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Dynamic Frequency Selection Test Report

EUT Name: eero 6 and eero 6 Extender

Model No.: N010001 and Q010001

CFR 47 Part 15.407(h) 2020, RSS-247 (6.3) 2017 and KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

Prepared for:

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Revisions

Revision No.	Date MM/DD/YYYY	Reason for Change	Author
0	10/26/2020	Original Document	N/A

Note: Latest revision report will replace all previous reports.

Statement of Compliance

Manufacturer:	eero LLC 660 3rd Street San Francisco, CA 94107 +1 415-738-7972
Requester / Applicant:	Clifford Clarke
Name of Equipment:	eero 6 and eero 6 Extender
Model No.	N010001 and Q010001
Type of Equipment:	Intentional Radiator
Application of Regulations:	CFR 47 Part 15.407(h) 2020, RSS-247 (6.3) 2017 and KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
Test Dates:	August 20, 2020 to October 06, 2020

Guidance Documents:

Dynamic Frequency Selection: CFR47 Part 2 and 15.407 (h) 2020, RSS-247 (6.3) 2017, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

Test Methods:

Dynamic Frequency Selection: CFR47 Part 2 and 15.407 (h) 2020, RSS-247 (6.3) 2017, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

The Dynamic Frequency Selection 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	October 26, 2020	Jeremy Luong	October 26, 2020
Test Engineer	Date	Laboratory Signatory	Date

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 CFR47 Part 2 and 15.407 (h) 2020, RSS-247 (6.3) 2017, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 based on the results of testing performed on August 20, 2020 through October 06, 2020 on the eero 6 and eero 6 Extender Model N010001 and Q010001 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 dynamic frequency selection performance of the eero 6 and eero 6 Extender in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report.

1.3 Summary of Test Results

Table 1: Summary of Test Results for Master Device Mode

Requirements	Test Method KDB 905462	Description	Test Parameters	Measured Value	Result
20 MHz Bandwidth					
Detection Threshold	Sect. 7.8.1	EUT Min. Detection Level	-64 dBm ≥ 200 mW -62 dBm <200 mW	-62.95 dBm	**Complied**
Detection Bandwidth	Sect. 7.8.1	U-NII Detection Bandwidth	Min 100% of 99% BW.	20 MHz (detected bandwidth)	**Complied**
Performance Requirements Check	Sect. 7.8.2.1	Initial Channel Check	CAC ≥ 60s	See 80 MHz BW test result	**Complied**
	Sect. 7.8.2.2	Burst Radar at the beginning	150s (2.5min)	See 80 MHz BW test result	**Complied**
	Sect. 7.8.2.3	Burst Radar at the End	150s (2.5min)	See 80 MHz BW test result	**Complied**
In-Service Monitoring	Sect. 7.8.3	Channel Moving Time	CMT ≤ 10s	See 80 MHz BW test result	**Complied**
		Channel Closing Time Transmission	200 ms + an agg. Of 60 ms over remaining 10s.	See 80 MHz BW test result	**Complied**
		Non-Occupancy Period	≥ 30 min.	See 80 MHz BW test result	**Complied**
Radar Statistic Performance Check	Sect. 7.8.4	Waveform 1 - 4 Detections	60% in 30 trials 80% of Aggregate	Type 1A – 100% Type 1B – 100% Type 2 – 80.0% Type 3 – 83.3% Type 4 – 93.3% Aggre.1- 4 – 89.2%	**Complied**
		Waveform 5 Detections	80% in 30 trials	Type 5 – 96.7%	
		Waveform 6 Detections	70% in 30 trials	Type 6 – 100%	
Transmit Power Control	CFR47 15.407 (h)(1)		6 dB below 30 dBm EIRP or less than 500 mW.	Manufacturer's Statement	**Complied**
Uniform Spreading	CFR47 15.407 (h)(2)		Manufacturer's Statement		**Complied**
40 MHz Bandwidth					
Detection Threshold	Sect. 7.8.1	EUT Min. Detection Level	-64 dBm ≥ 200 mW -62 dBm <200 mW	-62.95 dBm	**Complied**
Detection Bandwidth	Sect. 7.8.1	U-NII Detection Bandwidth	Min 100% of 99% BW.	40 MHz (detected bandwidth)	**Complied**
Performance Requirements Check	Sect. 7.8.2.1	Initial Channel Check	CAC ≥ 60s	See 80 MHz BW test result	**Complied**
	Sect. 7.8.2.2	Burst Radar at the beginning	150s (2.5min)	See 80 MHz BW test result	**Complied**
	Sect. 7.8.2.3	Burst Radar at the End	150s (2.5min)	See 80 MHz BW test result	**Complied**
In Service Monitoring	Sect. 7.8.3	Channel Moving Time	CMT ≤ 10s	See 80 MHz BW test result	**Complied**

In-Service Monitoring		Channel Closing Time Transmission	200 ms + an agg. Of 60 ms over remaining 10s.	See 80 MHz BW test result	**Complied**
		Non-Occupancy Period	≥ 30 min.	See 80 MHz BW test result	**Complied**
Radar Statistic Performance Check	Sect. 7.8.4	Waveform 1 - 4 Detections	60% in 30 trials 80% of Aggregate	Type 1A – 96.7% Type 1B – 96.7% Type 2 – 76.7% Type 3 – 73.3% Type 4 – 83.3% Aggre.1- 4 – 82.5 %	**Complied**
		Waveform 5 Detections	80% in 30 trials	Type 5 – 96.7%	
		Waveform 6 Detections	70% in 30 trials	Type 6 – 100%	
Transmit Power Control	CFR47 15.407 (h)(1)		6 dB below 30 dBm EIRP or less than 500 mW.	Manufacturer's Statement	**Complied**
Uniform Spreading	CFR47 15.407 (h)(2)		Manufacturer's Statement		**Complied**
80 MHz Bandwidth					
Detection Threshold	Sect. 7.8.1	EUT Min. Detection Level	-64 dBm ≥ 200 mW -62 dBm <200 mW	-62.95 dBm	**Complied**
Detection Bandwidth	Sect. 7.8.1	U-NII Detection Bandwidth	Min 100% of 99% BW.	80 MHz (detected bandwidth)	**Complied**
Performance Requirements Check	Sect. 7.8.2.1	Initial Channel Check	CAC ≥ 60s	After 7.56 seconds	**Complied**
	Sect. 7.8.2.2	Burst Radar at the beginning	150s (2.5min)	Inject at 10.46 seconds	**Complied**
	Sect. 7.8.2.3	Burst Radar at the End	150s (2.5min)	Inject at 63.96 seconds	**Complied**
In-Service Monitoring	Sect. 7.8.3	Channel Moving Time	CMT ≤ 10s	1.5 ms	**Complied**
		Channel Closing Time Transmission	200 ms + an agg. Of 60 ms over remaining 10s.	5.4 ms	**Complied**
		Non-Occupancy Period	≥ 30 min.	> 30 min.	**Complied**
Radar Statistic Performance Check	Sect. 7.8.4	Waveform 1 - 4 Detections	60% in 30 trials 80% of Aggregate	Type 1A – 93.3% Type 1B – 93.3% Type 2 – 86.8% Type 3 – 80.0% Type 4 – 86.7% Aggre.1- 4 – 86.7%	**Complied**
		Waveform 5 Detections	80% in 30 trials	Type 5 – 86.7%	
		Waveform 6 Detections	70% in 30 trials	Type 6 – 100%	
Transmit Power Control	CFR47 15.407 (h)(1)		6 dB below 30 dBm EIRP or less than 500 mW.	Manufacturer's Statement	**Complied**

