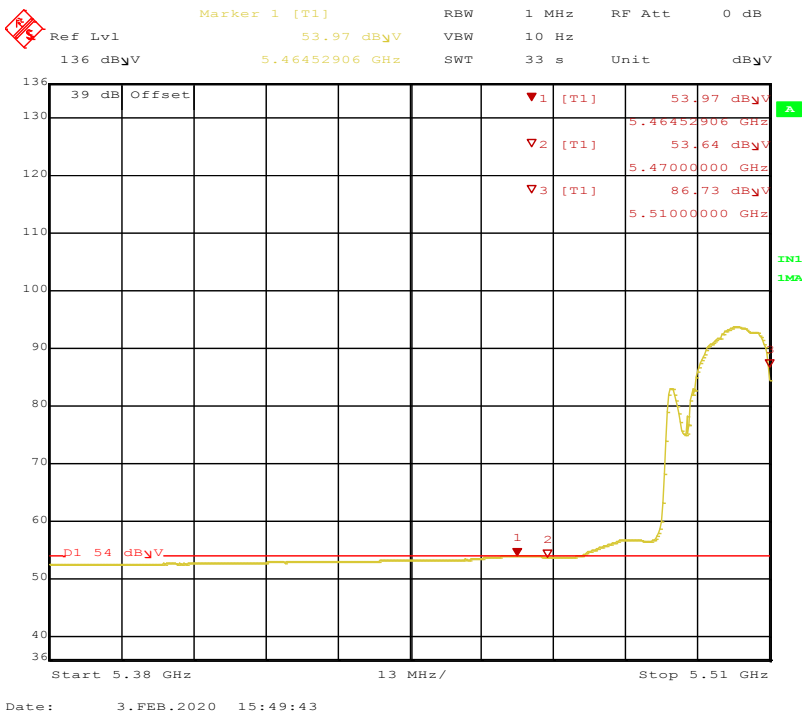


Figure 97: 802.11ac VHT40-MCS0-TP16.5-5510MHz-Average-Vertical-2x2

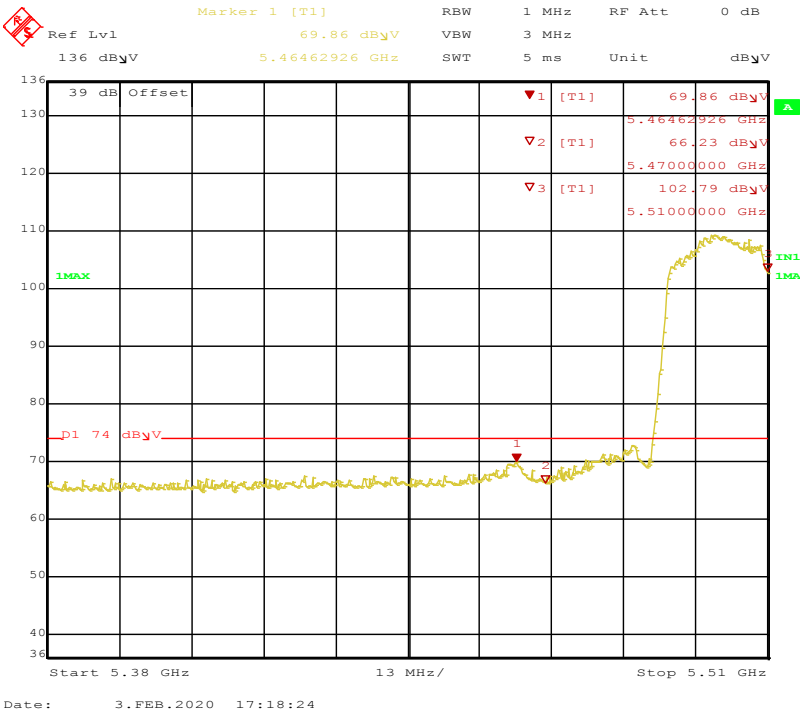


Figure 98: 802.11ac VHT40-MCS0-TP16.5-5510MHz-Peak-Horizontal-2x2

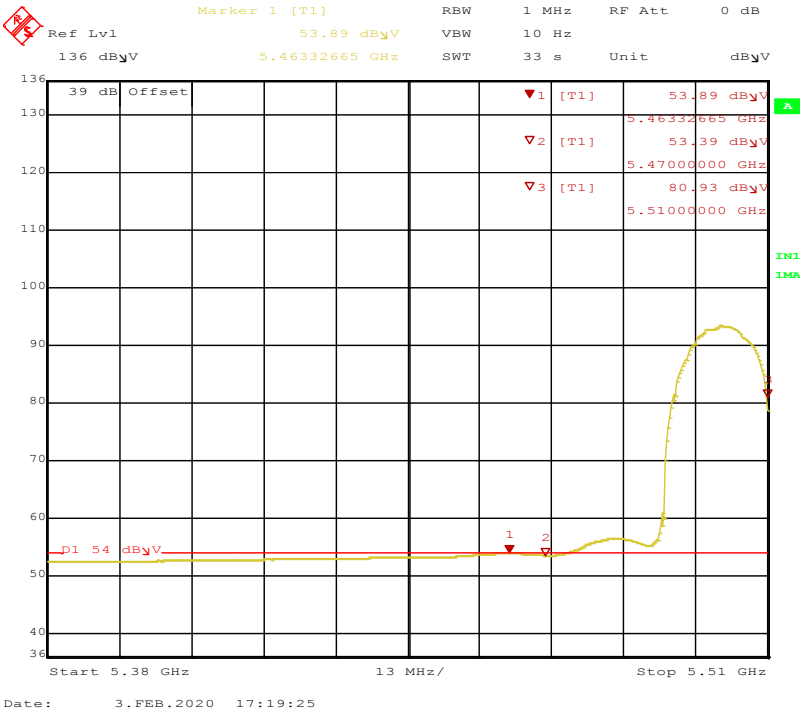


Figure 99: 802.11ac VHT40-MCS0-TP16.5-5510MHz-Average-Horizontal-2x2

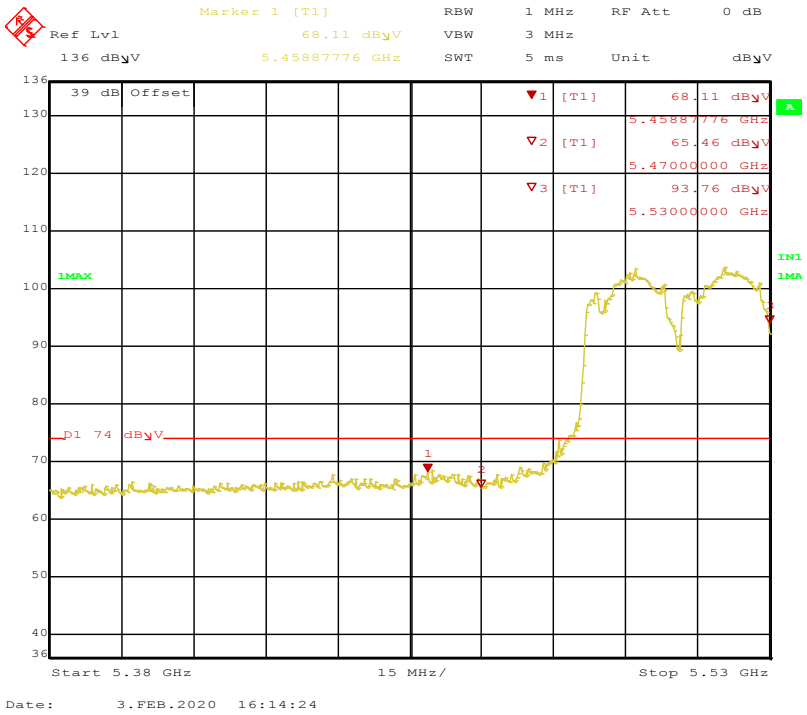


Figure 100: 802.11ac VHT80-MCS0-TP17-5530MHz-Peak-Vertical-2x2

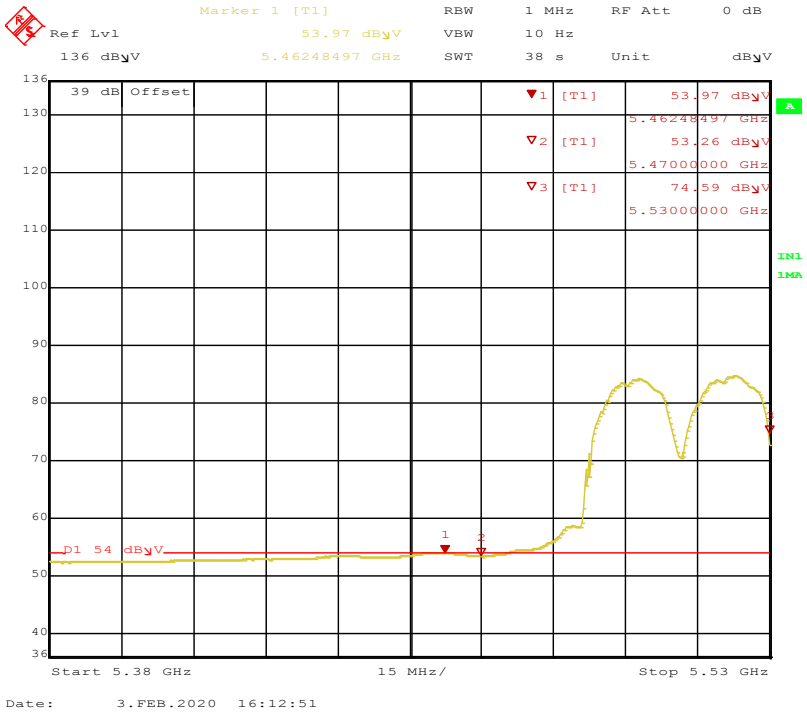


Figure 101: 802.11ac VHT80-MCS0-TP17-5530MHz-Average-Vertical-2x2

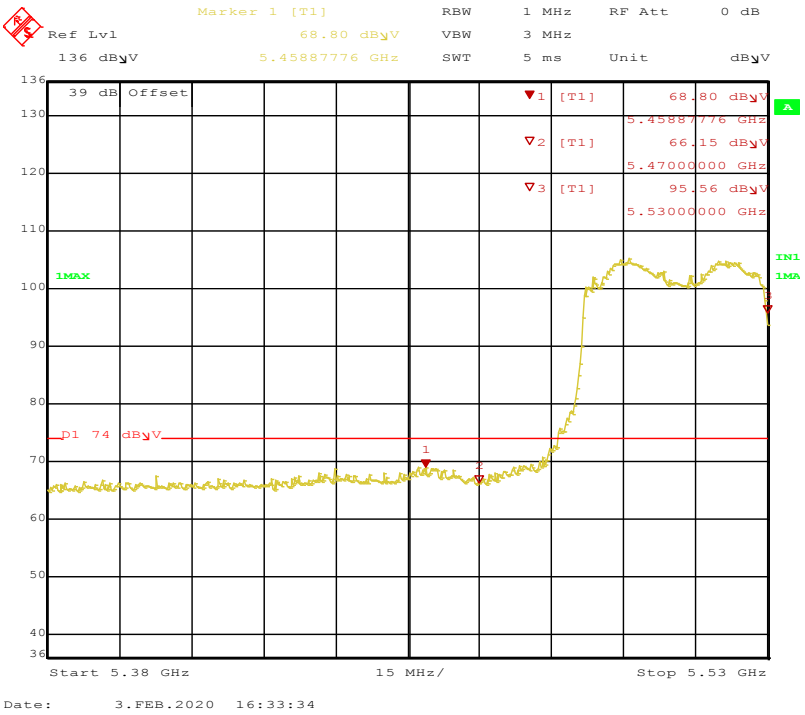


Figure 102: 802.11ac VHT80-MCS0-TP17-5530MHz-Peak-Horizontal-2x2

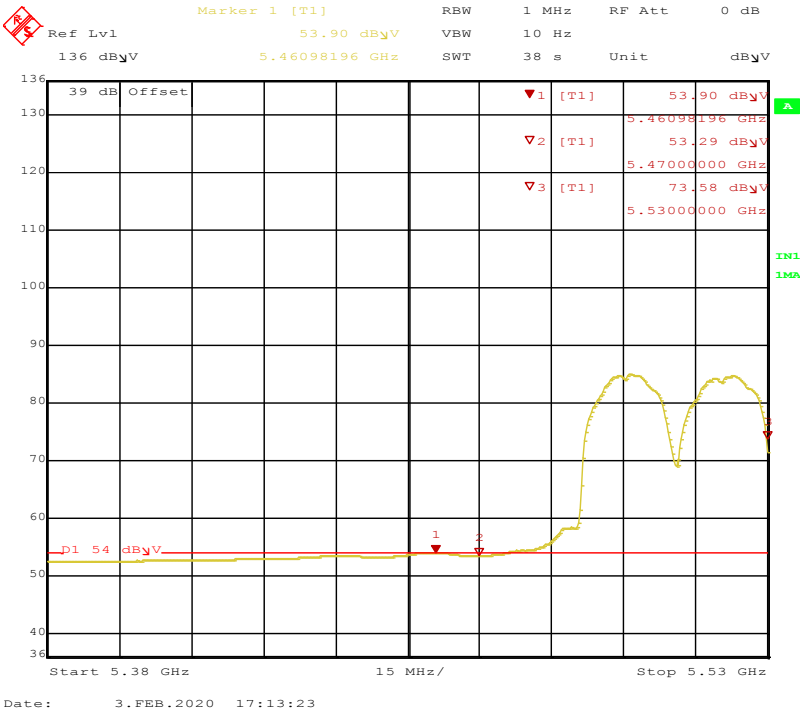


Figure 103: 802.11ac VHT80-MCS0-TP17-5530MHz-Average-Horizontal-2x2

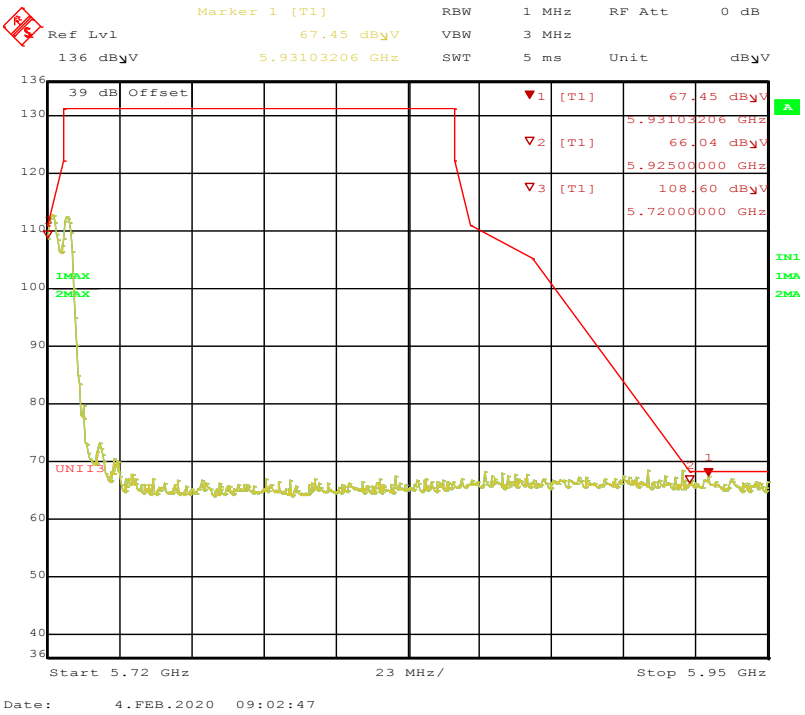


Figure 104: 802.11a-6Mbps-TP17-5720MHz-Peak-Vertical-2x2

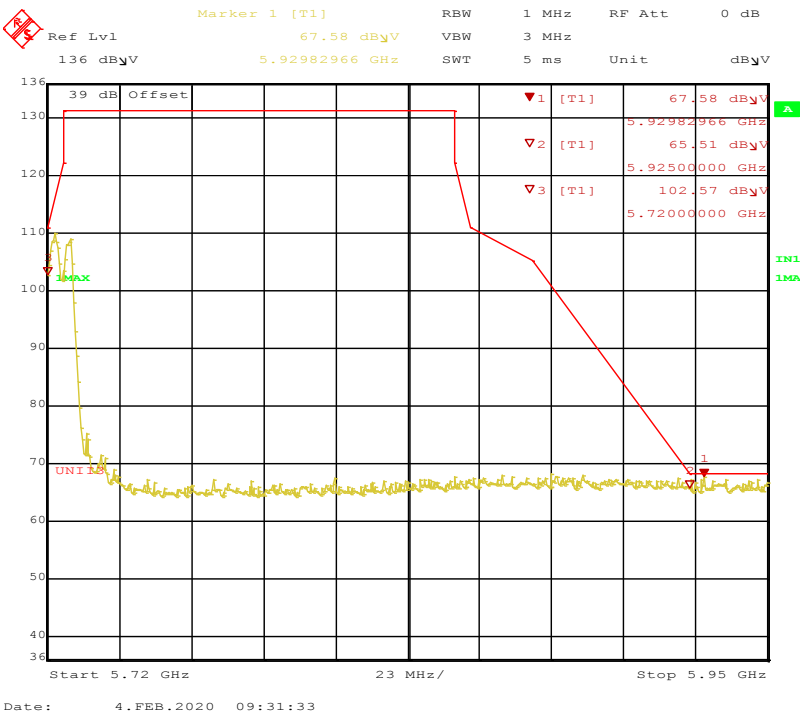


Figure 105: 802.11a-6Mbps-TP17-5720MHz-Peak-Horizontal-2x2

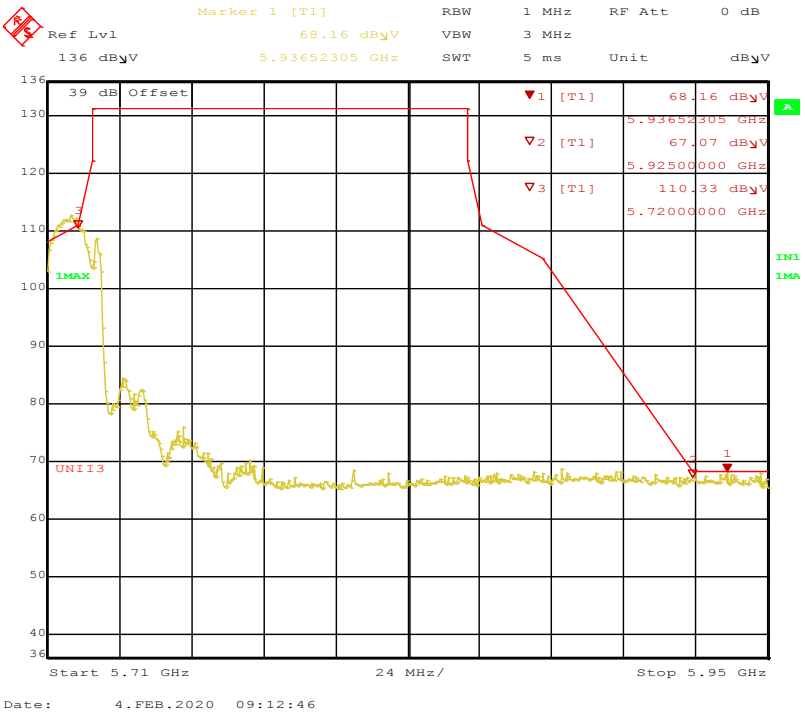


Figure 106: 802.11ac VHT40-MCS0-TP18.5-5710MHz-Peak-Vertical-2x2

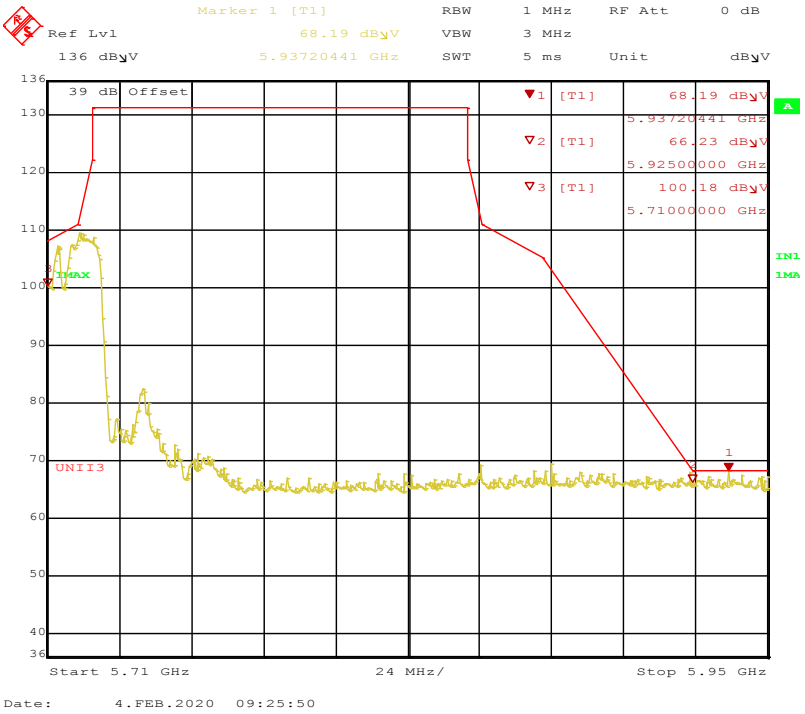


Figure 107: 802.11ac VHT40-MCS0-TP18.5-5710MHz-Peak-Horizontal-2x2

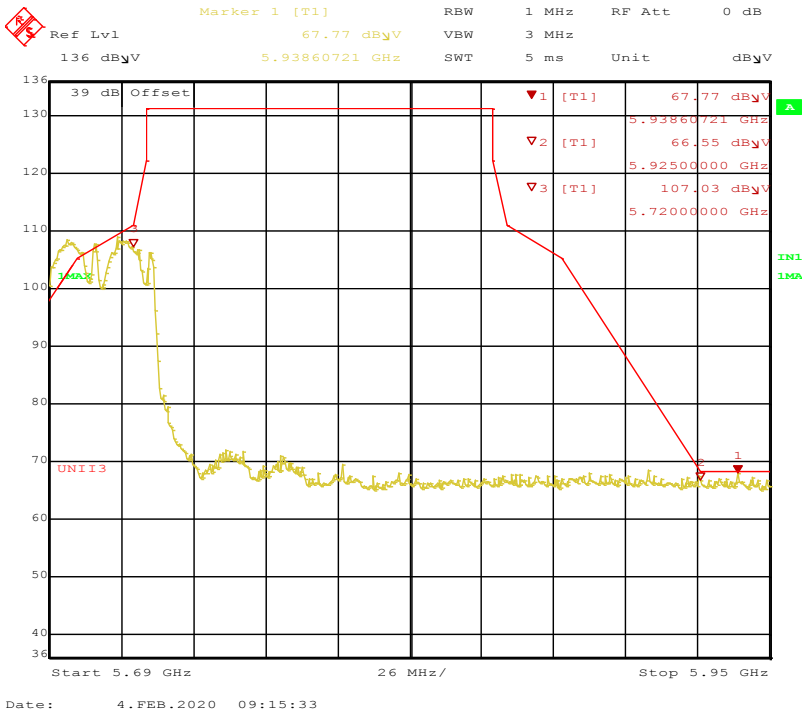


Figure 108: 802.11ac VHT80-MCS0-TP19-5690MHz-Peak-Vertical-2x2

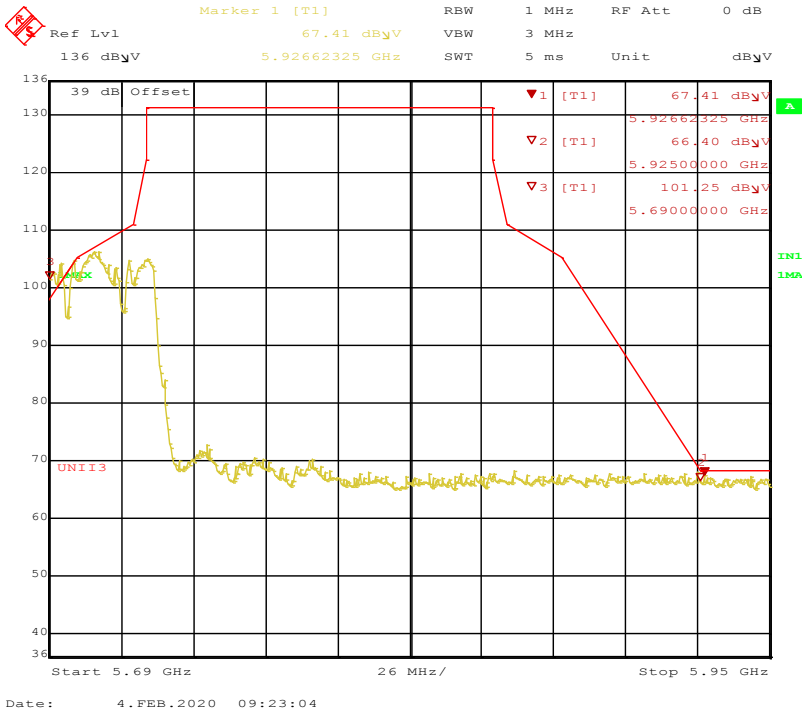


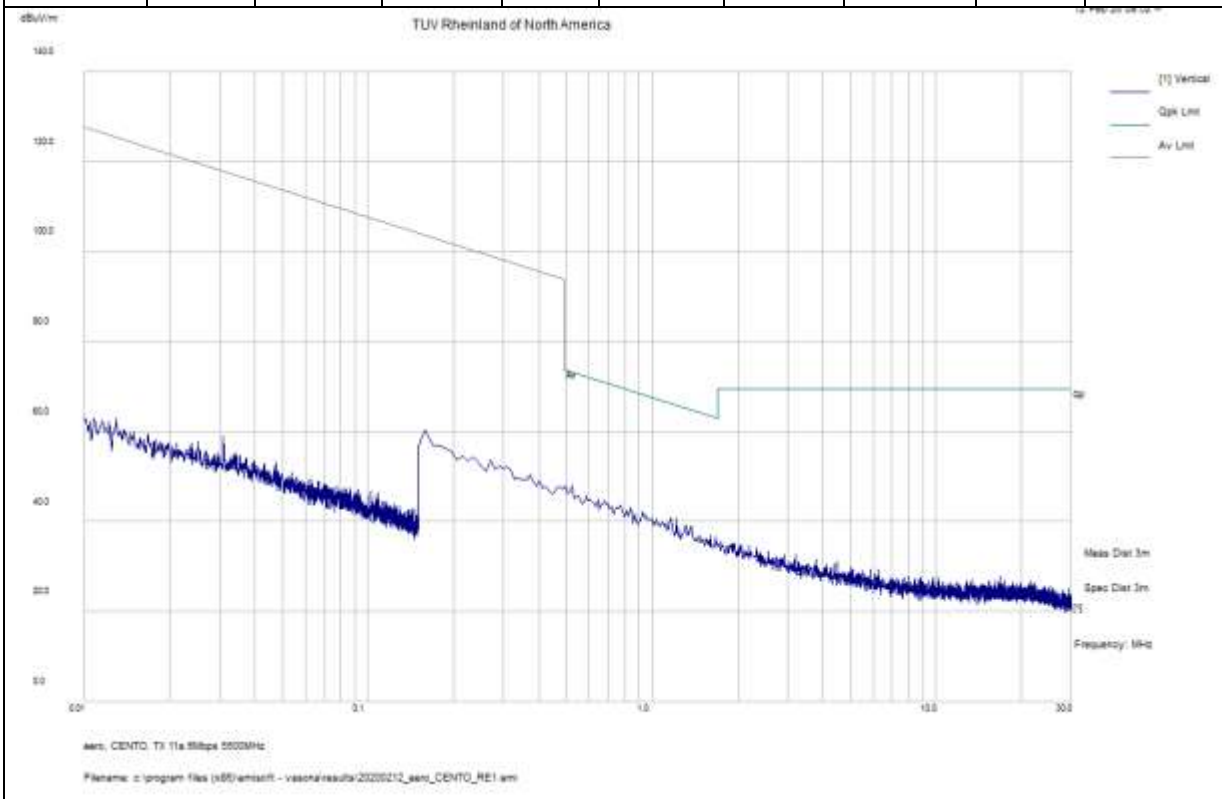
Figure 109: 802.11ac VHT80-MCS0-TP19-5690MHz-Peak-Horizontal-2x2

SOP 1 Radiated Emissions — Tracking # 32060650.001 Page 1 of 39

EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5500MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.68	31.90	44.58	Pk	100	69	70.97	-26.39	0	Noise Floor
1.22	27.77	40.67	Pk	100	90	65.89	-25.22	0	Noise Floor
1.61	23.79	36.71	Pk	100	155	63.48	-26.77	0	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

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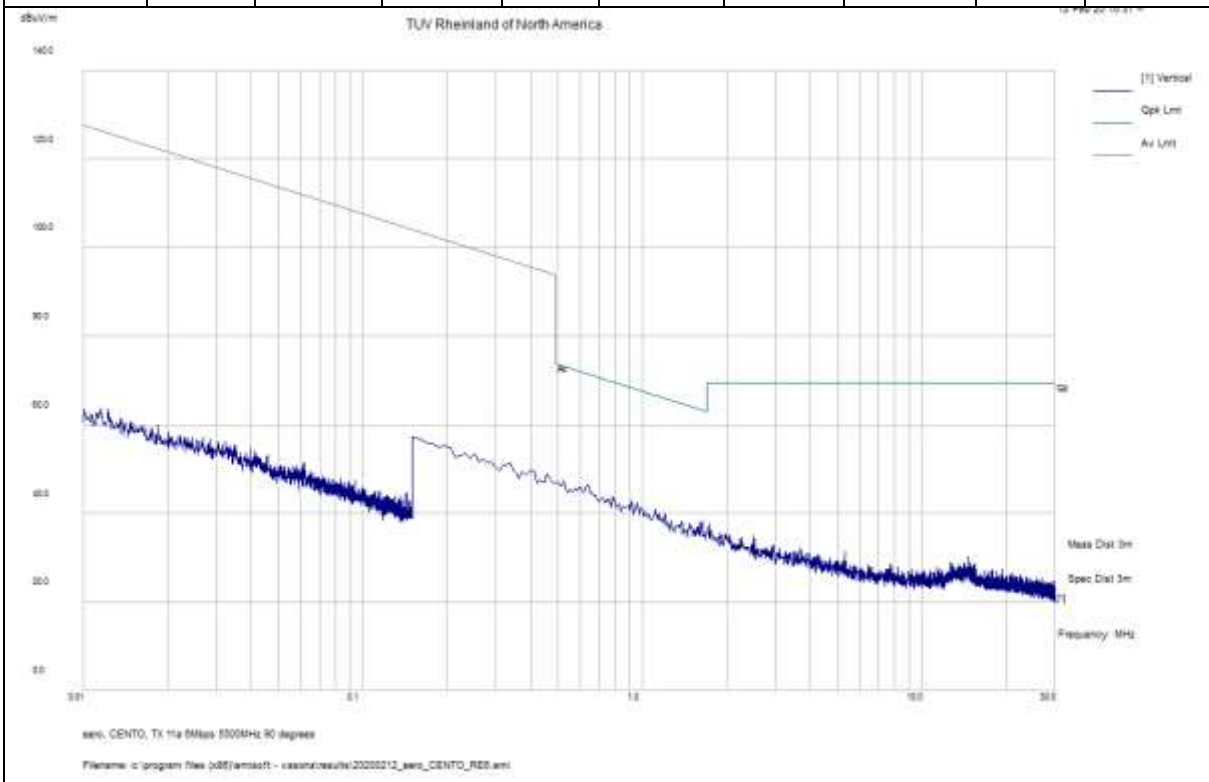
EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5500MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.63	33.62	46.29	Pk	100	106	71.58	-25.29	90	Noise Floor
0.91	30.02	42.73	Pk	100	122	68.41	-25.68	90	Noise Floor