Uniform Spreading	CFR47 15.407 (h)(2)		Manufacturer's Statement		**Complied**

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 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 17025:2005 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-0268

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 Lane, Pleasanton, CA 94566 test results and test reports within the scope of the laboratory 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.

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 US1131). 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 N010001 and Q010001, eero 6 and eero 6 Extender, is a 2x2 home Wi-Fi router. It is intended to operate as a dual band (2.4 GHz and 5 GHz) 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.

Model differences:
N010001, eero 6 Gateway, contains two RJ45 ports and USB-C AC/DC adapter port.
Q010001, eero 6 Extender, USB-C AC/DC adapter port; No RJ45 ports. BLE/802.15.4 RF circuitry has been removed.
Both have the same WLAN radio hardware.
Model N010001 is considered worst case and used for testing.

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.

4 Dynamic Frequency Selection

Testing was performed in accordance with CFR47 Part 2 and 15.407 (h) 2020, RSS-247 (6.3) 2017, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02. These test methods are listed under the laboratory's A2LA Scope of Accreditation. This test measures and verifies the characteristics and probability of EUT to switch to different operating channel, once the radar signal is detected. Procedures described in KDB 905462 D02 UNII DFS Compliance Procedure New Rules v02 were used.

4.1 DFS Applicability

All devices operated in the frequency range of 5250 MHz-5350 MHz and 5470 MHz-5725MHz must equip with the DFS mechanism. Based on the operational mode of eero 6 and eero 6 Extender *Mode N010001* and Q010001*, the following requirements shall apply per KDB 905462 D02 procedures.*

Table 2: Applicability of DFS Requirements Prior to Use of a Channel

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

Table 3: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Master Device or Client With Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Yes	Not required
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Yes	Not required

Additional Requirements for device with multiple bandwidth modes	Master Device or Client With Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW Modes must be tested	Not Required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW Mode	Testing using the widest BW mode available for the link
All other tests	Any single BW Mode	Not Required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channel and the channel center frequencies.		

4.2 DFS Requirements

Based on the applicability of eero LLC, Model N010001 and Q010001, the following parameters and probability must be tested for conformance.

Table 4: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, & 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note 3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Table 5: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds. See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission should be performed with Radar Type 0. The measurement timing begin at the end of the Radar Type 0 burst. **Note 2:** The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. **Note 3:** During the U-NII Detection Bandwidth detection test, radar type 0 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 6: Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI Values in Table 5a	Roundup{(1/360)*(19*10^6/PRI_{usec})}	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 uSec, with a minimum increment of 1 uSec, excluding PRI values selected in Test 1A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time and channel closing time tests.					

Table 7: Pulse Repetition Intervals Value for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulse per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678

10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Table 8: Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

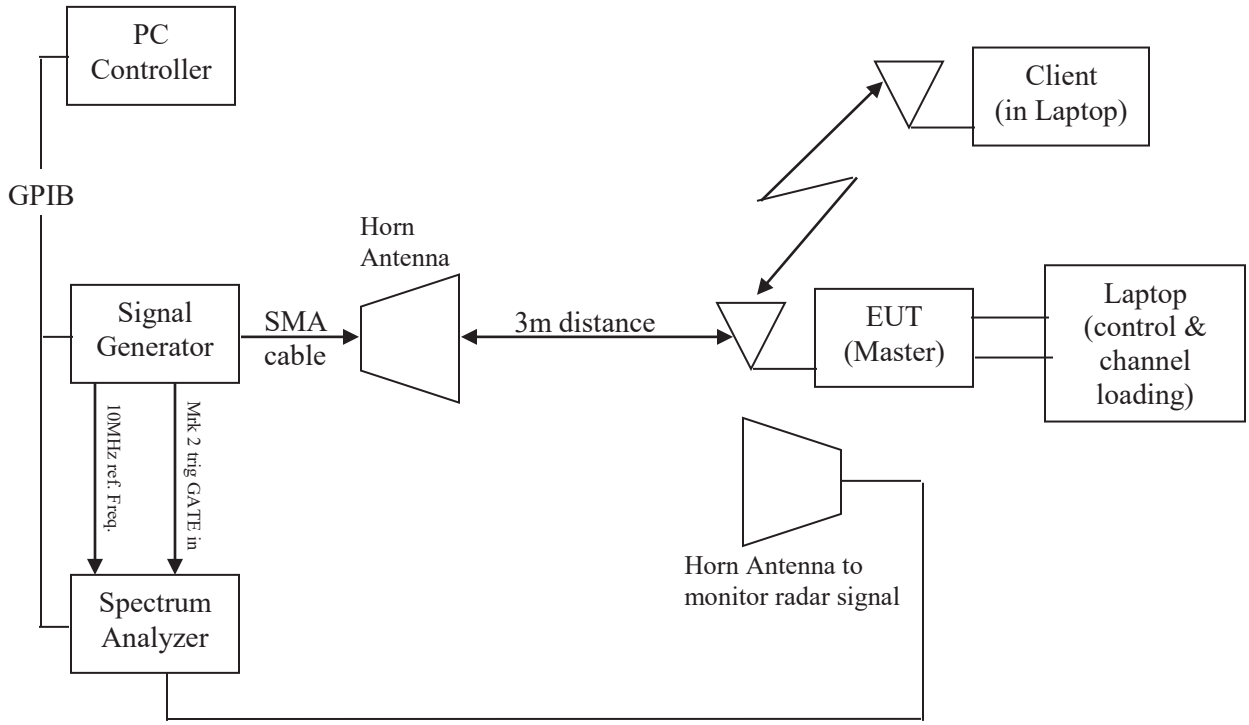
Table 9: Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

4.3 Test Setup Protocol

The following test setup was used to evaluate the eero 6 and eero 6 Extender Model N010001 and Q010001 for DFS conformance.