1.26	25.35	38.26	Pk	100	35	65.57	-27.31	90	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

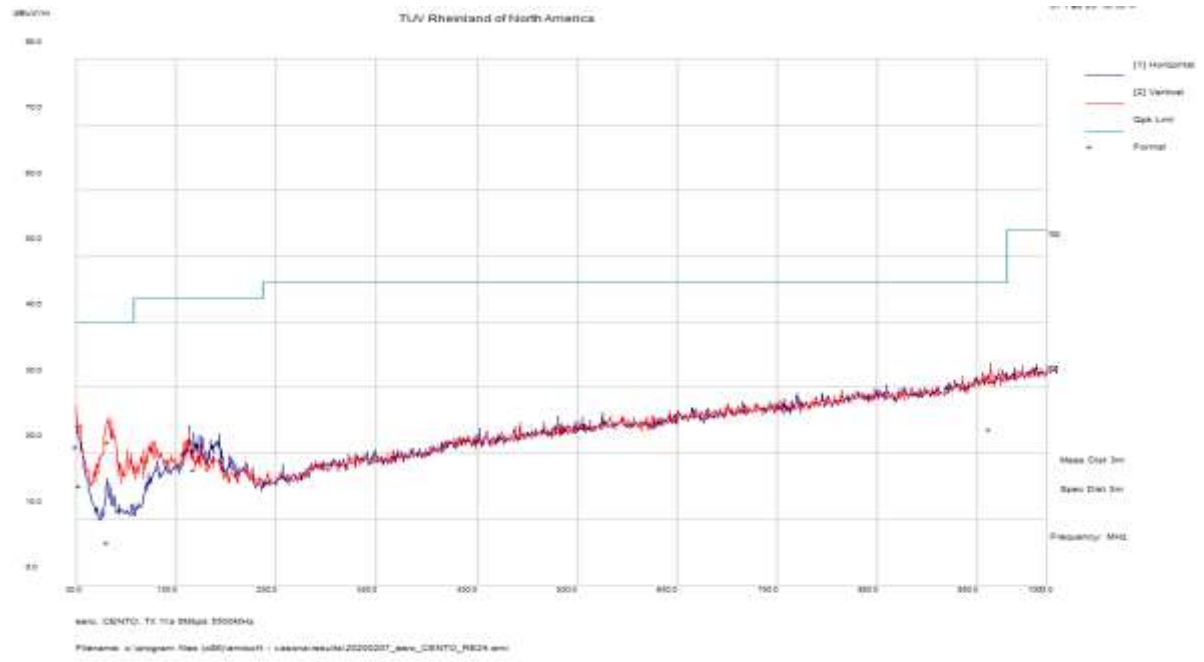
Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 3 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 43%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	120 kHz/ 300 kHz
Dist/Ant Used	3m – JB3	**Performed by**	Justin Clark

30 MHz – 1 GHz Transmit at 5500 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
33.57	21.49	2.50	-8.88	15.10	QP	H	191	300	40.00	-24.90
142.69	32.81	3.07	-15.19	20.69	QP	H	187	146	43.50	-22.81
147.52	30.01	3.09	-15.46	17.64	QP	H	174	118	43.50	-25.86
30.01	24.72	2.49	-6.23	20.98	QP	V	157	279	40.00	-19.02
62.23	39.60	2.69	-20.57	21.72	QP	V	129	163	40.00	-18.28
942.47	22.29	5.02	-3.60	23.72	QP	V	301	23	46.00	-22.28



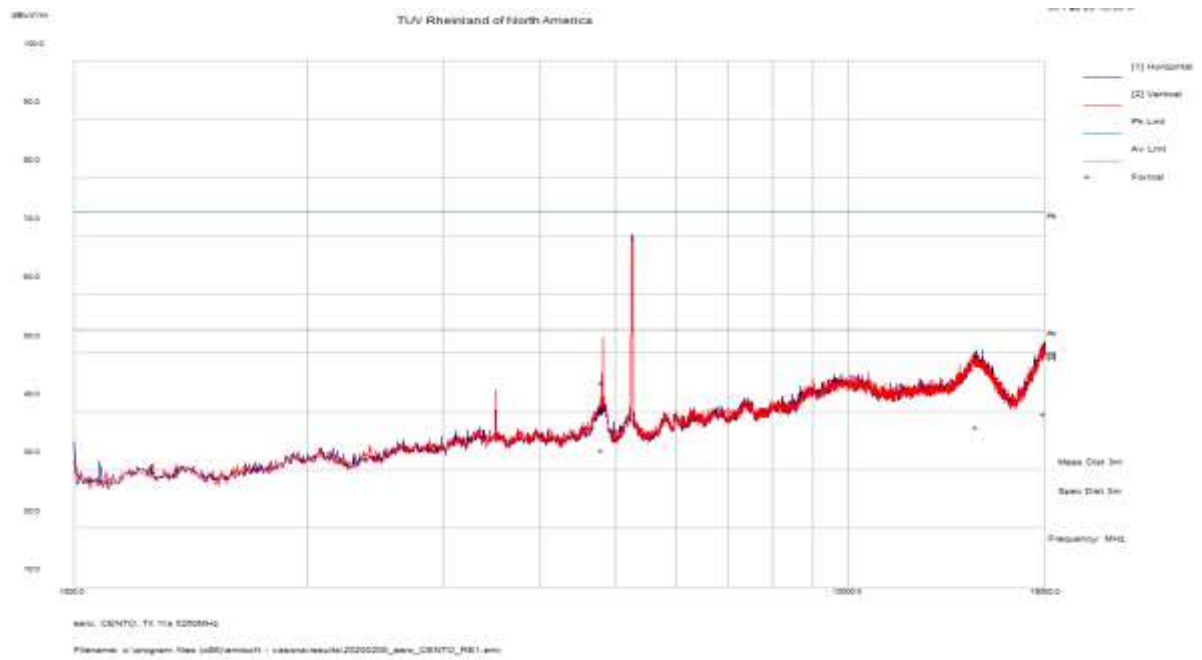
Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Note: 1. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
2. UNII2A and UNII2C shares the same chip.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 4 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5260 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14642.94	56.28	6.19	-12.84	49.62	Pk	H	161	92	74.00	-24.38
14642.94	44.05	6.19	-12.84	37.39	Avg	H	161	92	54.00	-16.61
17919.90	52.62	6.88	-7.98	51.52	Pk	H	194	284	74.00	-22.48
17919.90	40.73	6.88	-7.98	39.63	Avg	H	194	284	54.00	-14.37
4817.73	65.05	3.50	-23.55	45.00	Pk	V	156	140	74.00	-29.00
4817.73	53.44	3.50	-23.55	33.39	Avg	V	156	140	54.00	-20.61



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

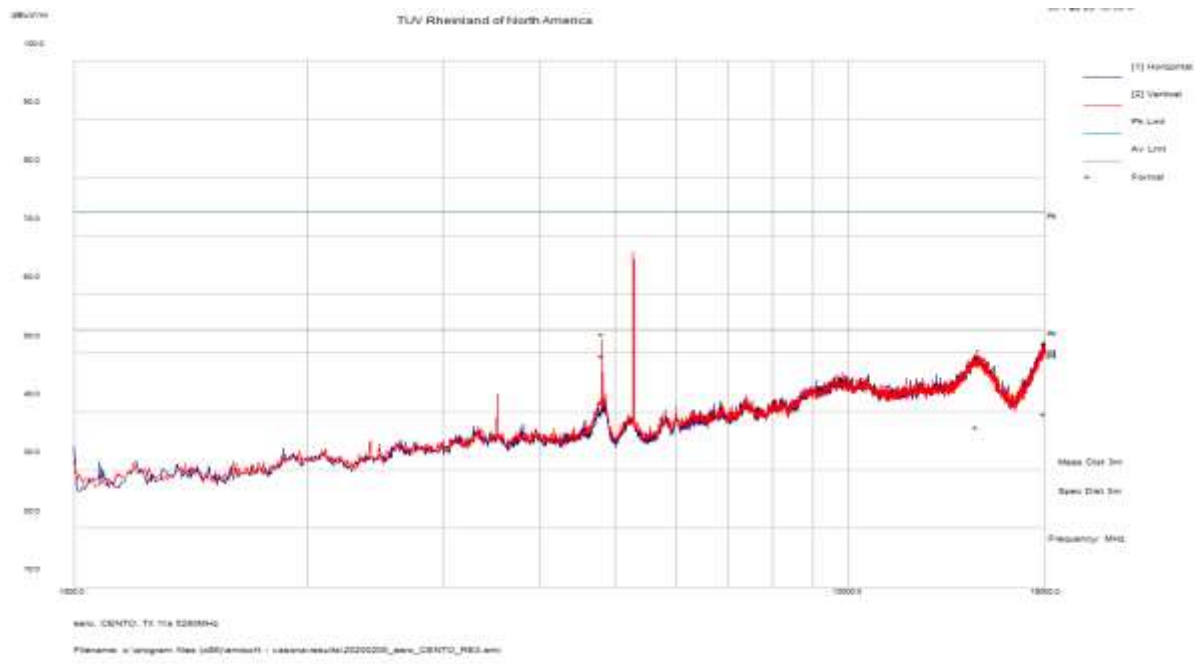
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 5 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5280 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14685.46	55.76	6.13	-12.60	49.29	Pk	H	263	240	74.00	-24.71
14685.46	43.78	6.13	-12.60	37.32	Avg	H	263	240	54.00	-16.69
17919.63	52.88	6.88	-7.98	51.79	Pk	H	164	224	74.00	-22.21
17919.63	40.70	6.88	-7.98	39.60	Avg	H	164	224	54.00	-14.40
4814.83	73.38	3.50	-23.56	53.33	Pk	V	121	134	74.00	-20.68
4814.83	69.64	3.50	-23.56	49.59	Avg	V	121	134	54.00	-4.42