Dynamic Frequency Selection in 5 GHz Radiated Setup:



4.4 Radar Waveform Calibration Plot

All six radar waveforms verified at the 5290 MHz center frequency using radiated method. . These waveforms were compensated for the path loss as offset on spectrum analyzer.

The radar signal levels below are calibrated to be less than -63 dBm for EUT threshold detection.

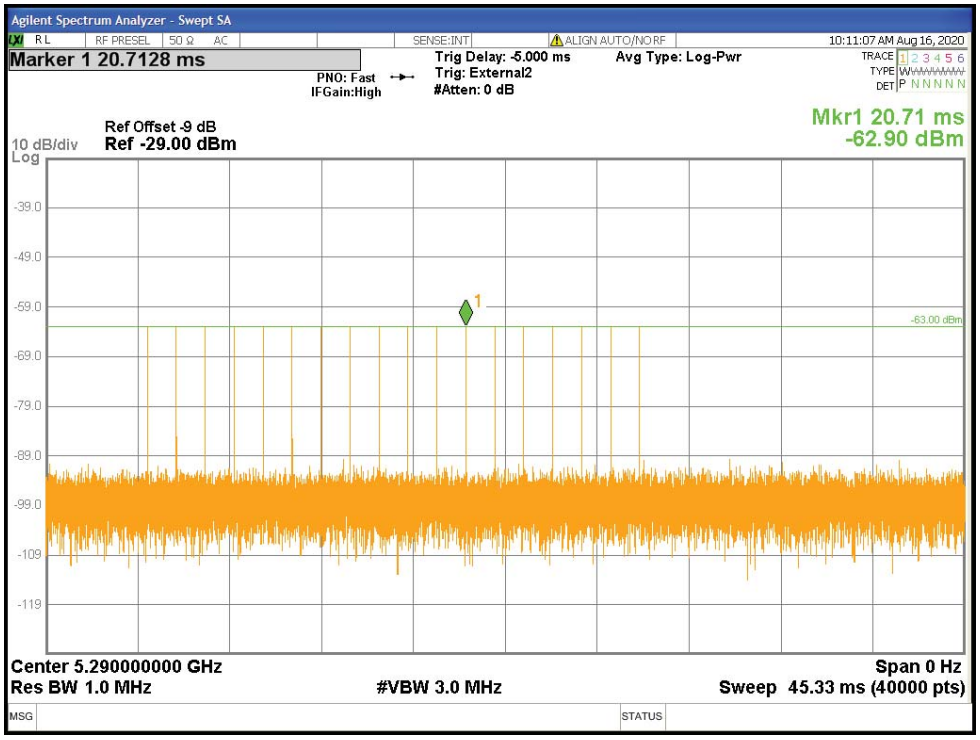


Figure 1: Radar Type 0 DFS Detection Threshold Level at 5290 MHz

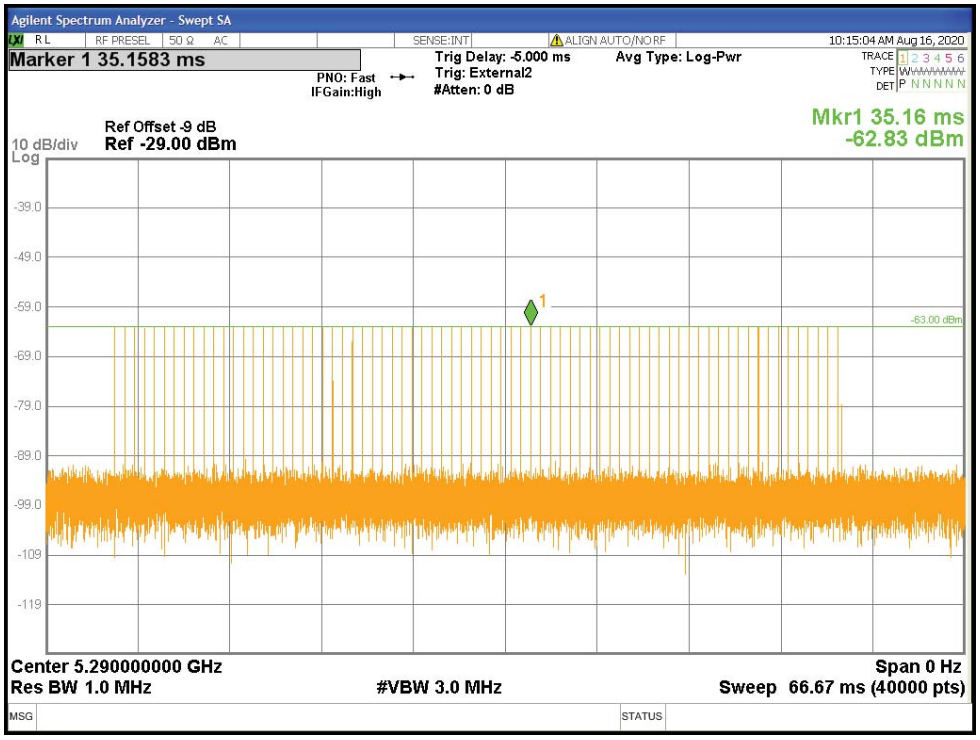


Figure 2: Radar Type 1A DFS Detection Threshold Level at 5290 MHz

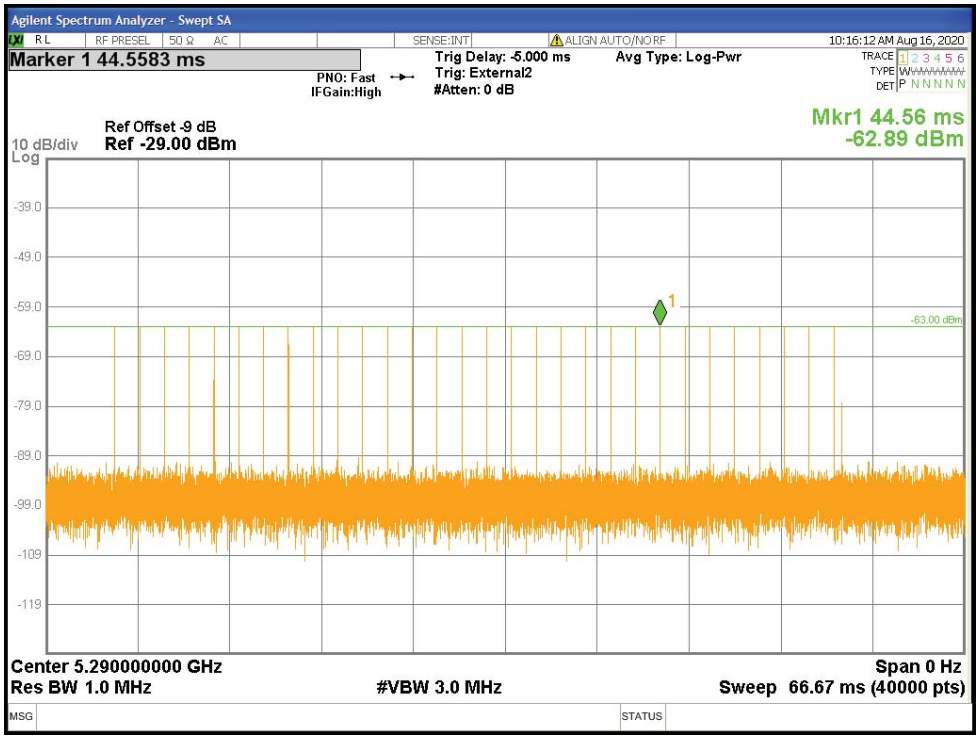


Figure 3: Radar Type 1B DFS Detection Threshold Level at 5290 MHz

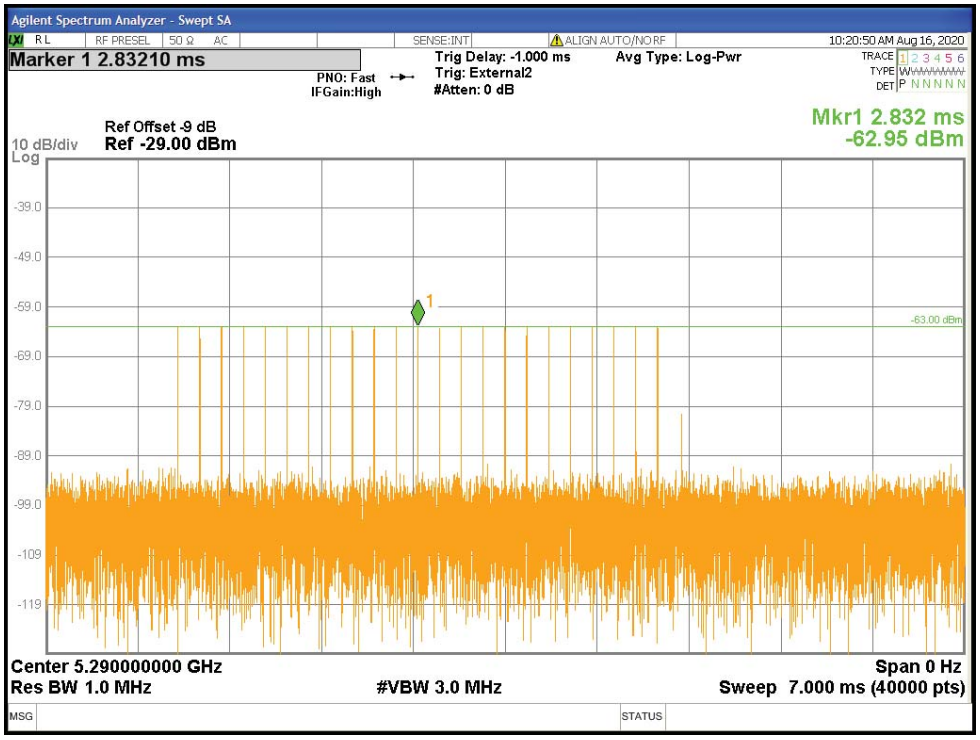


Figure 4: Radar Type 2 DFS Detection Threshold Level at 5290 MHz

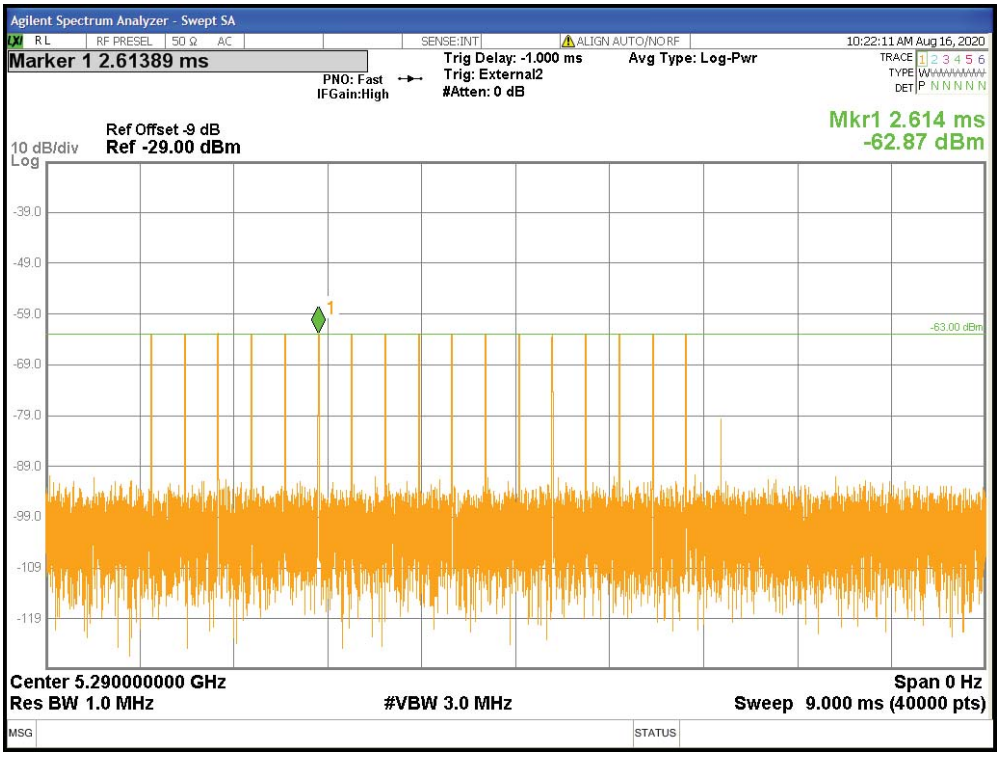