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

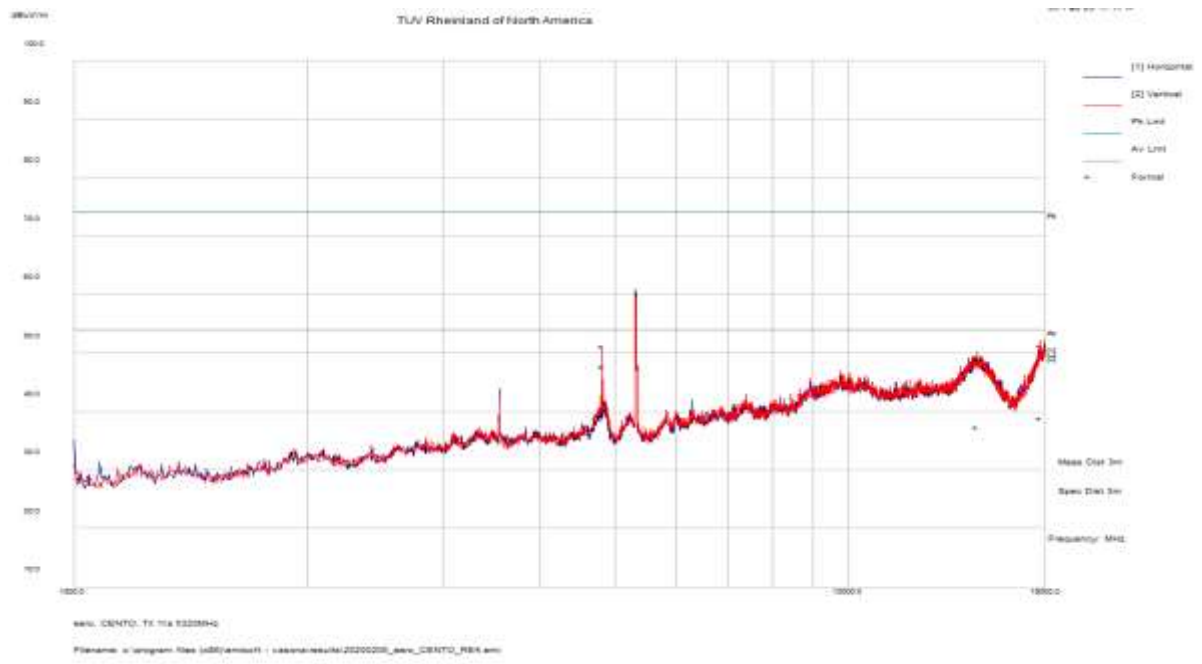
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 6 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5320 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
4813.71	71.31	3.50	-23.56	51.25	Pk	V	241	122	74.00	-22.75
4813.71	67.78	3.50	-23.56	47.72	Avg	V	241	122	54.00	-6.28
14684.05	55.49	6.13	-12.60	49.02	Pk	V	218	230	74.00	-24.98
14684.05	43.81	6.13	-12.60	37.34	Avg	V	218	230	54.00	-16.66
17722.18	53.19	6.76	-8.64	51.31	Pk	V	141	308	74.00	-22.69
17722.18	40.74	6.76	-8.64	38.86	Avg	V	141	308	54.00	-15.14



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

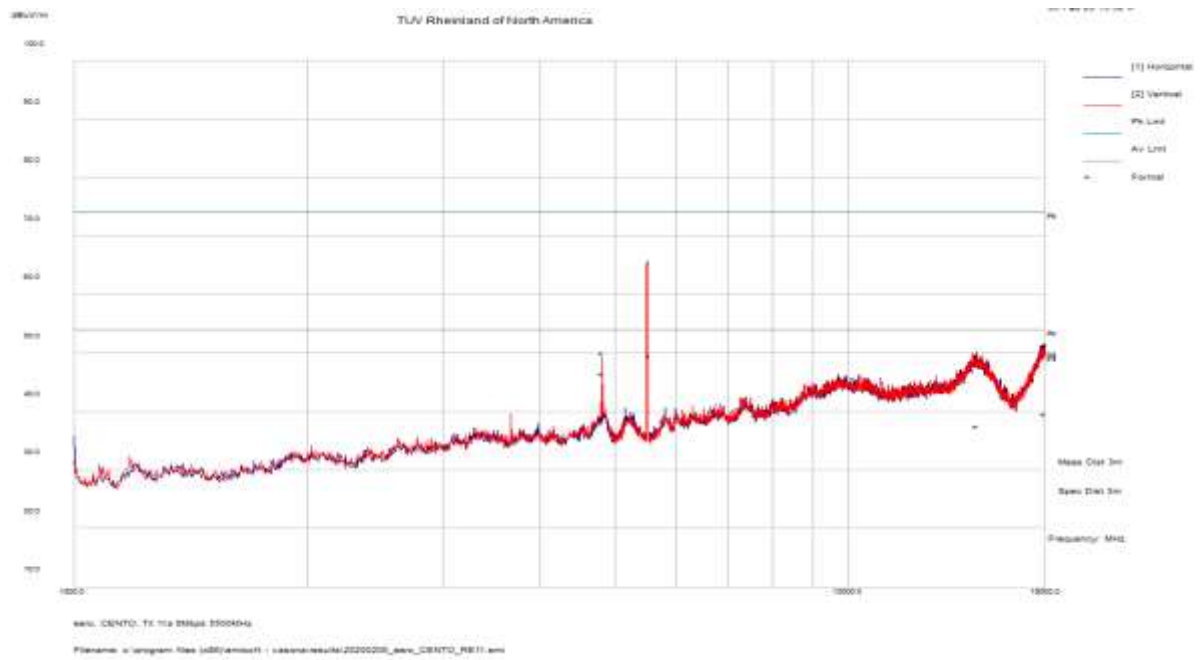
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 7 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5500 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17932.86	52.46	6.93	-8.00	51.39	Pk	H	253	336	74.00	-22.61
17932.86	40.62	6.93	-8.00	39.55	Avg	H	253	336	54.00	-14.45
4812.76	70.11	3.50	-23.56	50.04	Pk	V	243	130	74.00	-23.96
4812.76	66.63	3.50	-23.56	46.57	Avg	V	243	130	54.00	-7.44
14659.94	56.20	6.18	-12.74	49.64	Pk	V	246	180	74.00	-24.36
14659.94	44.03	6.18	-12.74	37.47	Avg	V	246	180	54.00	-16.53



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

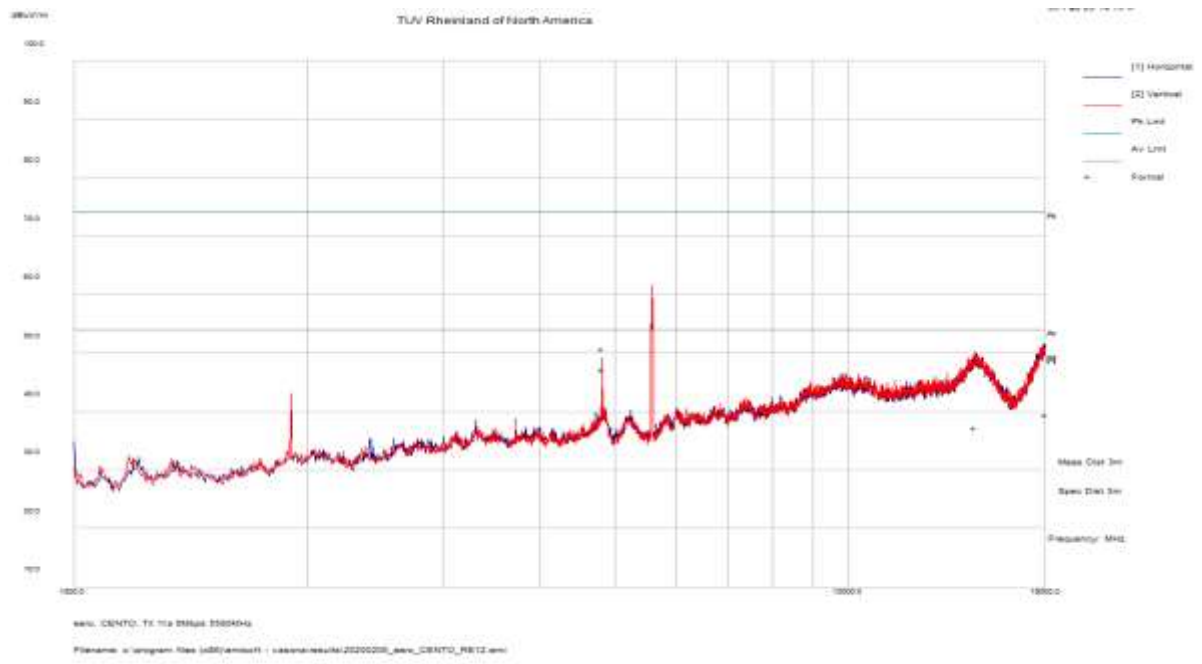
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 8 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5580 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17972.54	52.25	6.96	-7.69	51.52	Pk	H	255	224	74.00	-22.48
17972.54	40.20	6.96	-7.69	39.46	Avg	H	255	224	54.00	-14.54
4812.68	70.79	3.50	-23.56	50.72	Pk	V	237	130	74.00	-23.28
4812.68	67.22	3.50	-23.56	47.15	Avg	V	237	130	54.00	-6.85
14588.37	55.82	6.15	-13.09	48.88	Pk	V	168	270	74.00	-25.12
14588.37	44.20	6.15	-13.09	37.26	Avg	V	168	270	54.00	-16.74



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

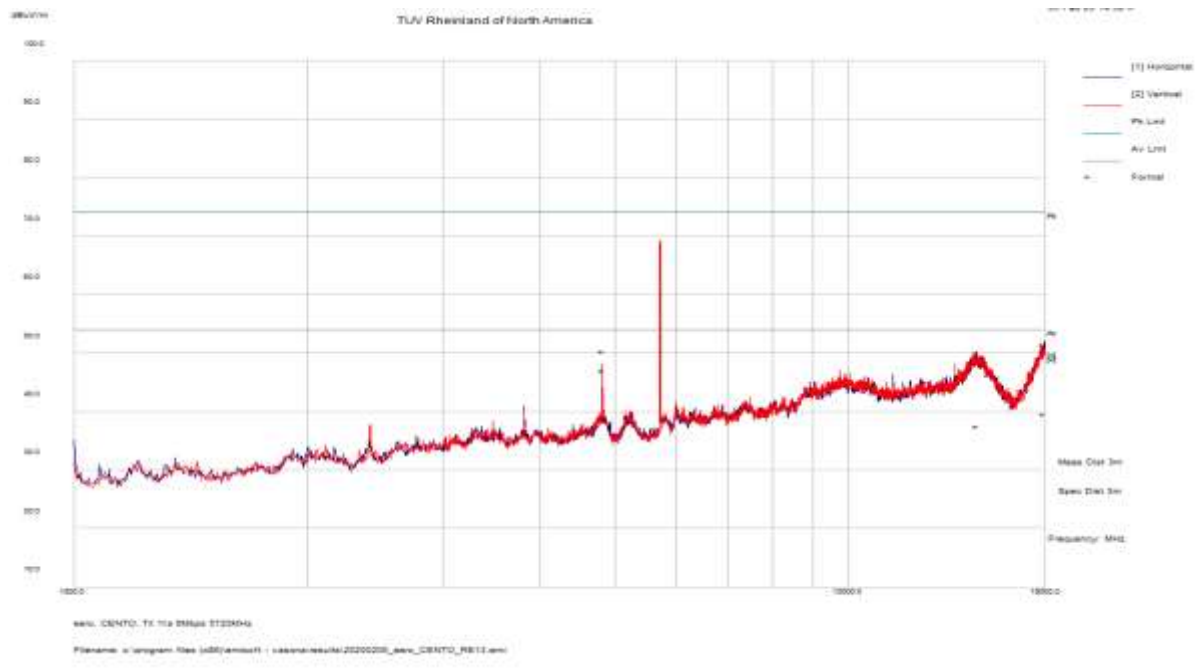
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 9 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5720 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
4812.43	70.46	3.50	-23.56	50.39	Pk	V	231	134	74.00	-23.61
4812.43	67.06	3.50	-23.56	47.00	Avg	V	231	134	54.00	-7.00
14670.65	56.17	6.16	-12.67	49.66	Pk	V	222	264	74.00	-24.34
14670.65	43.96	6.16	-12.67	37.45	Avg	V	222	264	54.00	-16.55
17906.28	52.59	6.82	-7.91	51.50	Pk	V	224	254	74.00	-22.50
17906.28	40.63	6.82	-7.91	39.54	Avg	V	224	254	54.00	-14.46



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

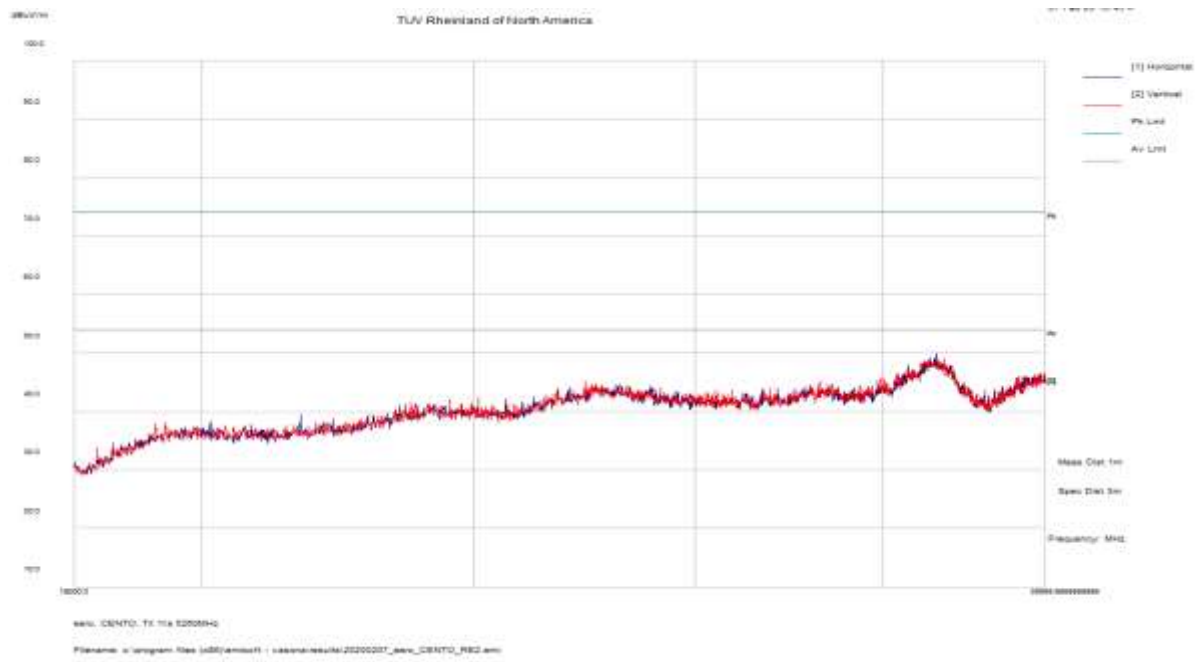
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 10 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5260 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36548.75	44.51	10.23	-4.88	49.86	Pk	H	150	62	54.00	-4.14
39958.75	44.16	10.94	-8.51	46.60	Pk	V	150	341	54.00	-7.40



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

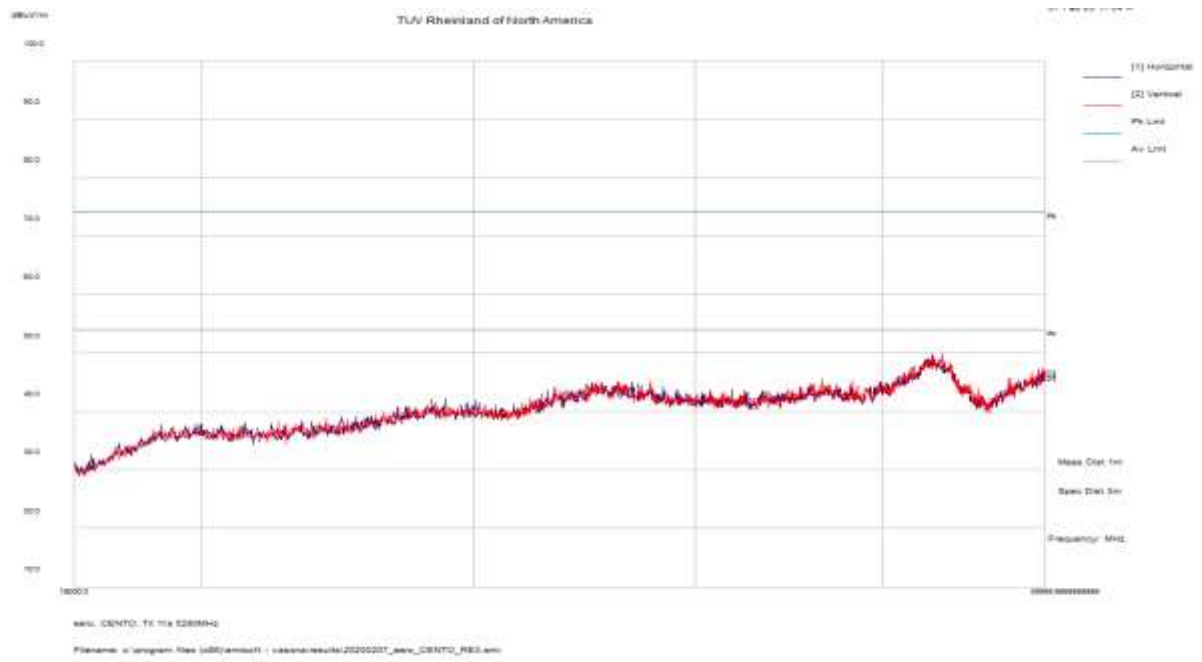
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 11 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5280 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36438.75	44.57	10.23	-4.87	49.93	Pk	H	150	88	54.00	-4.07
39903.75	44.92	10.90	-8.43	47.40	Pk	V	150	298	54.00	-6.60



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

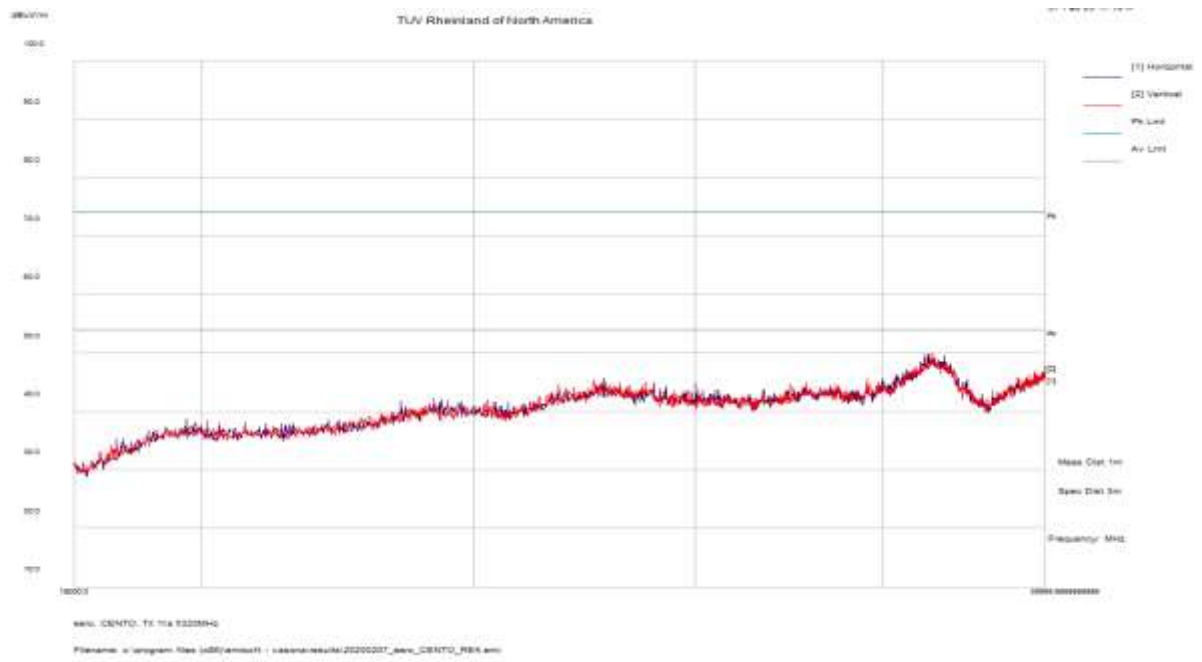
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 12 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5320 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36370.00	44.59	10.22	-4.95	49.87	Pk	H	150	117	54.00	-4.14
40000.00	45.48	10.97	-8.56	47.88	Pk	V	150	236	54.00	-6.12