Figure 5: Radar Type 3 DFS Detection Threshold Level at 5290 MHz

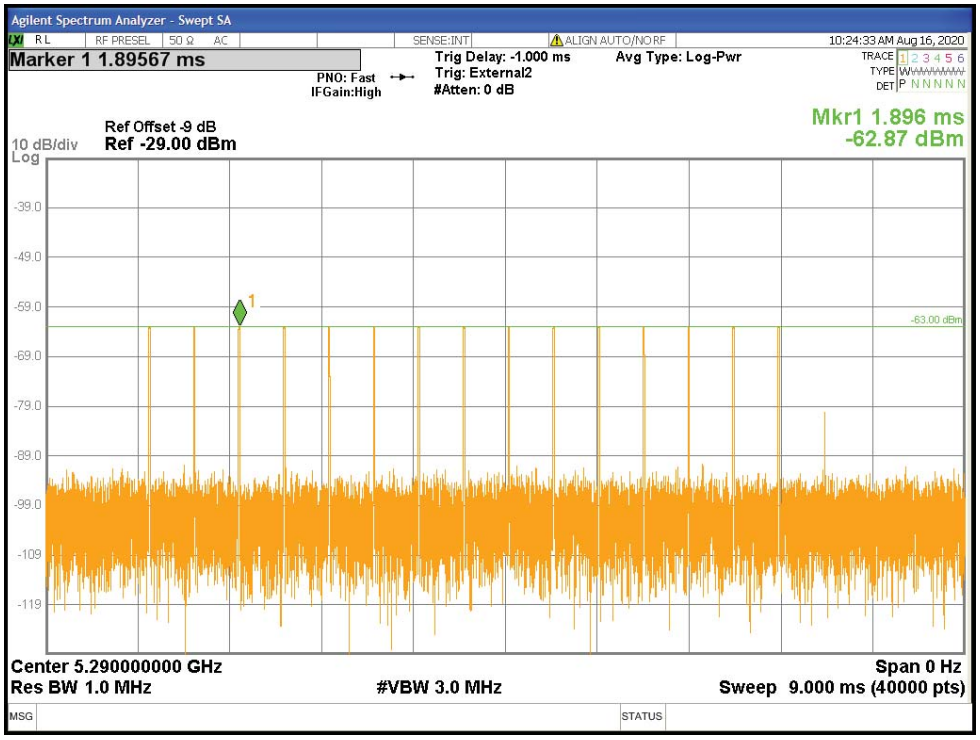


Figure 6: Radar Type 4 DFS Detection Threshold Level at 5290 MHz

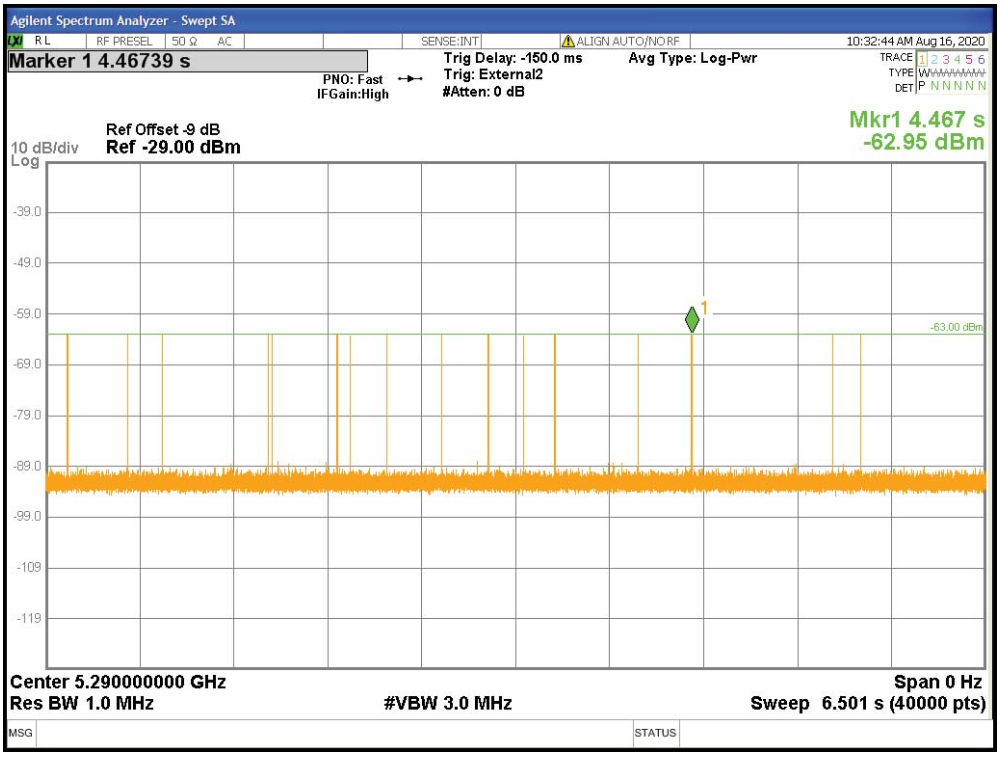


Figure 7: Radar Type 5 DFS Detection Threshold Level at 5290 MHz

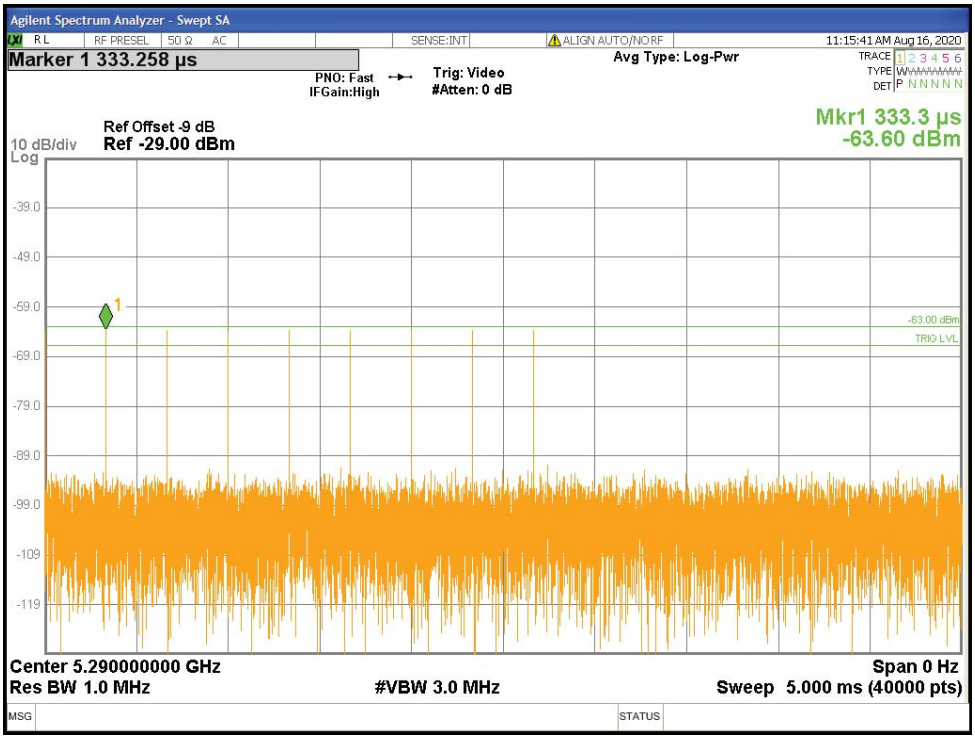


Figure 8: Radar Type 6 DFS Detection Threshold Level at 5290 MHz (9 Pulses in Burst)

4.5 Channel Loading

As stated in Section 7.7 of KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02, data transfer was used during evaluation of the eero 6 and eero 6 Extender, Model N010001 and Q010001. The minimum channel loading requirement is approximately 17% or greater. The operating channel on 5260 MHz was randomly selected for 20 MHz bandwidth, channel 5270 MHz was used for 40 MHz bandwidth, and 5290 MHz was used for 80 MHz bandwidth.

Channel loading calculation: Time On / (Time On + Off Time)

Figure 9: EUT Channel Loading at 5260 MHz. (20 MHz bandwidth)

Note: Channel loading = Time On / (Time On + Off Time)
= (19.13 ms / 94.70 ms) * 100 %
= 20.20 %

Figure 10: EUT Channel Loading at 5270 MHz. (40 MHz bandwidth)

Note: Channel loading = Time On / (Time On + Off Time)
= (18.97 ms / 95.02 ms) * 100 %
= 19.96 %

Figure 11: EUT Channel Loading at 5290 MHz (80 MHz bandwidth)

Note: Channel loading = Time On / (Time On + Off Time)
= (19.04 ms / 98.64 ms) * 100 %
= 19.30 %

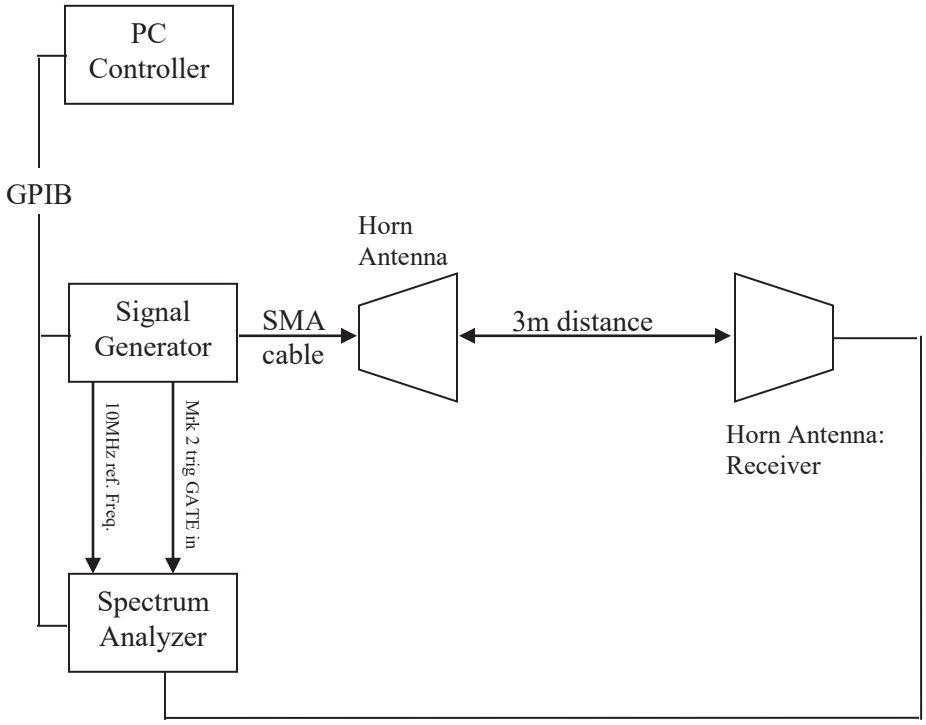
4.6 DFS Detection Threshold

All operating channels of the eero 6 and eero 6 Extender, Model N010001 and Q010001 have the same detection bandwidth. The operating channel on 5260 MHz was randomly selected for 20 MHz bandwidth, channel 5270 MHz was used for 40 MHz bandwidth, and 5290 MHz was used for 80 MHz bandwidth. UNII detection bandwidth performed according to Section 7.8.1 of KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02.

4.6.1 Test Method

The radiated method was used to measure the detection threshold. KDB 905462 D02 Section 7.8 was used to determine the DFS generator drive level. The continuous wave at 5260 MHz, 5270 MHz, and 5290 MHz were applied and the corrected level recorded at the EUT end. The setup diagram is shown below.

Test Setup:



4.6.2 Results

The eero 6 and eero 6 Extender, Model N010001 and Q010001 was provided with uniform loading across the dynamic frequency ranges of 5250 MHz to 5350 MHz.

The required threshold level is -64 dBm since the eero 6 and eero 6 Extender transmitted EIRP power is greater than 200 mW.

A reference offset was applied into the Spectrum Analyzer for cable loss and antenna gain of -9.0 dB.

Radar Injection Level = -64.0 dBm + 1dB

= -63.0 dBm

Note: The above threshold level was used to verify all Waveforms Type 0 to 6, as indicated in Section 4.4 of this report.