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

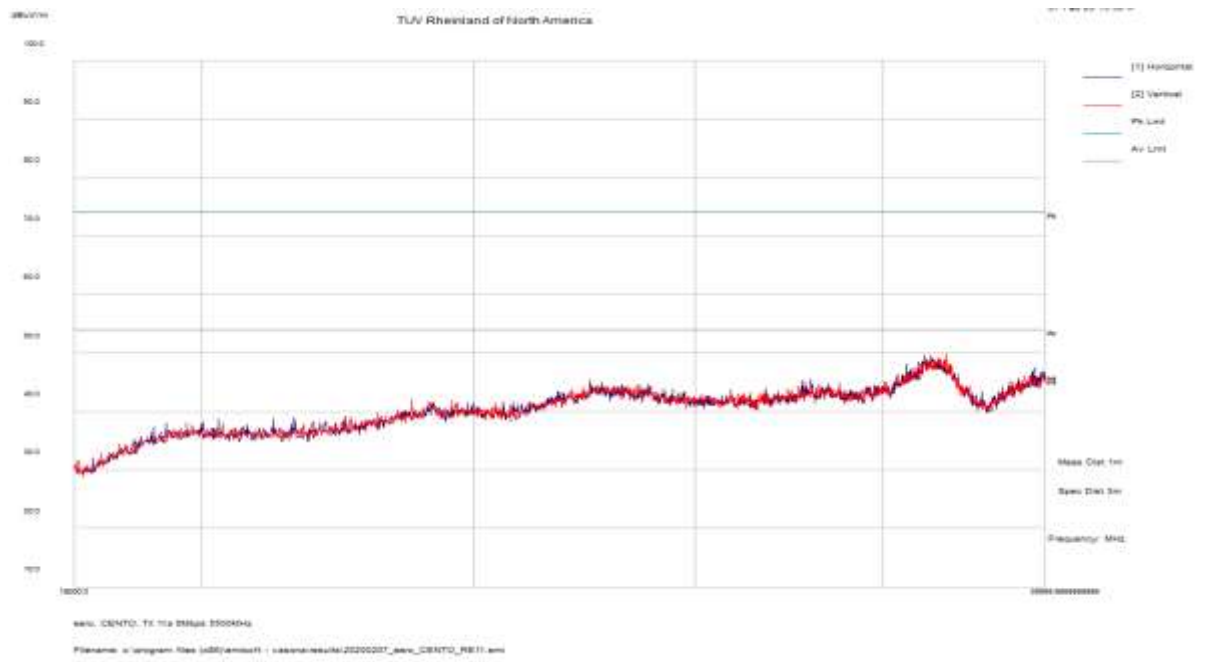
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 13 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5500 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39642.50	45.19	10.80	-8.52	47.46	Pk	H	150	107	54.00	-6.54
36851.25	45.37	10.24	-5.74	49.87	Pk	V	150	212	54.00	-4.13



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

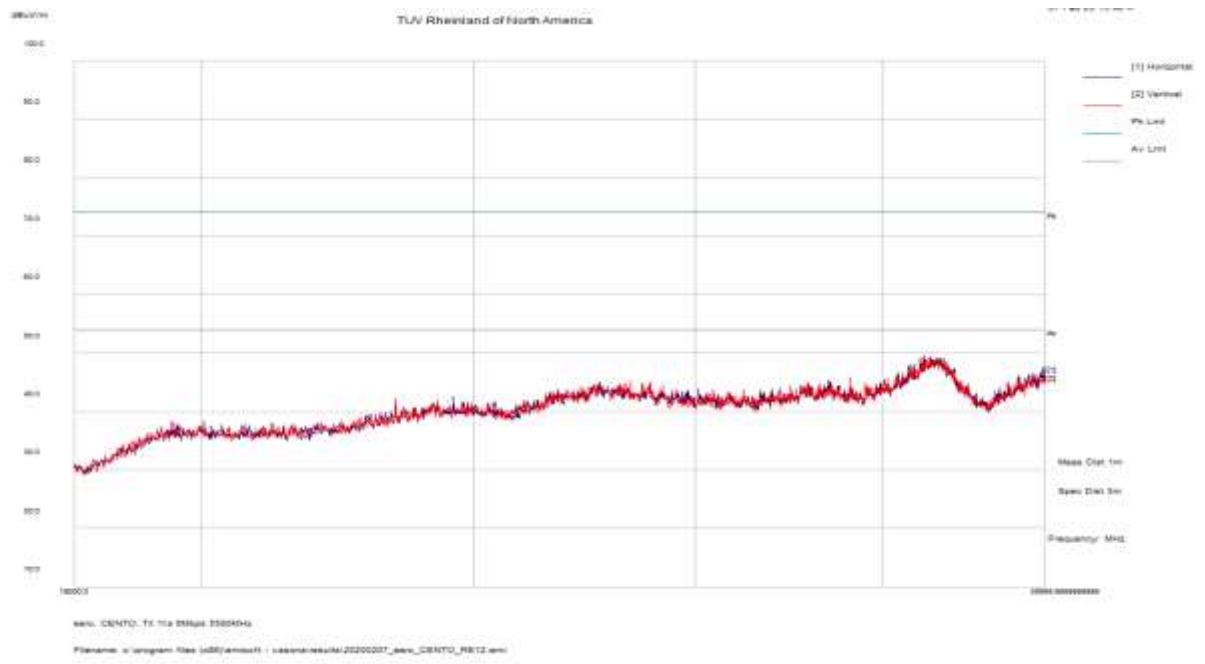
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 14 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5580 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36205.00	44.50	10.29	-5.33	49.46	Pk	H	150	46	54.00	-4.54
40000.00	45.40	10.97	-8.56	47.81	Pk	H	150	34	54.00	-6.19



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

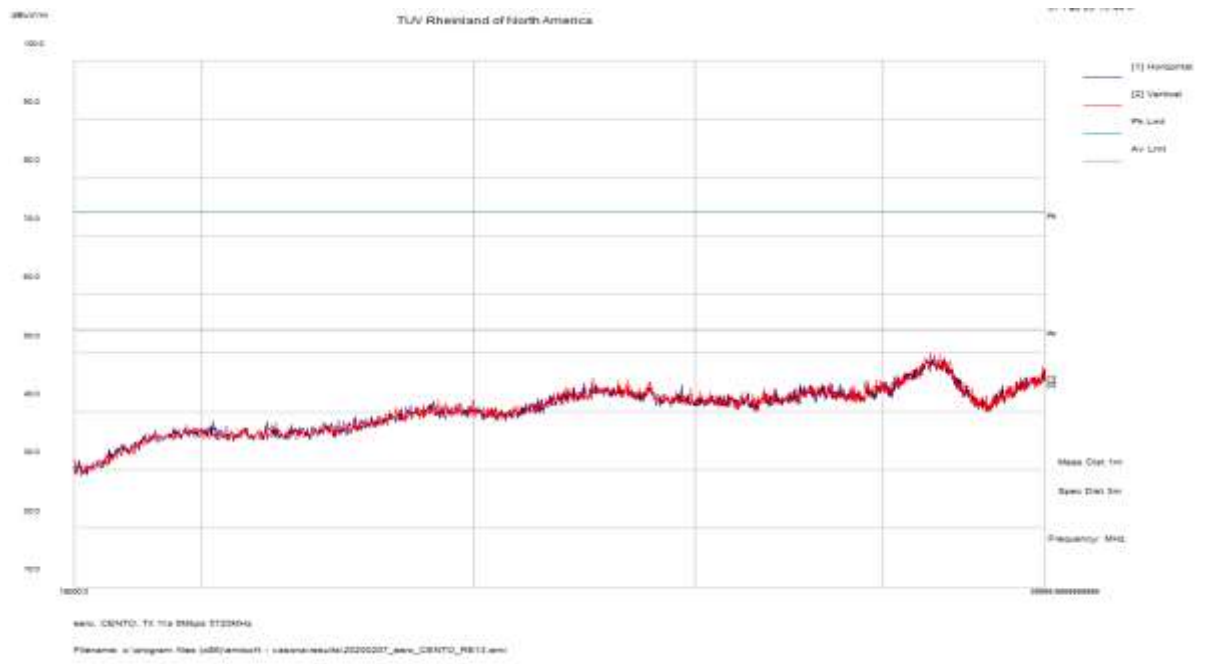
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 15 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a at 6Mbps / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5720 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36397.50	44.61	10.23	-4.87	49.96	Pk	V	150	124	54.00	-4.04
39917.50	45.25	10.91	-8.45	47.72	Pk	V	150	313	54.00	-6.29



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

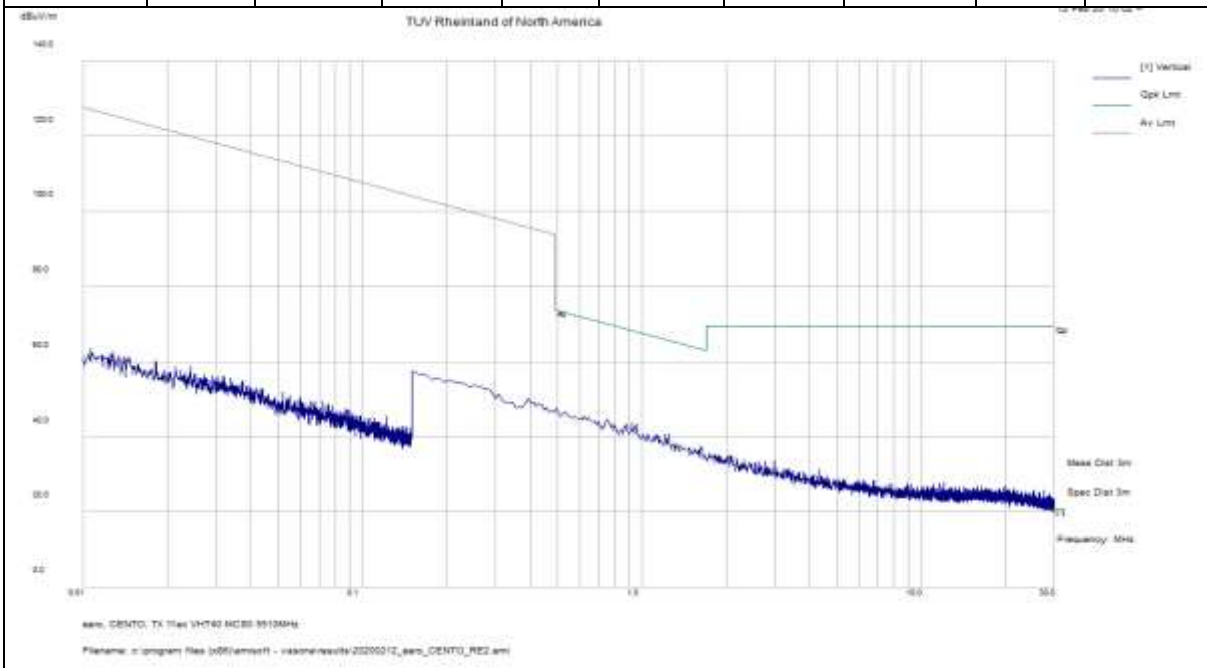
Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions — Tracking # 32060650.001 Page 16 of 39

EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5510MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.62	32.81	45.48	Pk	100	26	71.71	-26.23	0	Noise Floor
1.01	27.71	40.61	Pk	100	356	67.49	-26.88	0	Noise Floor
1.64	24.35	37.27	Pk	100	329	63.33	-26.06	0	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

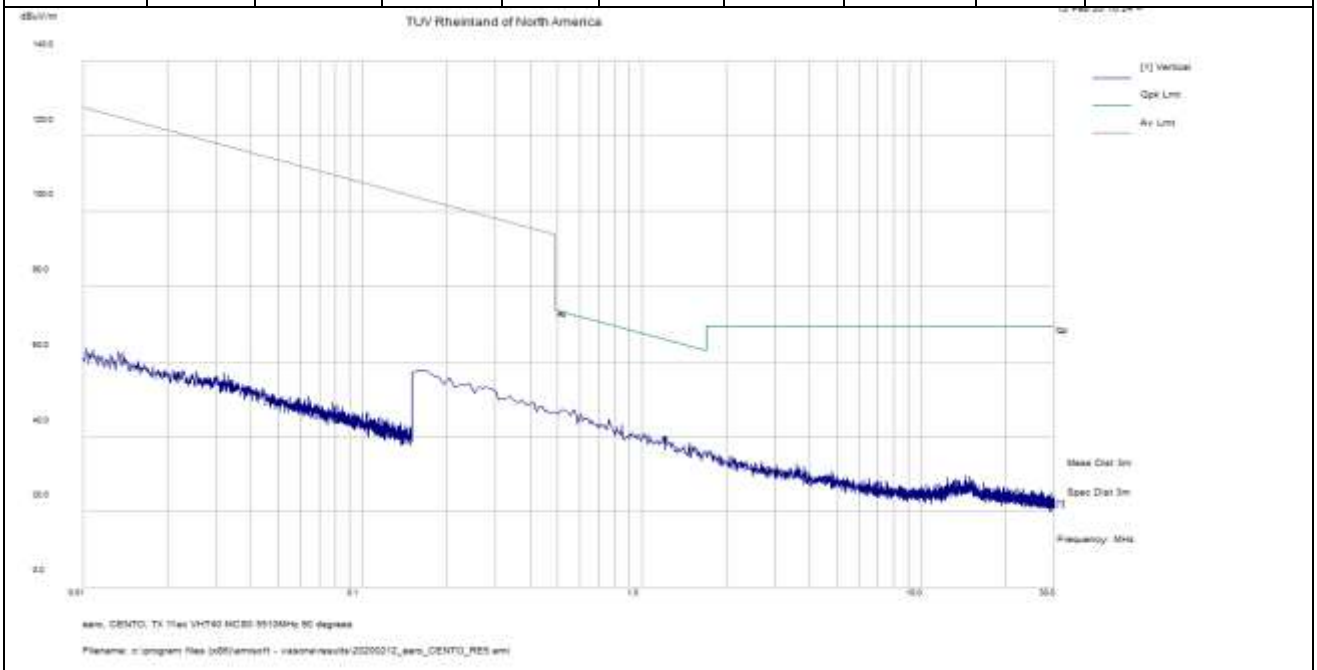
Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

SOP 1 Radiated Emissions — Tracking # 32060650.001 Page 17 of 39

EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5510MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.76	31.87	44.49	Pk	100	94	69.96	-25.47	90	Noise Floor
1.07	27.30	40.20	Pk	100	62	67.02	-26.83	90	Noise Floor
1.67	23.35	36.27	Pk	100	313	63.14	-26.86	90	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

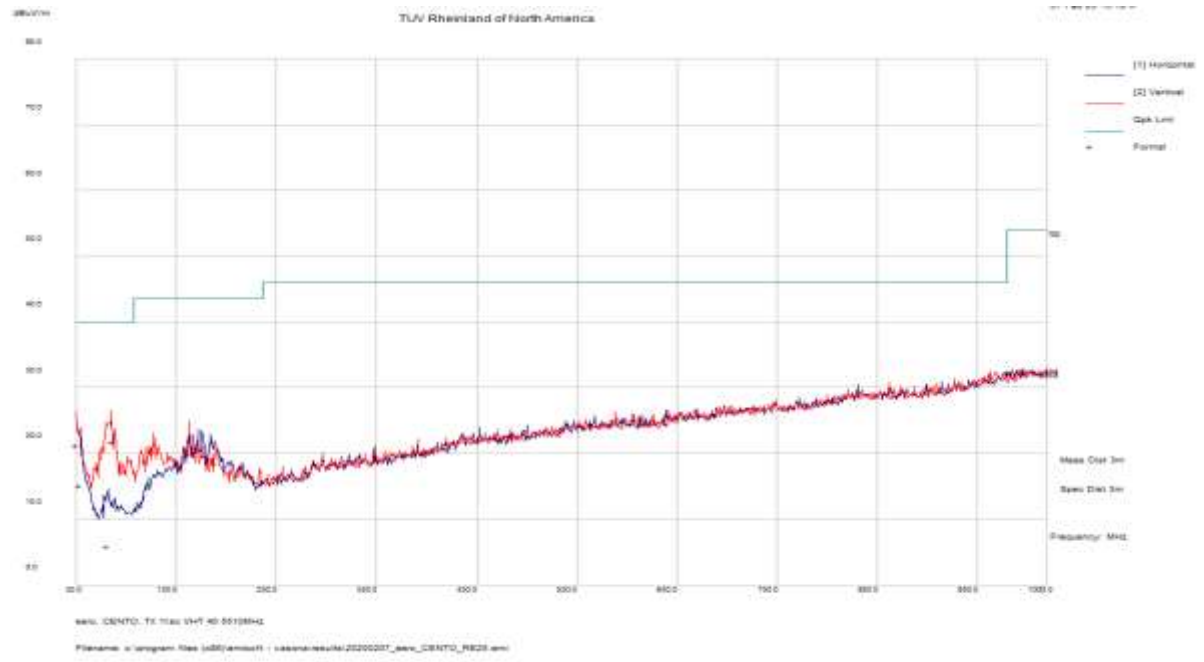
Combined Standard Uncertainty $u_c(y) = \pm 3.2$ dB Expanded Uncertainty $U = ku_c(y)$ $k = 2$ for 95% confidence

Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 18 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 43%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	120 kHz/ 300 kHz
Dist/Ant Used	3m – JB3	**Performed by**	Justin Clark

30 MHz – 1 GHz Transmit at 5510 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
33.43	21.36	2.50	-8.77	15.10	QP	H	180	358	40.00	-24.90
157.61	32.11	3.14	-15.60	19.65	QP	H	168	92	43.50	-23.85
168.53	31.45	3.18	-16.14	18.48	QP	H	200	122	43.50	-25.02
30.00	24.97	2.49	-6.22	21.24	QP	V	147	265	40.00	-18.76
66.21	39.20	2.72	-20.19	21.73	QP	V	109	148	40.00	-18.27
142.67	31.89	3.07	-15.19	19.78	QP	V	117	208	43.50	-23.72



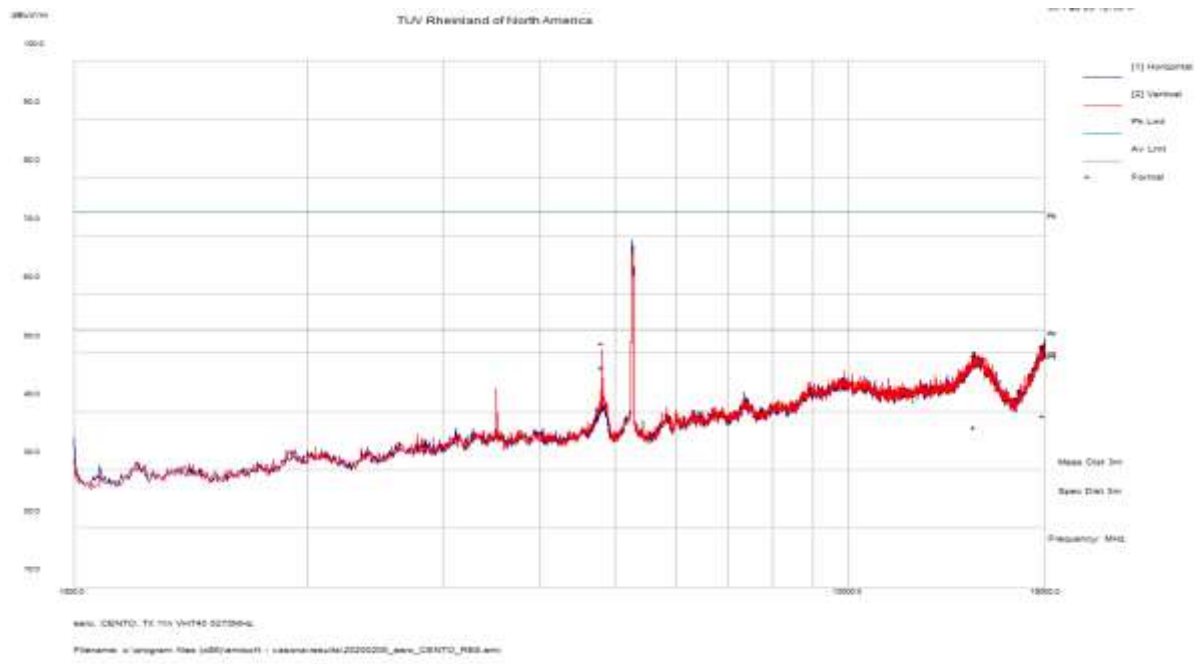
Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Note: 1. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
2. UNII2A and UNII2C shares the same chip.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 19 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5270 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14579.81	56.51	6.18	-13.14	49.56	Pk	H	240	200	74.00	-24.44
14579.81	44.28	6.18	-13.14	37.33	Avg	H	240	200	54.00	-16.68
17887.54	52.34	6.80	-7.79	51.36	Pk	H	163	172	74.00	-22.64
17887.54	40.30	6.80	-7.79	39.31	Avg	H	163	172	54.00	-14.69
4812.94	71.76	3.50	-23.56	51.70	Pk	V	264	126	74.00	-22.30
4812.94	67.68	3.50	-23.56	47.61	Avg	V	264	126	54.00	-6.39



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

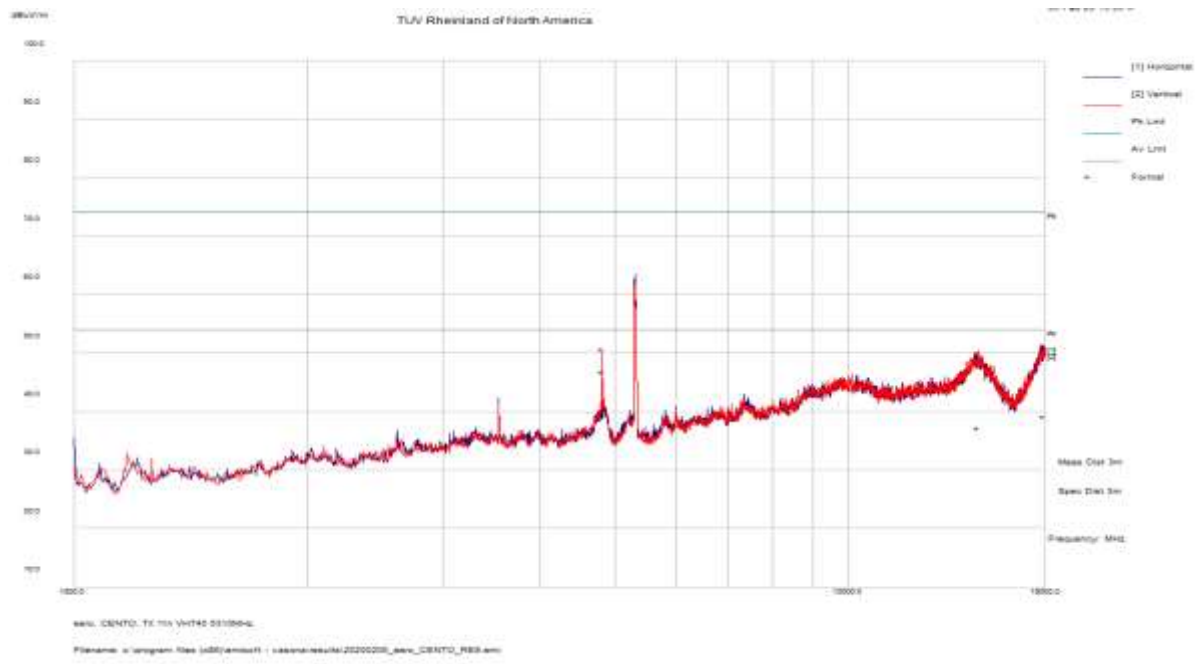
Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions — Tracking # 32060650.001 Page 20 of 39

EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5310 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17876.78	52.40	6.80	-7.74	51.46	Pk	H	230	218	74.00	-22.54
17876.78	40.10	6.80	-7.74	39.16	Avg	H	230	218	54.00	-14.84
4812.48	70.90	3.50	-23.56	50.83	Pk	V	179	132	74.00	-23.17
4812.48	66.91	3.50	-23.56	46.84	Avg	V	179	132	54.00	-7.16
14722.51	55.84	6.19	-12.69	49.35	Pk	V	226	222	74.00	-24.65
14722.51	43.78	6.19	-12.69	37.28	Avg	V	226	222	54.00	-16.72



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

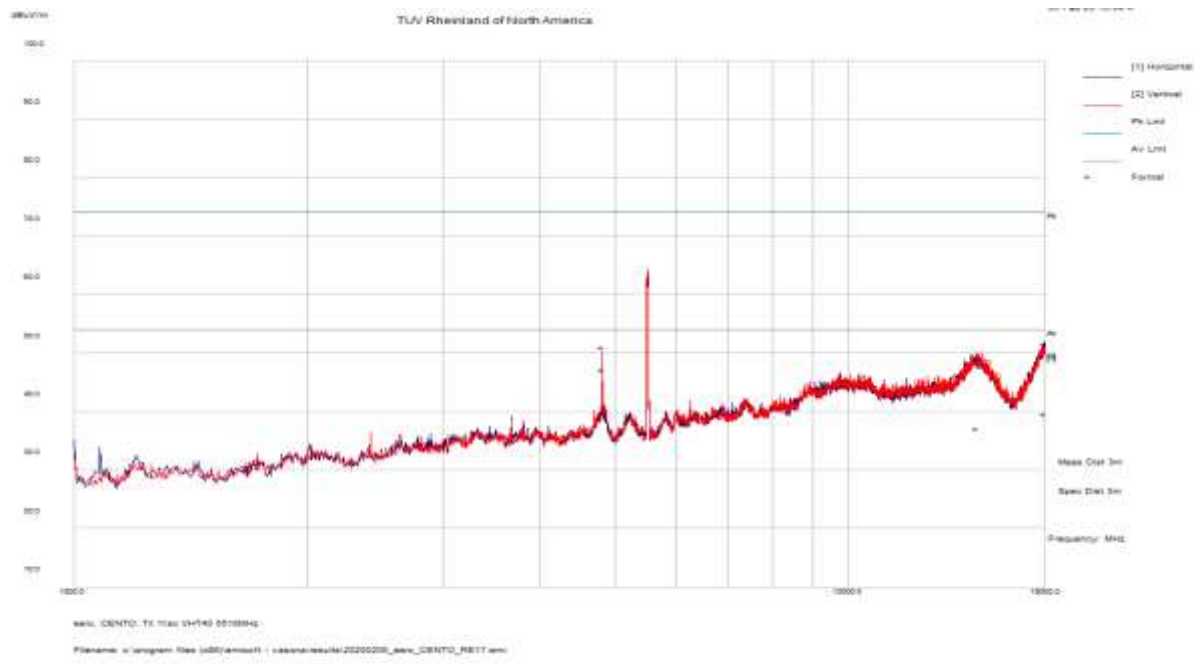
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 21 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5510 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14674.46	55.48	6.15	-12.64	48.99	Pk	H	199	284	74.00	-25.01
14674.46	43.61	6.15	-12.64	37.12	Avg	H	199	284	54.00	-16.89
17935.69	52.59	6.94	-7.97	51.57	Pk	H	250	212	74.00	-22.44
17935.69	40.63	6.94	-7.97	39.60	Avg	H	250	212	54.00	-14.40
4813.03	71.18	3.50	-23.56	51.12	Pk	V	247	134	74.00	-22.88
4813.03	67.27	3.50	-23.56	47.21	Avg	V	247	134	54.00	-6.79



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

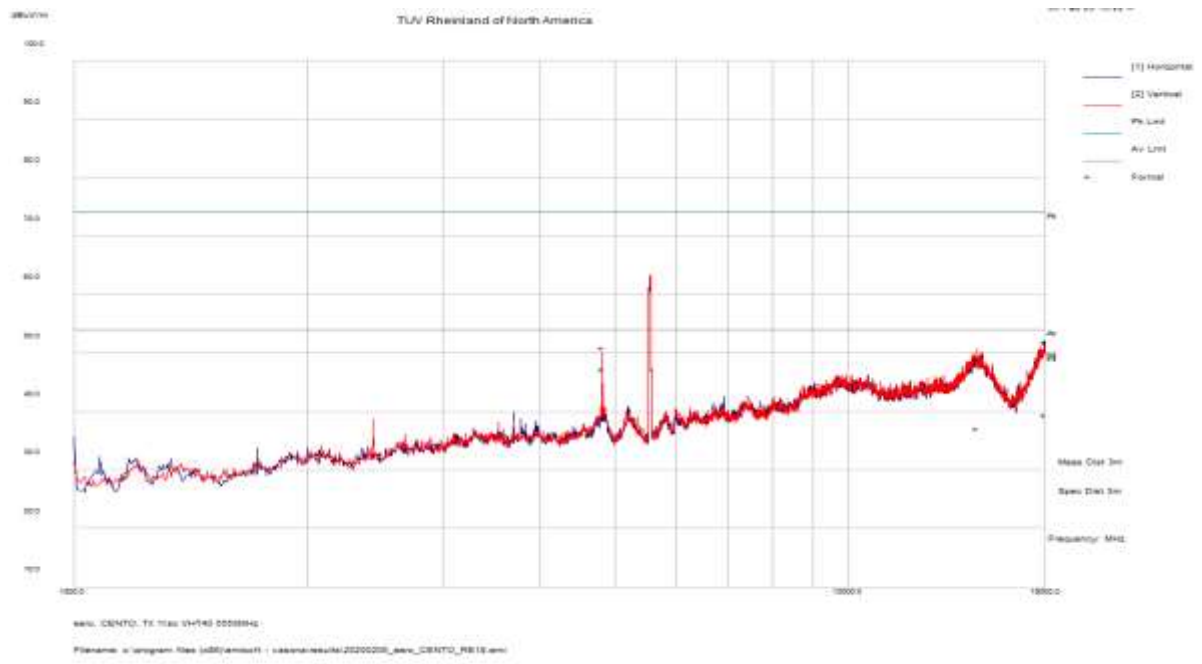
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 22 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5550 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17963.35	52.60	6.97	-7.75	51.82	Pk	H	181	260	74.00	-22.18
17963.35	40.24	6.97	-7.75	39.46	Avg	H	181	260	54.00	-14.54
4813.27	71.02	3.50	-23.56	50.96	Pk	V	116	134	74.00	-23.04
4813.27	67.33	3.50	-23.56	47.27	Avg	V	116	134	54.00	-6.73
14685.59	55.37	6.13	-12.60	48.91	Pk	V	244	354	74.00	-25.09
14685.59	43.63	6.13	-12.60	37.16	Avg	V	244	354	54.00	-16.84



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

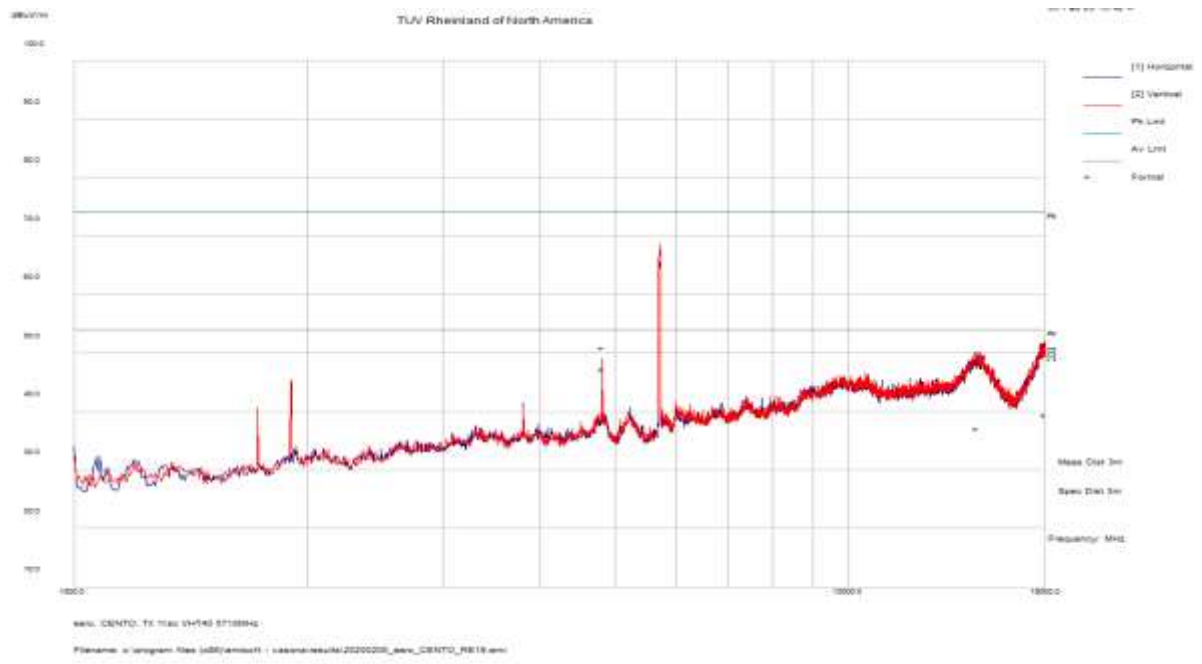
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 23 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5710 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
4813.42	71.01	3.50	-23.56	50.95	Pk	V	206	142	74.00	-23.05
4813.42	67.36	3.50	-23.56	47.30	Avg	V	206	142	54.00	-6.70
14684.10	54.96	6.13	-12.60	48.50	Pk	V	187	226	74.00	-25.50
14684.10	43.59	6.13	-12.60	37.12	Avg	V	187	226	54.00	-16.88
17948.87	52.51	7.00	-7.84	51.66	Pk	V	190	86	74.00	-22.34
17948.87	40.35	7.00	-7.84	39.51	Avg	V	190	86	54.00	-14.50



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

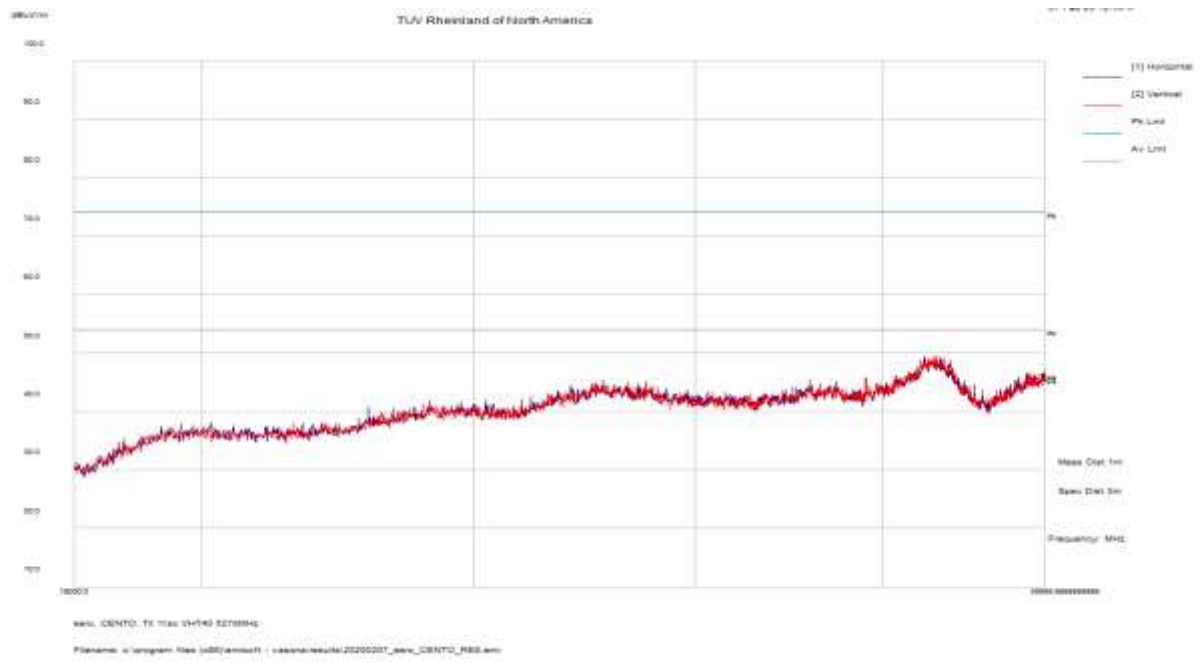
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 24 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5270 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36548.75	44.15	10.23	-4.88	49.51	Pk	V	150	146	54.00	-4.49
39986.25	44.53	10.96	-8.54	46.95	Pk	V	150	208	54.00	-7.05



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

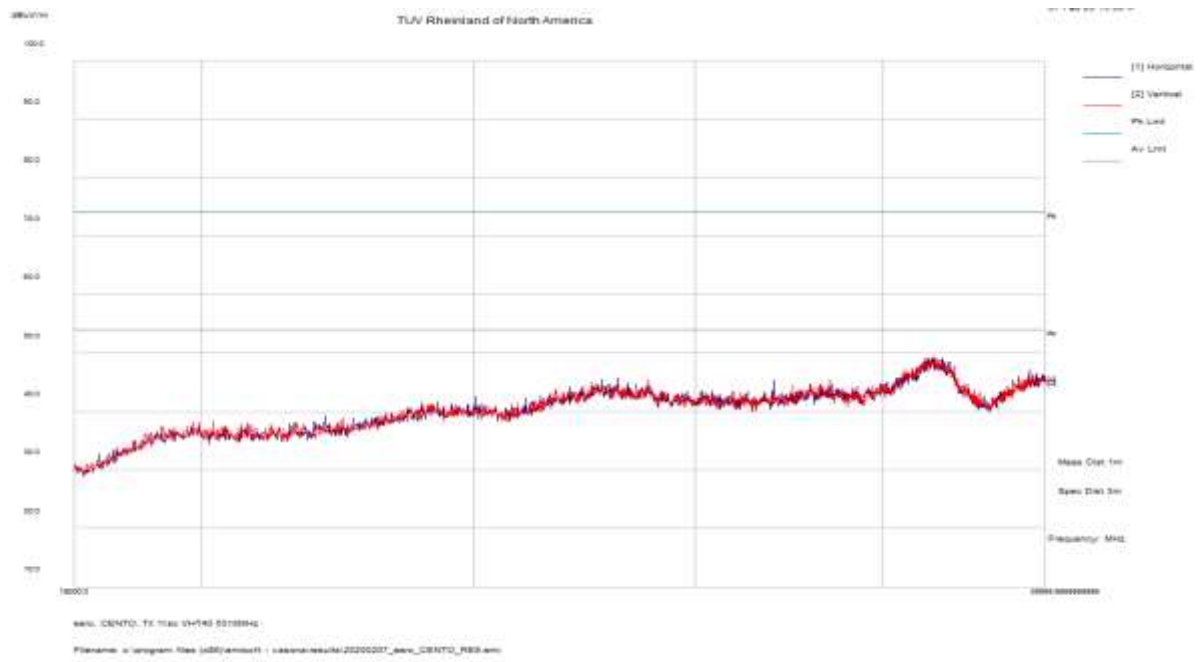
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 25 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5310 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39477.50	44.90	10.85	-8.64	47.11	Pk	H	150	18	54.00	-6.89
36507.50	44.12	10.23	-4.88	49.47	Pk	V	150	98	54.00	-4.53



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

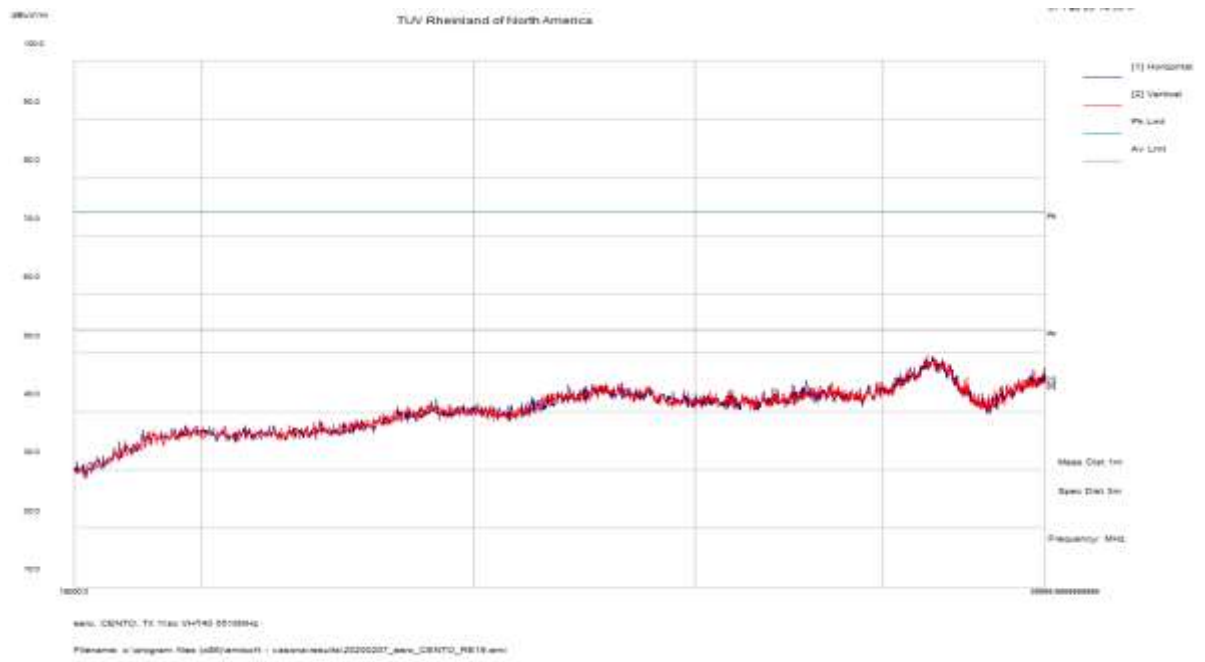
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 26 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5510 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39958.75	44.92	10.94	-8.51	47.35	Pk	H	150	204	54.00	-6.65
36287.50	44.48	10.22	-5.16	49.55	Pk	V	150	58	54.00	-4.45



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

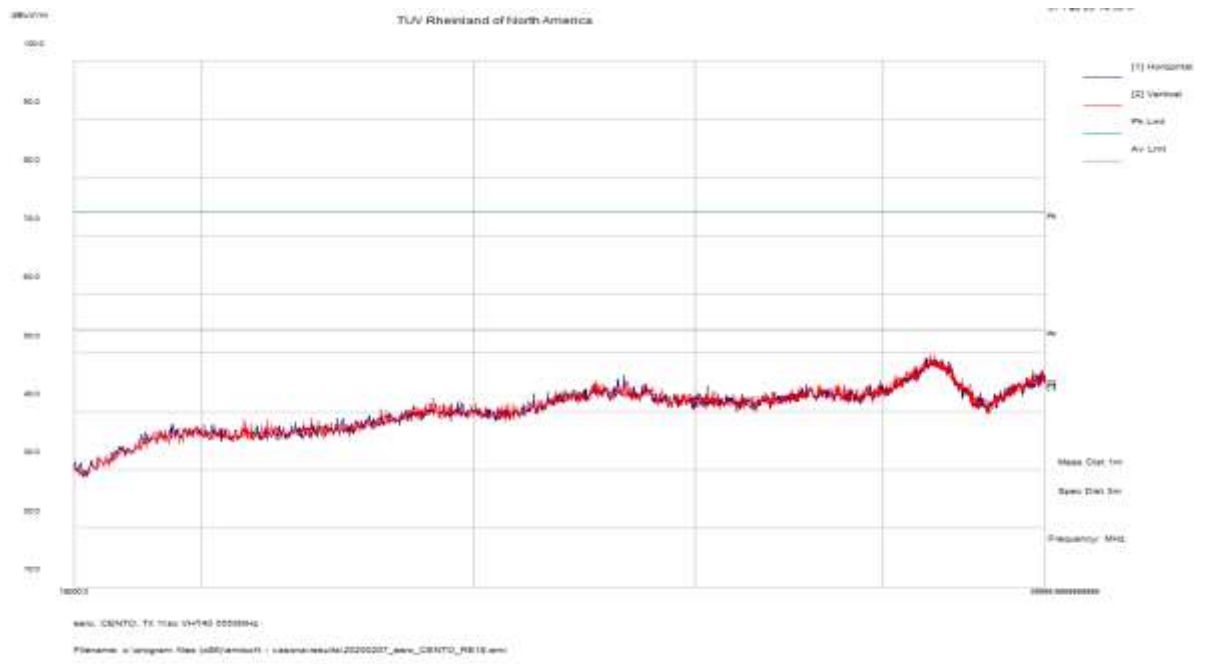
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 27 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5550 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39862.50	44.71	10.88	-8.52	47.07	Pk	H	150	278	54.00	-6.93
36370.00	44.44	10.22	-4.95	49.72	Pk	V	150	67	54.00	-4.28



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

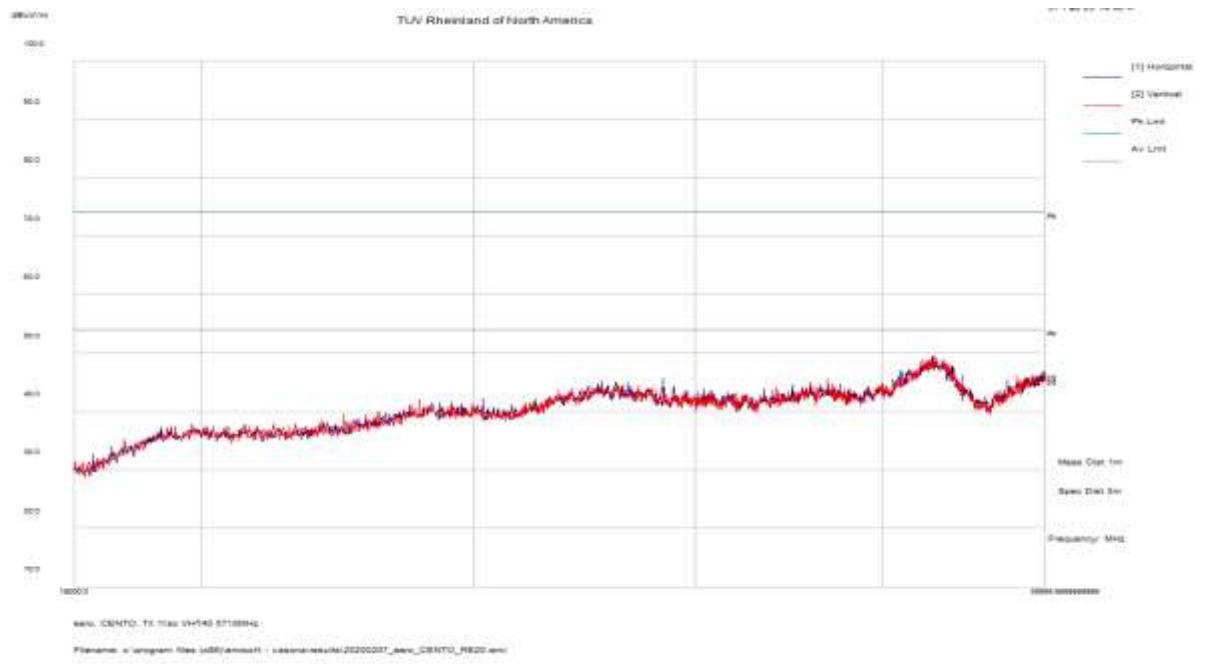
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 28 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT40 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5710 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36480.00	44.07	10.23	-4.88	49.42	Pk	V	150	238	54.00	-4.58
39931.25	44.56	10.92	-8.47	47.02	Pk	V	150	221	54.00	-6.98



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

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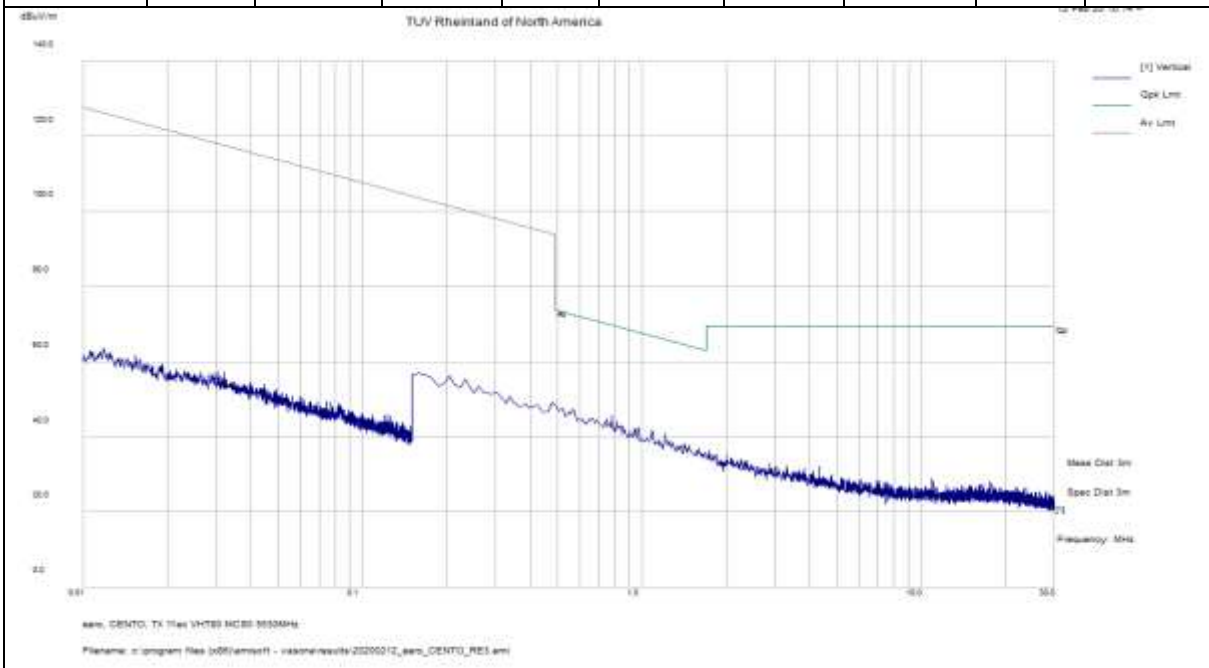
EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5530MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.78	32.97	45.58	Pk	100	195	69.75	-24.17	0	Noise Floor
0.94	29.66	42.44	Pk	100	195	68.15	-25.71	0	Noise Floor
1.42	25.06	37.98	Pk	100	297	64.55	-26.57	0	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

Combined Standard Uncertainty $u_c(y) = \pm 3.2$ dB Expanded Uncertainty $U = ku_c(y)$ $k = 2$ for 95% confidence

Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

SOP 1 Radiated Emissions

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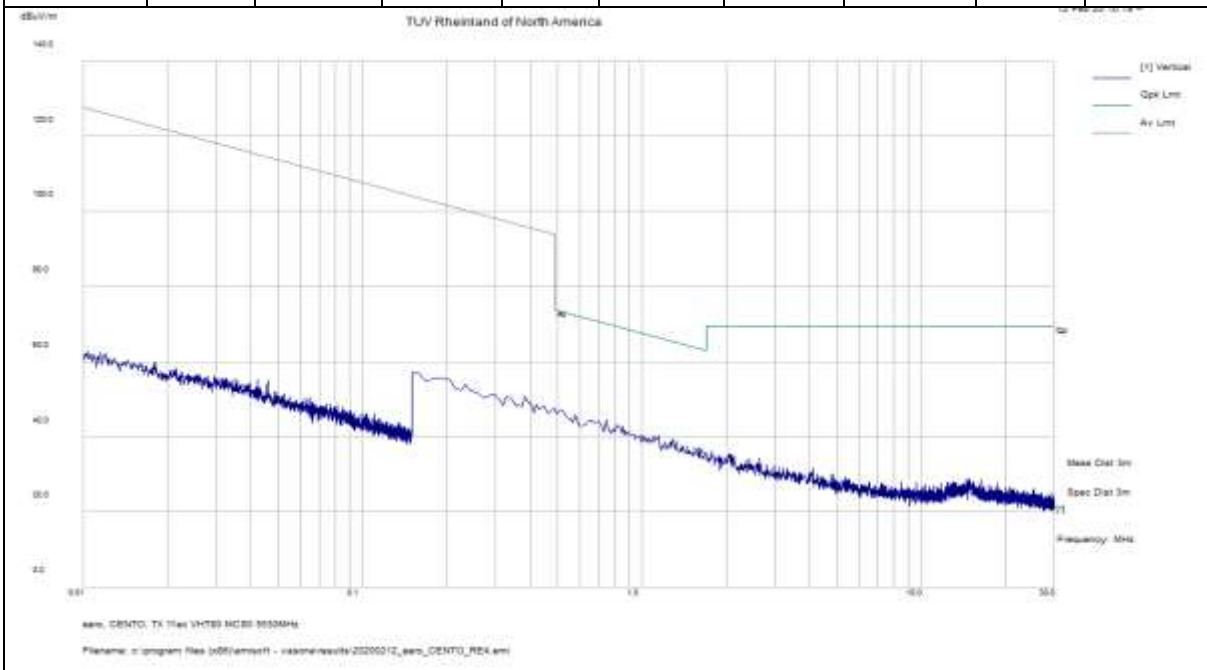
EUT Name	eero	**Date**	February 12, 2020
EUT Model	J010001	**Temp / Hum in**	22°C / 40%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120Vac / 60Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	See Note
Dist/Ant Used	3m – 6502	**Performed by**	Kerwinn Corpuz

9kHz – 30MHz (5530MHz)

Frequency	Raw	Corrected Level	Detector	Height	Turntable	Limit	Margin	Ant	Comment
MHz	dBuV/m	dBuV/m		cm	degree	dBuV/m	dB	degree	
0.58	33.29	45.95	Pk	100	328	72.38	-26.43	90	Noise Floor
1.15	27.42	40.32	Pk	100	110	66.37	-26.05	90	Noise Floor
1.64	23.93	36.86	Pk	100	44	63.33	-26.48	90	Noise Floor



Spec Margin = E-Field QP – Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= Amp Gain + Cable Loss + ANT Factor

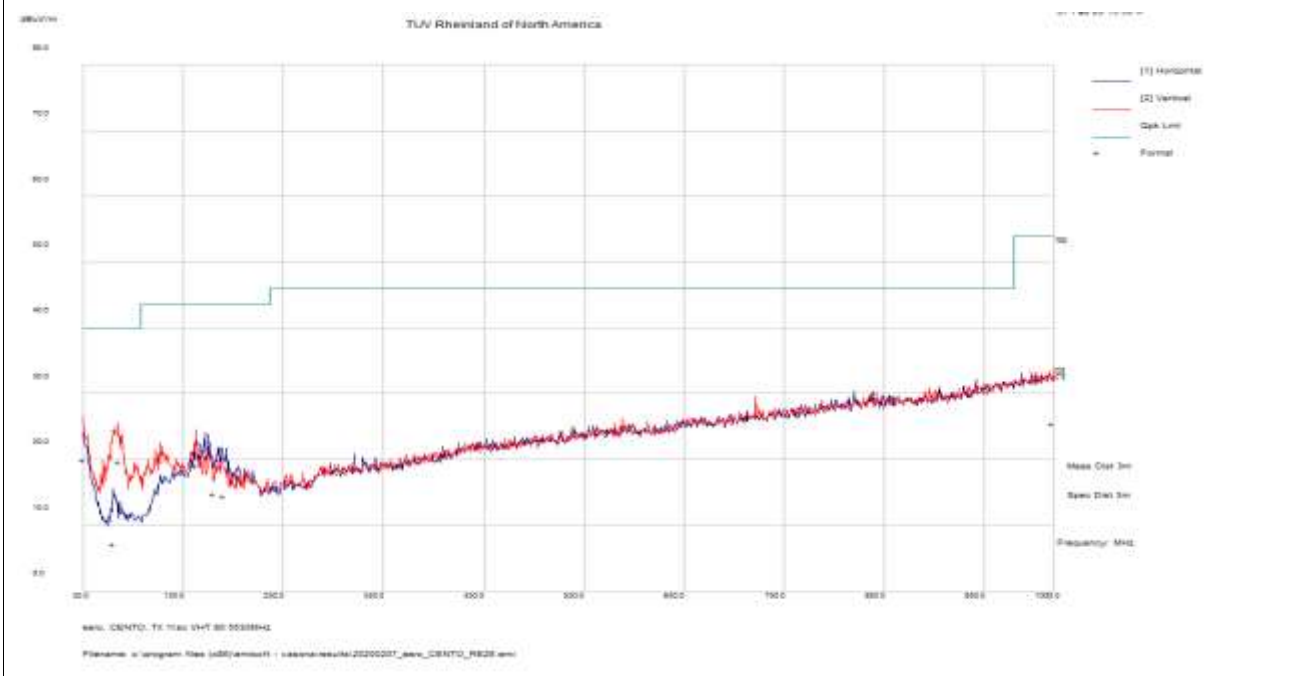
Combined Standard Uncertainty $u_c(y)$ = ± 3.2 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. Far Field distance correction cut off is at 5.92 MHz per ANSI C63.10, therefore 20 dB was added to corrected level.
2. RBW/VBW Setting:
9 kHz to 150 kHz; RBW = 200Hz, VBW = 1kHz
150 kHz to 30 MHz; RBW = 9kHz, VBW = 30kHz
30 MHz to 1000 MHz; RBW = 120kHz, VBW = 300kHz
3. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
4. UNII2A and UNII2C shares the same chip.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 31 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 43%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	120 kHz/ 300 kHz
Dist/Ant Used	3m – JB3	**Performed by**	Justin Clark

30 MHz – 1 GHz Transmit at 5530 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
60.84	25.05	2.68	-20.61	7.12	QP	H	245	268	40.00	-32.88
159.99	27.26	3.14	-15.60	14.80	QP	H	197	103	43.50	-28.70
169.70	27.42	3.19	-16.26	14.34	QP	H	152	90	43.50	-29.16
30.02	23.65	2.49	-6.23	19.90	QP	V	223	239	40.00	-20.10
66.18	37.13	2.72	-20.19	19.66	QP	V	134	263	40.00	-20.34
142.71	31.24	3.07	-15.19	19.12	QP	V	106	205	43.50	-24.38



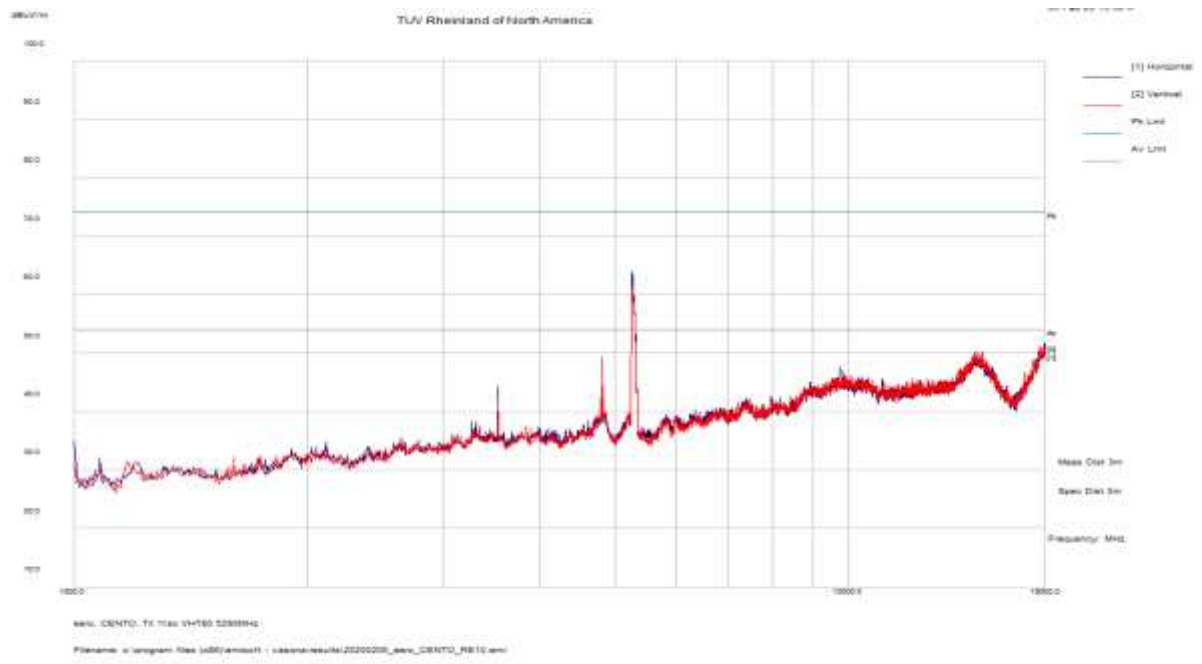
Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Note: 1. Worst case was observed at low channel, UNII2C band of 802.11a 6Mbps.
2. UNII2A and UNII2C shares the same chip.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 32 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5290 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17993.58	52.37	6.91	-7.76	51.53	Pk	H	143	164	74.00	-22.47
17993.58	40.16	6.91	-7.76	39.32	Avg	H	143	164	54.00	-14.68
4812.83	70.44	3.50	-23.56	50.38	Pk	V	118	132	74.00	-23.62
4812.83	65.82	3.50	-23.56	45.76	Avg	V	118	132	54.00	-8.24
14579.36	55.92	6.18	-13.14	48.96	Pk	V	177	54	74.00	-25.04
14579.36	44.36	6.18	-13.14	37.41	Avg	V	177	54	54.00	-16.59



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

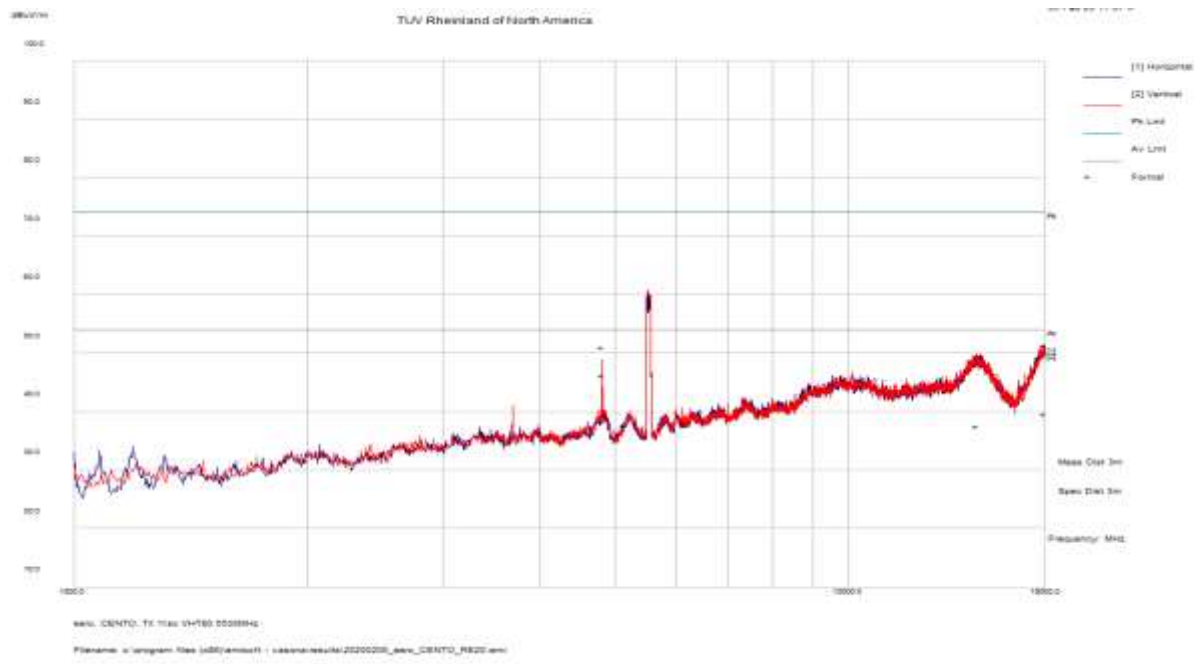
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 33 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5530 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
17930.27	52.42	6.92	-8.02	51.32	Pk	H	111	353	74.00	-22.68
17930.27	40.67	6.92	-8.02	39.57	Avg	H	111	353	54.00	-14.43
4813.74	71.06	3.50	-23.56	51.00	Pk	V	164	142	74.00	-23.00
4813.74	66.26	3.50	-23.56	46.20	Avg	V	164	142	54.00	-7.80
14663.15	55.93	6.17	-12.72	49.39	Pk	V	270	192	74.00	-24.61
14663.15	44.06	6.17	-12.72	37.52	Avg	V	270	192	54.00	-16.48



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

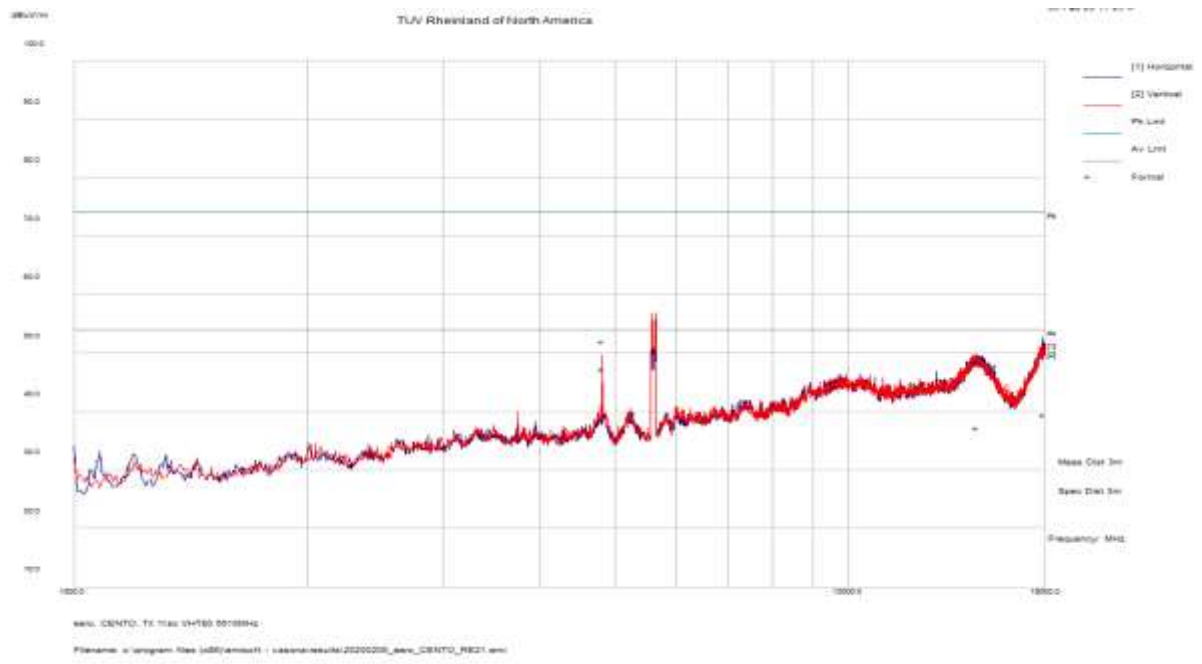
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 34 of 39	
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5610 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14683.20	54.97	6.13	-12.60	48.51	Pk	H	237	206	74.00	-25.49
14683.20	43.72	6.13	-12.60	37.26	Avg	H	237	206	54.00	-16.74
17884.26	51.84	6.80	-7.76	50.88	Pk	H	182	290	74.00	-23.12
17884.26	40.40	6.80	-7.76	39.44	Avg	H	182	290	54.00	-14.56
4813.88	72.05	3.50	-23.56	51.99	Pk	V	268	136	74.00	-22.01
4813.88	67.38	3.50	-23.56	47.32	Avg	V	268	136	54.00	-6.68



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

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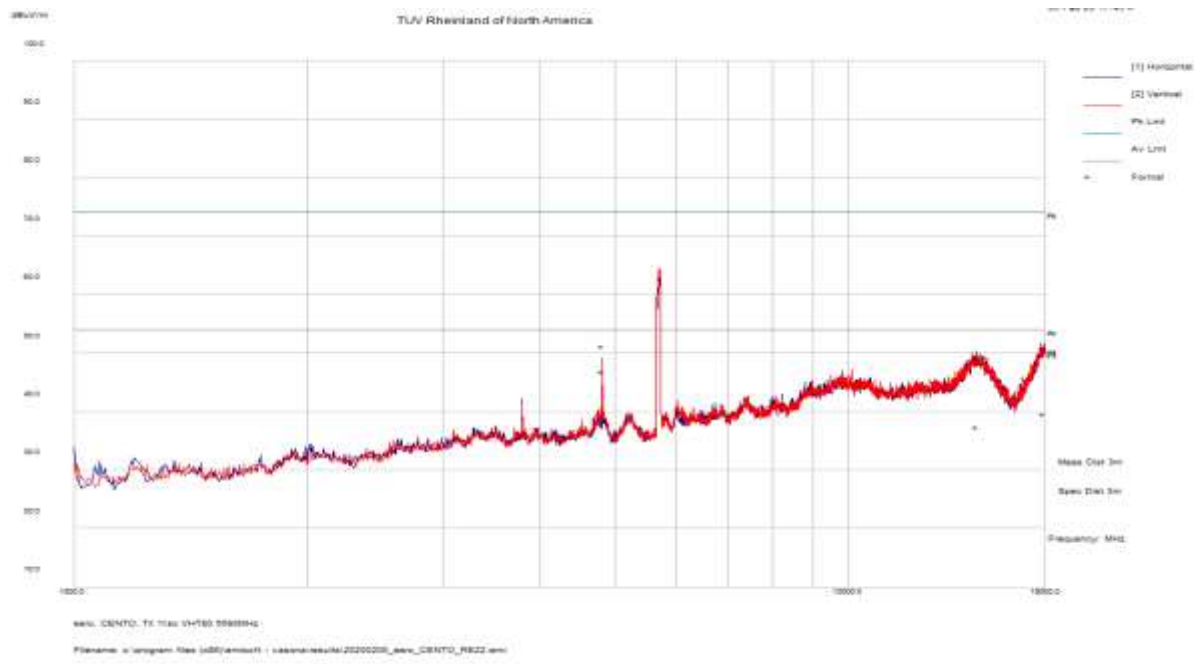
EUT Name	eero	**Date**	February 5, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 37%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m – EMCO 3115	**Performed by**	Kerwinn Corpuz

1 GHz – 18 GHz Transmit at 5690 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
14664.27	55.60	6.17	-12.71	49.06	Pk	H	128	211	74.00	-24.94
14664.27	43.91	6.17	-12.71	37.37	Avg	H	128	211	54.00	-16.63
17886.91	51.92	6.80	-7.78	50.94	Pk	H	213	162	74.00	-23.06
17886.91	40.51	6.80	-7.78	39.53	Avg	H	213	162	54.00	-14.47
4814.00	71.26	3.50	-23.56	51.20	Pk	V	203	138	74.00	-22.80
4814.00	66.92	3.50	-23.56	46.86	Avg	V	203	138	54.00	-7.14



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

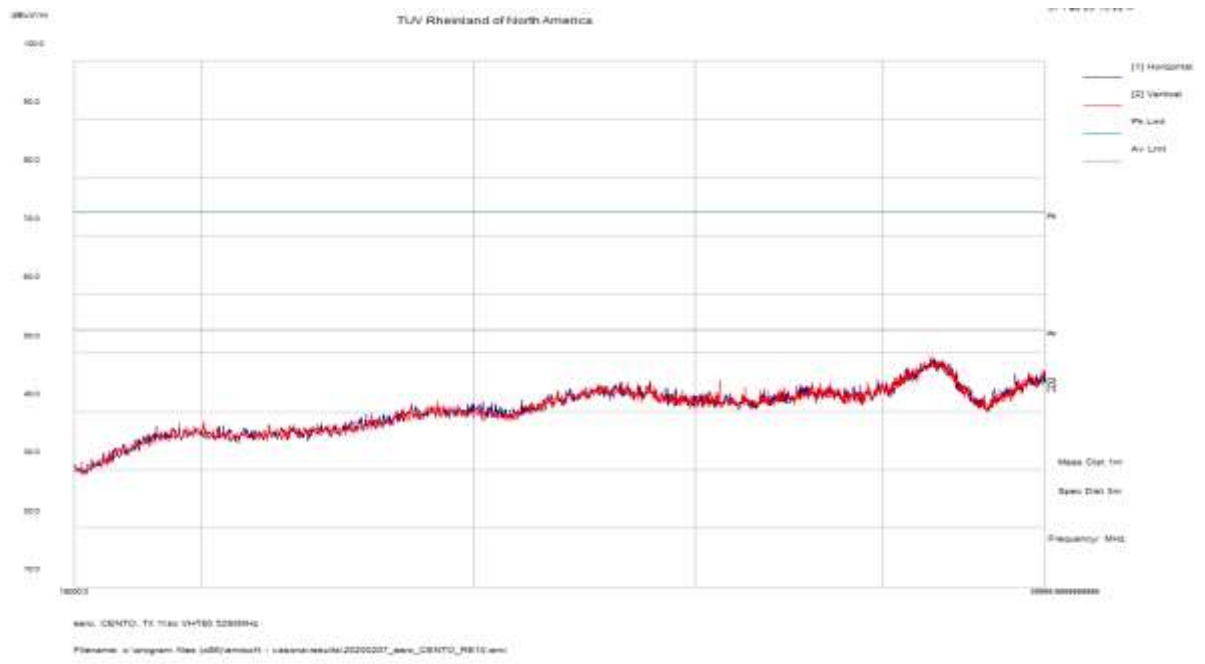
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. All emissions met restricted band limits.
2. Emission above the average limit is the fundamental.
3. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 36 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5290 MHz – UNII2A

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36452.50	43.97	10.23	-4.87	49.32	Pk	V	150	207	54.00	-4.68
39890.00	44.62	10.89	-8.45	47.06	Pk	V	150	325	54.00	-6.94



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

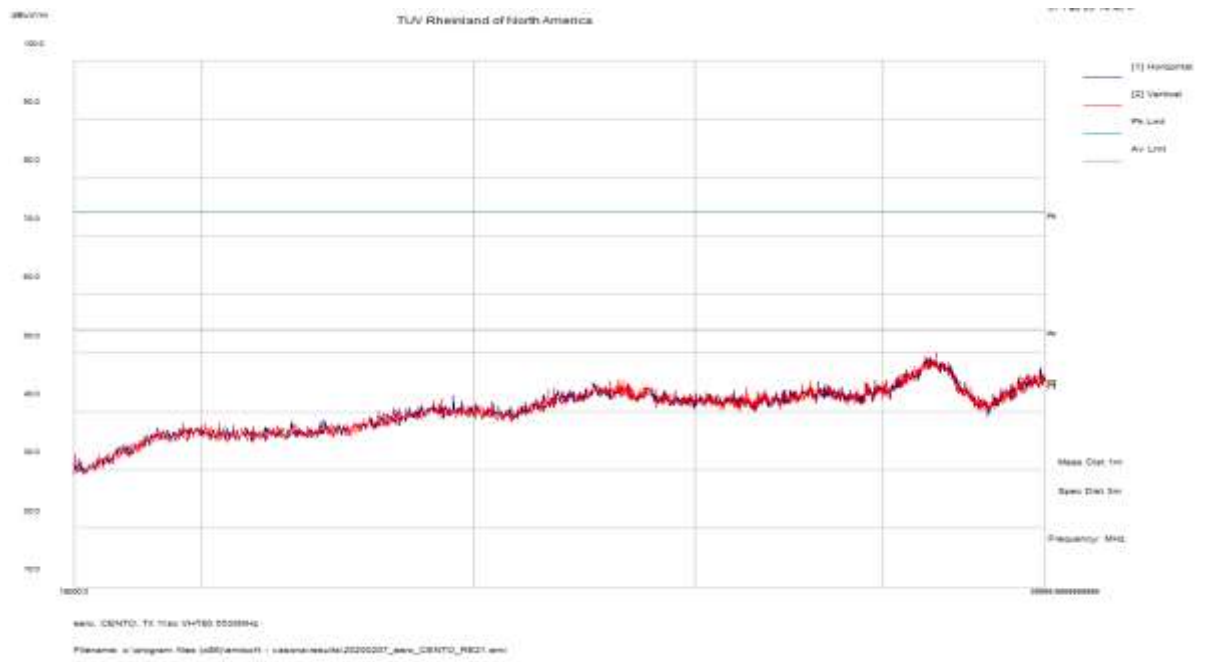
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 37 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5530 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39835.00	45.30	10.86	-8.59	47.57	Pk	H	150	45	54.00	-6.43
36576.25	44.63	10.23	-4.87	49.98	Pk	V	150	245	54.00	-4.02



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

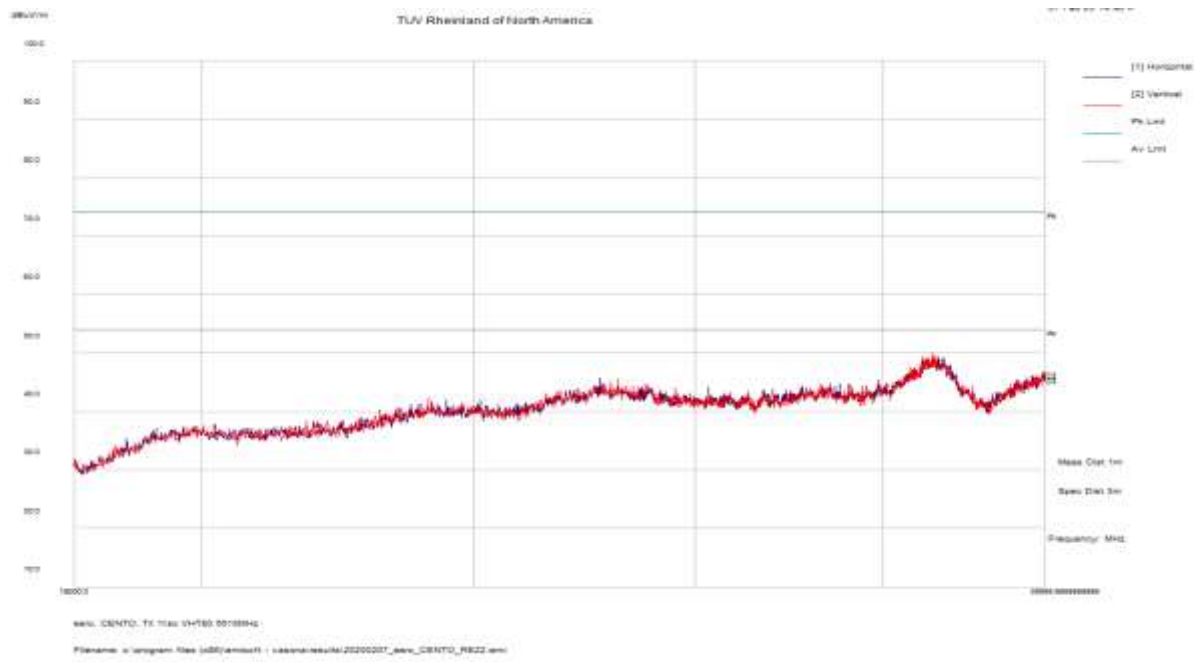
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 38 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5610 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
39972.50	44.40	10.95	-8.52	46.83	Pk	H	150	139	54.00	-7.17
36466.25	44.62	10.23	-4.88	49.97	Pk	V	150	6	54.00	-4.03



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

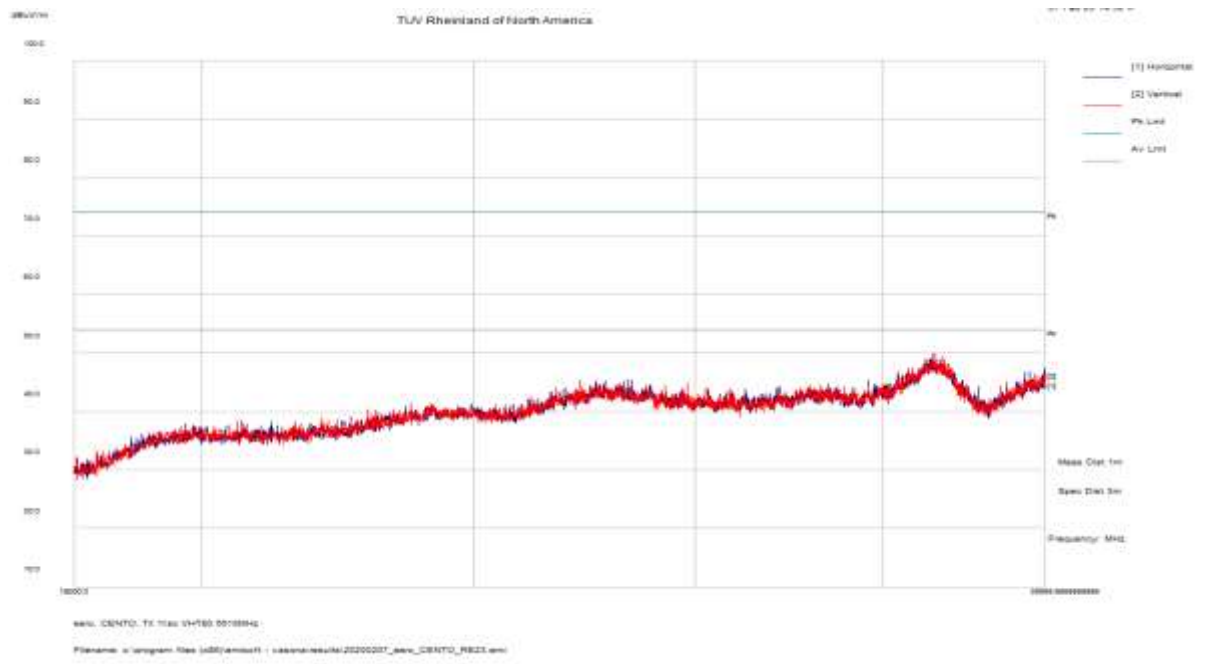
Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

SOP 1 Radiated Emissions		Tracking # 32060650.001 Page 39 of 39	
EUT Name	eero	**Date**	February 7, 2020
EUT Model	J010001	**Temp / Hum in**	22° C / 39%rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11ac VHT80 at MCS0 / All chains	**Line AC / Freq**	120 Vac / 60 Hz
Standard	CFR47 Part 15 Subpart E, RSS-247, RSS-GEN	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	1m – AHA 840	**Performed by**	Kerwinn Corpuz

18 GHz – 40 GHz Transmit at 5690 MHz – UNII2C

Frequency	Raw	Cable Loss	AF	Level	Detector	Polarity	Height	Azimuth	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m		H/V	cm	deg	dBuV/m	dB
36528.13	44.49	10.23	-4.88	49.84	Pk	H	150	337	54.00	-4.16
39951.88	44.92	10.94	-8.50	47.37	Pk	H	150	260	54.00	-6.64



Spec Margin = E-Field QP - Limit, E-Field QP = FIM QP+ Total CF ± Uncertainty
Total CF= AF+ Cable Loss AF= Antenna factor + Preamp

Combined Standard Uncertainty $u_c(y)$ = ± 4.52 dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Note: 1. No significant emissions found. Detected spectrum noise floor.
2. To reduce complexity and bulkiness of the report worst case plots are placed in the report.

4.5 AC Conducted Emissions

Testing was performed in accordance with ANSI C63.4: 2014. These test methods are listed under the laboratory's A2LA Scope of Accreditation.

This test measures the levels emanating from the EUT's AC input port, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

The AC conducted emissions of equipment under test shall not exceed the values in CFR47 Part 15.207 and RSS GEN Sect. 8.8.

4.5.1 Test Methodology

A test program that controls instrumentation and data logging was used to automate the AC Power Line Conducted emission test procedure. The frequency range of interest was divided into sub-ranges such as to yield a frequency resolution of 9 kHz. Each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a set of 50µH / 50Ω LISNs.

Testing is performed in Lab 5. The setup photographs clearly identify which site was used. The vertical ground plane used in the semi-anechoic chamber is a 2m x 2m solid aluminum frame and panel, and it is bonded to the horizontal ground plane.

In the case of tabletop equipment, the EUT is placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane and 40cm from a vertical ground reference plane. The rear of the EUT was positioned flush with the backside of the table and directly over the LISNs. The power and I/O cables were routed over the edge of the table and bundled approximately 40cm from the ground plane. Support equipment was powered from a separate LISN.

4.5.1.1 Deviations

There were no deviations from this test methodology.

4.5.2 Test Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

The EUT uses the same radio chip for all U-NII bands.

Table 13: AC Conducted Emissions – Test Results

Test Date: February 10, 2020	**Tested By:** Justin Clark
Antenna Type: Flex PCB	**Power Level:** See Test Plan
AC Power: 120 Vac/60 Hz	**Configuration:** Tabletop
Ambient Temperature: 23° C	**Relative Humidity:** 41% RH

Configuration	Frequency Range	Test Result
Line 1 (Live)	0.15 to 30 MHz	Pass
Line 2 (Neutral)	0.15 to 30 MHz	Pass

SOP 2 Conducted Emissions

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EUT Name	eero	**Date**	February 10, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 41% rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a TX	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207 and RSS Gen	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #5 /Com-Power, Line 1	**Performed by**	Justin Clark

Frequency	Raw	Limiter	Ins. Loss	Level	Detector	Line	Limit	Margin	Result
MHz	dBuV	dB	dB	dBuV			dBuV	dB	
0.161	44.23	9.95	0.09	54.26	QP	Live	65.40	-11.14	Pass
0.161	27.97	9.95	0.09	38.01	Ave	Live	55.40	-17.40	Pass
0.543	32.55	9.98	0.04	42.57	QP	Live	56.00	-13.43	Pass
0.543	18.39	9.98	0.04	28.41	Ave	Live	46.00	-17.59	Pass
0.202	40.50	9.95	0.07	50.52	QP	Live	63.51	-12.99	Pass
0.202	23.87	9.95	0.07	33.89	Ave	Live	53.51	-19.62	Pass
0.479	31.12	9.98	0.04	41.14	QP	Live	56.36	-15.22	Pass
0.479	14.92	9.98	0.04	24.94	Ave	Live	46.36	-21.41	Pass
0.444	30.95	9.97	0.04	40.97	QP	Live	57.00	-16.03	Pass
0.444	14.24	9.97	0.04	24.26	Ave	Live	47.00	-22.74	Pass
0.242	35.60	9.95	0.06	45.62	QP	Live	62.04	-16.42	Pass
0.242	17.88	9.95	0.06	27.90	Ave	Live	52.04	-24.14	Pass

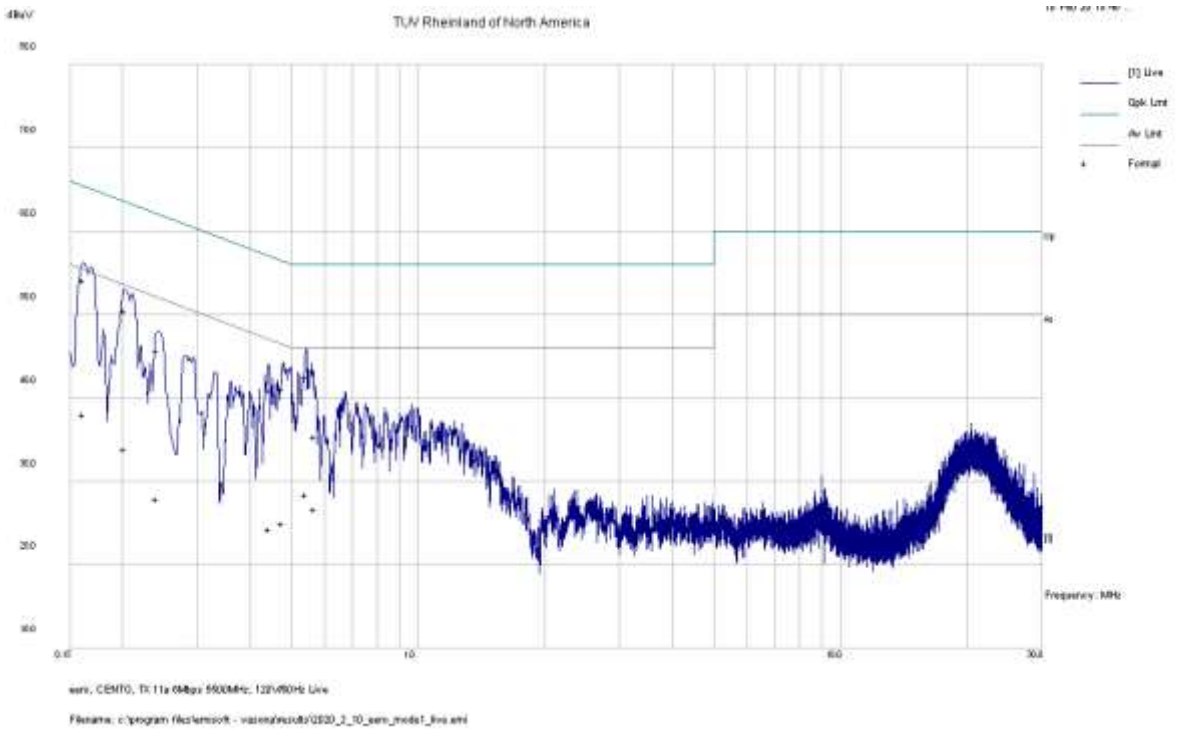
Spec Margin = QP./Ave. - Limit, ± Uncertainty

Combined Standard Uncertainty $u_c(y) = \pm 1.2$ dB Expanded Uncertainty $U = ku_c(y)$ $k = 2$ for 95% confidence

Notes: The EUT was set as the tabletop equipment.

SOP 2 Conducted Emissions		Tracking # 32060650.001 Page 2 of 4	
EUT Name	eero	**Date**	February 10, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 41% rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a TX	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207 and RSS Gen	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #5 /Com-Power, Line 1	**Performed by**	Justin Clark

150 kHz to 30 MHz Plot for Line 1 (Live)



Note: Met FCC Class B limit.

SOP 2 Conducted Emissions

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EUT Name	eero	**Date**	February 10, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 41% rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a TX	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207 and RSS Gen	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #5 /Com-Power, Line 1	**Performed by**	Justin Clark

Frequency	Raw	Limiter	Ins. Loss	Level	Detector	Line	Limit	Margin	Result
MHz	dBuV	dB	dB	dBuV			dBuV	dB	
0.163	42.76	9.95	0.09	52.80	QP	Neutral	65.31	-12.51	Pass
0.163	28.27	9.95	0.09	38.31	Ave	Neutral	55.31	-17.00	Pass
0.545	30.50	9.98	0.04	40.52	QP	Neutral	56.00	-15.48	Pass
0.545	17.58	9.98	0.04	27.60	Ave	Neutral	46.00	-18.40	Pass
0.212	36.40	9.95	0.07	46.41	QP	Neutral	63.14	-16.72	Pass
0.212	19.18	9.95	0.07	29.20	Ave	Neutral	53.14	-23.94	Pass
0.442	30.27	9.97	0.04	40.28	QP	Neutral	57.03	-16.75	Pass
0.442	17.40	9.97	0.04	27.42	Ave	Neutral	47.03	-19.61	Pass
0.242	35.65	9.95	0.06	45.66	QP	Neutral	62.04	-16.38	Pass
0.242	18.11	9.95	0.06	28.13	Ave	Neutral	52.04	-23.91	Pass
0.556	27.93	9.98	0.04	37.95	QP	Neutral	56.00	-18.05	Pass
0.556	17.27	9.98	0.04	27.29	Ave	Neutral	46.00	-18.71	Pass

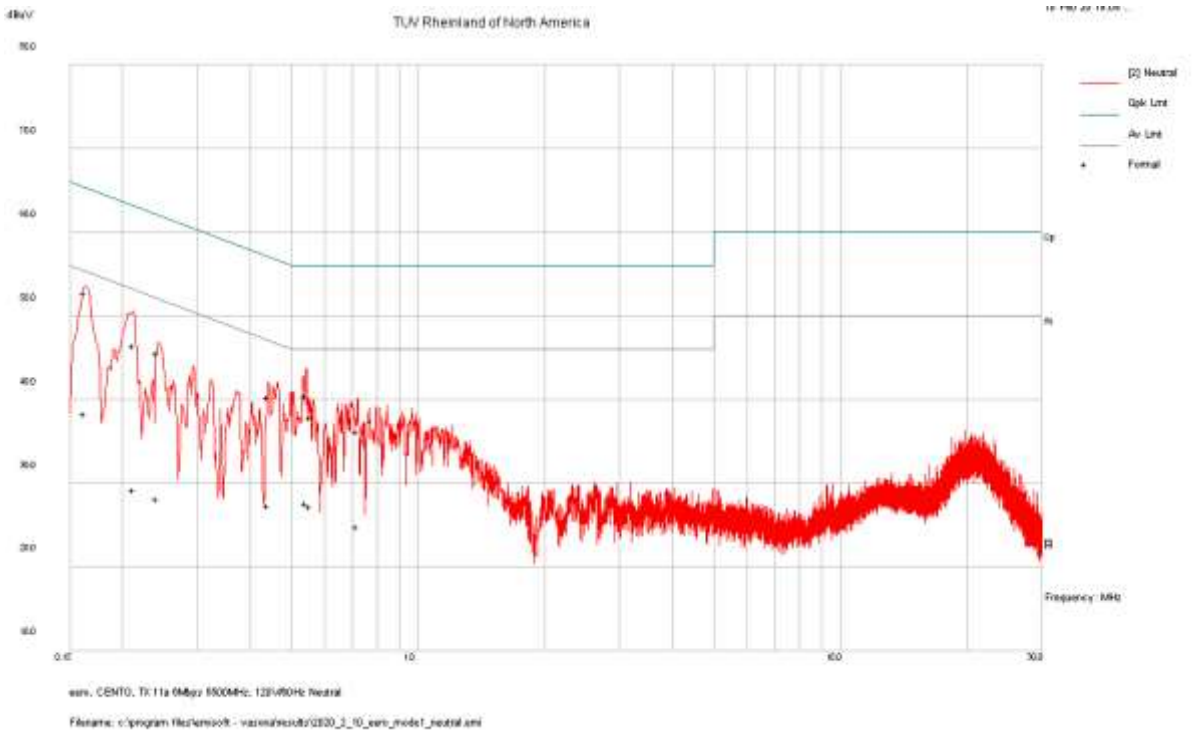
Spec Margin = QP./Ave. - Limit, ± Uncertainty

Combined Standard Uncertainty $u_c(y) = \pm 1.2$ dB Expanded Uncertainty $U = ku_c(y)$ $k = 2$ for 95% confidence

Notes: The EUT was set as the tabletop equipment.

SOP 2 Conducted Emissions		Tracking # 32060650.001 Page 4 of 4	
EUT Name	eero	**Date**	February 10, 2020
EUT Model	J010001	**Temp / Hum in**	23° C / 41% rh
EUT Serial	K96K-0003-SEAG-9HN9	**Temp / Hum out**	N/A
EUT Config.	802.11a TX	**Line AC / Freq**	120Vac/60Hz
Standard	CFR47 Part 15.207 and RSS Gen	**RBW / VBW**	9 kHz / 30 kHz
Lab/LISN	Lab #5 /Com-Power, Line 1	**Performed by**	Justin Clark

150 kHz to 30 MHz Plot for Line 2 (Neutral)



Note: Met FCC Class B Limit.

4.6 Frequency Stability

In accordance with 47 CFR Part 15.407(g) and RSS GEN Sect. 6.11 the frequency stability of U-NII devices must be such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Per 47 CFR Part 15.31 (e) intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery

4.6.1 Test Methodology

The manufacturer of the equipment is responsible for ensuring that the frequency stability is such that emissions are always maintained within the band of operation under all conditions. This test performs according to ANSI C63.10-2013 Section 6.8

4.6.2 Manufacturer Declaration

Eero LLC declares that the J010001 WiFi Module is compliant to CFR47 Part 15.31(e), 15.407(g) and RSS GEN Sect. 6.11 requirements. The J010001 maintains the fundamental emission within the bands of operation under all conditions of normal operation as specified in the user's manual.

5 Test Equipment List

5.1 Equipment List

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal mm/dd/yyyy	Next Cal mm/dd/yyyy
Loop Antenna	EMCO	6502	00062531	07/01/2019	07/01/2021
Bilog Antenna	Sunol Sciences	JB3	A020502	03/27/2018	03/27/2020
Horn Antenna	Sunol Sciences	3115	9211-3969	06/20/2019	06/20/2021
Antenna (18-40 GHz)	Com-Power	AHA-840	105005	09/03/2019	09/03/2021
Receiver	Agilent	N9038A	MY52260210	01/16/2019	01/16/2020
Spectrum Analyzer	Agilent	N9030A	MY52350885	10/26/2018	10/26/2020
EMI Receiver	Rohde & Schwarz	ESIB40	100180	09/20/2019	09/20/2020
Amplifier	Sonoma Instruments	310	185516	01/15/2020	01/15/2021
Amplifier	Miteq	TTA1800-30-HG	184252	01/15/2020	01/15/2021
Power Meter	Agilent	E4418A	MY45103902	01/17/2020	01/17/2021
Power Sensor	Hewlett Packard	8482A	US37292296	01/16/2020	01/16/2021
High Pass Filter	Wainwright	WHJE5-915.4-995-4000-6055	001	See Note	
Notch Filter	Micro-Tronics	BRM50703	011	See Note	
Notch Filter	Micro-Tronics	BRM50716	003	See Note	
Signal Generator	Anritsu	MG3694A	42803	03/20/2018	03/20/2020
Signal Generator	Rohde & Schwarz	SMF100A	1167.0000K02	07/10/2018	07/10/2020
Signal Generator	Rohde & Schwarz	SMBV100A	1407.6004K02	07/10/2018	07/10/2020

* Calibration of equipment past due for re-calibration will be performed expeditiously. If any equipment is found to be out of tolerance at that time, affected customers will be notified accordingly.

Note: Equipment is characterized before use.

6 EMC Test Plan

6.1 Introduction

This section provides a description of the Equipment Under Test (EUT), configurations, operating conditions, and performance acceptance criteria. It is an overview of information provided by the manufacturer so that the test laboratory may perform the requested testing.

6.2 Customer

Table 14: Customer Information

Company Name	eero LLC
Address	660 3rd Street
City, State, Zip	San Francisco, CA 94107
Country	USA
Phone	+1 415-738-7972

Table 15: Technical Contact Information

Name	eero LLC
E-mail	cliff@eero.com
Phone	+1 415-738-7972

6.3 Equipment Under Test (EUT)

Table 16: EUT Specifications

EUT Specifications	
AC Input	100-240V AC, 50 – 60 Hz
Environment	Indoor
Operating Temperature Range:	0 to 35 degrees C
Multiple Feeds:	☐ Yes and how many ☒ No
Product Marketing Name (PMN)	J010001
Hardware Version Identification Number (HVIN)	J010001
Firmware Version Identification Number (FVIN)	
802.11-radio module	
Operating Mode	802.11a, 802.11n (HT20, HT40), 802.11ac (VHT20, VHT40,VHT80)
Transmitter Frequency Band	5.250 GHz – 5.350 GHz and 5.470 – 5.725 GHz, U-NII-2 band
Max. Rated Power Output	See Channel Planning Table.
Power Setting @ Operating Channel	See Channel Planning Table.
Antenna Type	Qty 2. Flex PCB antennas at 5.25-5.35 GHz and 5.47-5.725GHz. See Section 3.4.1 for details
Antenna Gain	See Section 3.4.1
Modulation Type	☐ AM ☐ FM ☒ DSSS ☒ OFDM ☐ Other describe:
Data Rate	802.11a: 4 Spatial Streams: 6, 9,12, 18, 24, 36, 48, 54 Mbps 802.11n HT20: 4 Spatial Streams: 26, 52, 78, 104, 156, 208, 234, 260 Mbps 802.11n HT40: 4 Spatial Streams: 54, 108, 162, 216, 324, 432, 486, 540 Mbps 802.11ac VHT20: 4 Spatial Streams: 26, 52, 78, 104, 156, 208, 234, 260, 312 Mbps 802.11ac VHT40: 4 Spatial Streams: 54, 108, 162, 216, 324, 432, 486, 540, 648, 720 Mbps 802.11ac VHT80: 4 Spatial Streams: 117, 234, 351, 468, 702, 936, 1053, 1170, 1404, 1560 Mbps
TX/RX Chain (s)	MIMO (2x2)

EUT Specifications	
Directional Gain Type	☒ Correlated ☒ Beam-Forming ☐ Other describe:
Type of Equipment	☒ Table Top ☐ Wall-mount ☐ Floor standing cabinet ☐ Other:
Note: 1. All two chains will be on / transmitted at all time. 2.This report only documents the radio characteristics for 5250 – 5350 MHz and 5470 – 5725 MHz; UNII2 band.	

Table 17: EUT Channel Power Specifications (FCC)

No.	Freq. (MHz)	Target Power Value dBm										
		Non-Beamforming Mode						Beamforming Mode				
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80	802.11n HT20	802.11n HT40	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
		Power Setting (TP)										
52	5260	21	21		21			17		17		
54	5270			21		21			18.5		18.5	
58	5290						18.5					17
60	5300	21	21		21			17		17		
62	5310			17.5		17.5			16.5		16.5	
64	5320	19	19		19			17		17		
100	5500	18.5	18.5		18.5			17		17		
102	5510			17.5		17.5			16.5		16.5	
106	5530						18.5					17
118	5550			17.5		17.5			18.5		18.5	
120	5520	18.5	18.5		18.5			17		17		
122	5610						20.5					19
138	5690						21.5					19
142	5710			21		21			18.5		18.5	
144	5720	21	21		21			17		17		

Note: The adjusted power target values are updated at the evaluated frequencies.

Table 18: EUT Channel Power Specifications (RSS)

No.	Freq. (MHz)	Target Power Value dBm										
		Non-Beamforming Mode						Beamforming Mode				
		802.11a	802.11n HT20	802.11n HT40	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80	802.11n HT20	802.11n HT40	802.11ac VHT20	802.11ac VHT40	802.11ac VHT80
		Power Setting (TP)										
52	5260	18	18		18			13		13		
54	5270			18		18			12.5		12.5	
58	5290						18.5					13
60	5300	18.5	18.5		18.5			13		13		
62	5310			17.5		17.5			13		13	
64	5320	19	19		19			13.5		13.5		
100	5500	18.5	18.5		18.5			17		17		
102	5510			17.5		17.5			16.5		16.5	
106	5530						18.5					17
118	5550			17.5		17.5			18.5		18.5	
120	5520	18.5	18.5		18.5			17		17		
122	5610						20.5					19
138	5690						21.5					19
142	5710			21		21			18.5		18.5	
144	5720	21	21		21			17		17		

Note: The adjusted power target values are updated at the evaluated frequencies.

Table 19: Interface Specifications

Interface Type	Cabled with what type of cable?	Is the cable shielded?	Maximum potential length of the cable?	Metallic (M), Coax (C), Fiber (F), or Not Applicable?
Ethernet	RJ45	☒ No	☒ Metric: 2 m	☐ N/A

Table 20: Supported Equipment

Equipment	Manufacturer	Model	Serial	Used for
Laptop	LENOVO	b50-45	CB34571296	Setup EUT operating channel
Note: None.				

Table 21: Description of Sample used for Testing

Device	Serial	RF Connection	CFR47 Part 15.407
Wi-Fi Router	K96K-0003-SEAG-9HN9	Flex PCB Antenna	TX Emission, Radiated Band-Edge Out-of-Band Emission AC Conducted Emission
	K96K-0003-SEAG-9HN9	Direct Connection	Max. RMS Power, Power Spectral Density, Occupied Bandwidth Out-of-Band Emission

Table 22: Description of Test Configuration used for Radiated Measurement.

Device	Antenna	Mode	Setup Photo (X-Axis)	Setup Photo (Y-Axis)	Setup Photo (Z-Axis)
Wi-Fi Router	FPCB	Transmit	N/A	EUT standing up	N/A
Note: EUT designed to operate on the upright (Y-Axis) position.					

6.4 Test Specifications

Testing requirements

Table 23: Test Specifications

Emissions and Immunity	
Rules & Regulations / Standard	**Requirement**
CFR 47 Part 15.407: 2019	All
RSS 247 Issue 2, 2017	All

END OF REPORT