4.7 UNII Detection Bandwidth

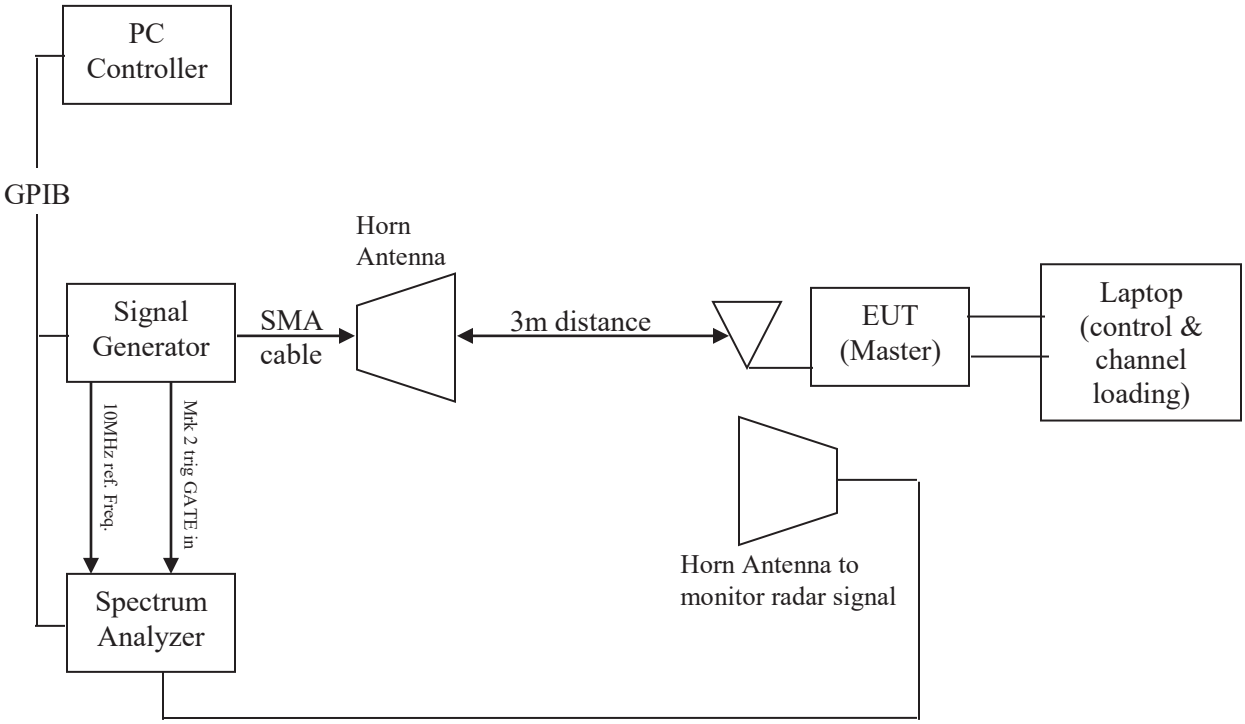
All operating channels of the eero 6 and eero 6 Extender, Model N010001 and Q010001 have the same detection bandwidth. The operating channel on 5260 MHz was randomly selected for 20 MHz bandwidth testing. Similarly, the 5270 MHz operating channel was used for testing 40 MHz bandwidth, and 5290 MHz operating channel used for 80 MHz bandwidth. UNII detection bandwidth performed according to Section 7.8.1 of KDB 905462 D02.

The measured U-NII detection bandwidth of Model N010001 and Q010001 *shall be at least 100% of the 99% channel power bandwidth; per Table 4 of KDB 905462 D02.*

4.7.1 Test Method

The KDB 905462 D02 Section 7.8.1 detection bandwidth radiated method was used to measure the detection bandwidth output. The sample configured to operate at 5260 MHz for 20 MHz bandwidth, 5270 MHz for 40 MHz bandwidth, and 5290 MHz for 80 MHz bandwidth. The results are indicated below.

Test Setup:



4.7.2 Results

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

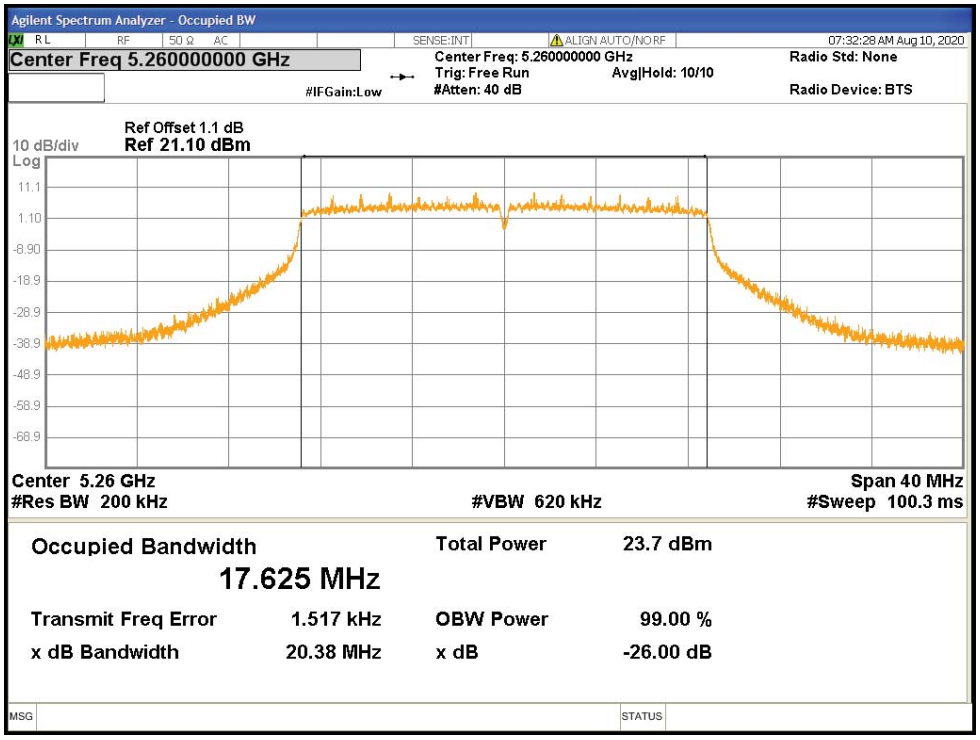


Figure 12: 99% Bandwidth at 5260 MHz

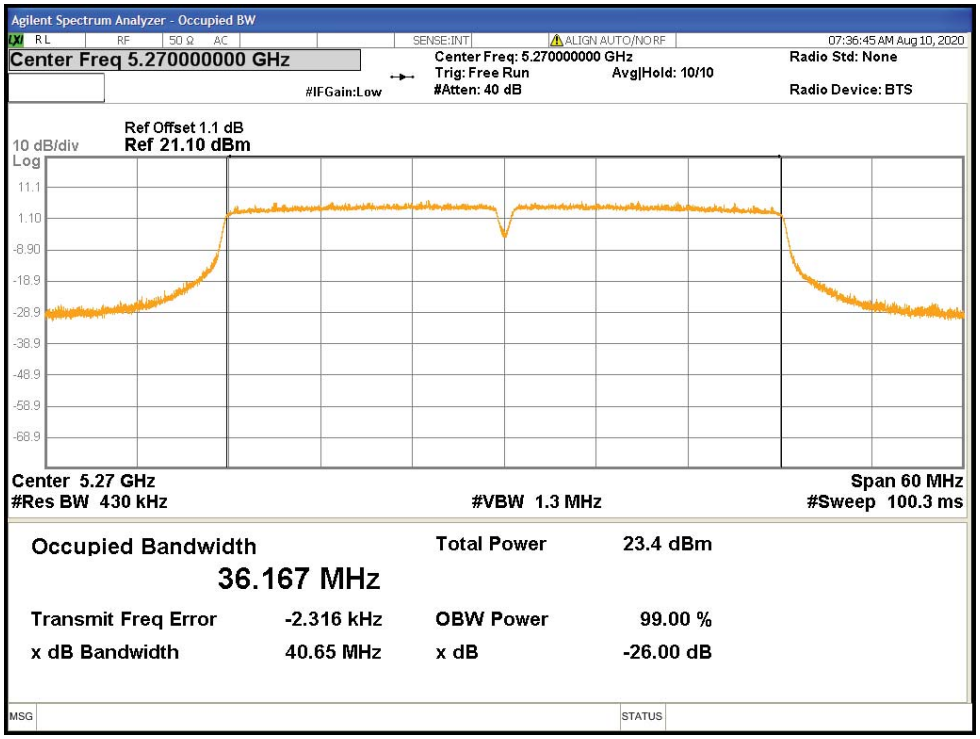


Figure 13: 99% Bandwidth at 5270 MHz

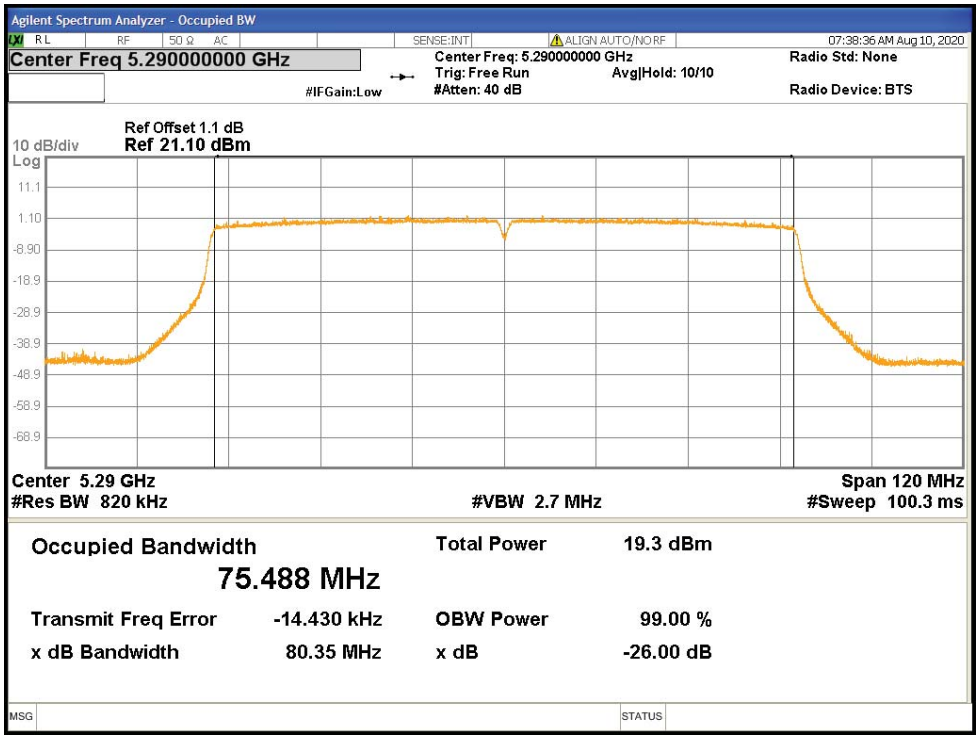


Figure 14: 99% Bandwidth at 5290 MHz

Table 10: U-NII Detection Bandwidth for 20 MHz Bandwidth – Test Results

Test Date: August 20, 2020	
Test Setup: radiated method	**Radar Test Waveform:** 0
Center Frequency: 5260 MHz	**EUT State:** No traffic
Min. Antenna Gain: +1.69 dBi	**Max. Transmitted Power:** +20 dBm.
Required Threshold: -64 dBm	**Detection Threshold:** -63 dBm
Ambient Temperature: 23°C	**Relative Humidity:** 42%RH

Frequency (MHz)	Trial Number										Sucessful Percentage	Note
	1	2	3	4	5	6	7	8	9	10		
5250	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fl
5251	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5252	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5253	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5254	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5255	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5260	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fc
5265	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5266	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5267	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5268	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5269	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5270	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fh
5271												
5272												
99% Chan. Power Bandwidth =					17.63	MHz						
Required Detection Bandwidth =					17.63	MHz						
Detection Bandwidth (Fh-Fl) =					20.00	MHz						
Over All Result =					Complies							

Table 11: U-NII Detection Bandwidth for 40 MHz Bandwidth – Test Results

Test Date: August 20, 2020	
Test Setup: radiated method	**Radar Test Waveform:** 0
Center Frequency: 5270 MHz	**EUT State:** No traffic
Min. Antenna Gain: +1.69 dBi	**Max. Transmitted Power:** +20 dBm.
Required Threshold: -64 dBm	**Detection Threshold:** -63 dBm
Ambient Temperature: 23°C	**Relative Humidity:** 42%RH

Frequency (MHz)	Trial Number										Sucessful Percentage	Note
	1	2	3	4	5	6	7	8	9	10		
5250	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fl
5251	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5252	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5253	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5254	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5255	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5260	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5265	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5270	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fc
5275	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5280	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5285	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5286	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5287	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5288	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5289	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5290	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fh
99% Chan. Power Bandwidth =					36.17	MHz						
Required Detection Bandwidth =					36.17	MHz						
Detection Bandwidth (Fh-Fl) =					40.00	MHz						
Over All Result =						Complies						

Table 12: U-NII Detection Bandwidth for 80 MHz Bandwidth – Test Results

Test Date: August 14, 2019												
Test Setup: radiated method						**Radar Test Waveform:** 0						
Center Frequency: 5290 MHz						**EUT State:** No traffic						
Min. Antenna Gain: +3.11 dBi						**Max. Transmitted Power:** +20 dBm.						
Required Threshold: -64 dBm						**Detection Threshold:** -63 dBm						
Ambient Temperature: 23°C						**Relative Humidity:** 39%RH						
5254	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5255	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5260	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5265	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5270	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5275	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5280	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5285	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5290	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fc
5295	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5300	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5305	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5310	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5315	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5320	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5325	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5326	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5327	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5328	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	100	
5329	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	
5330	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100	Fh
99% Chan. Power Bandwidth =					75.49 MHz							
Required Detection Bandwidth =					75.49 MHz							
Detection Bandwidth (Fh-Fl) =					80.00 MHz							
Over All Result =					Complies							

4.8 Performance Requirement Checks

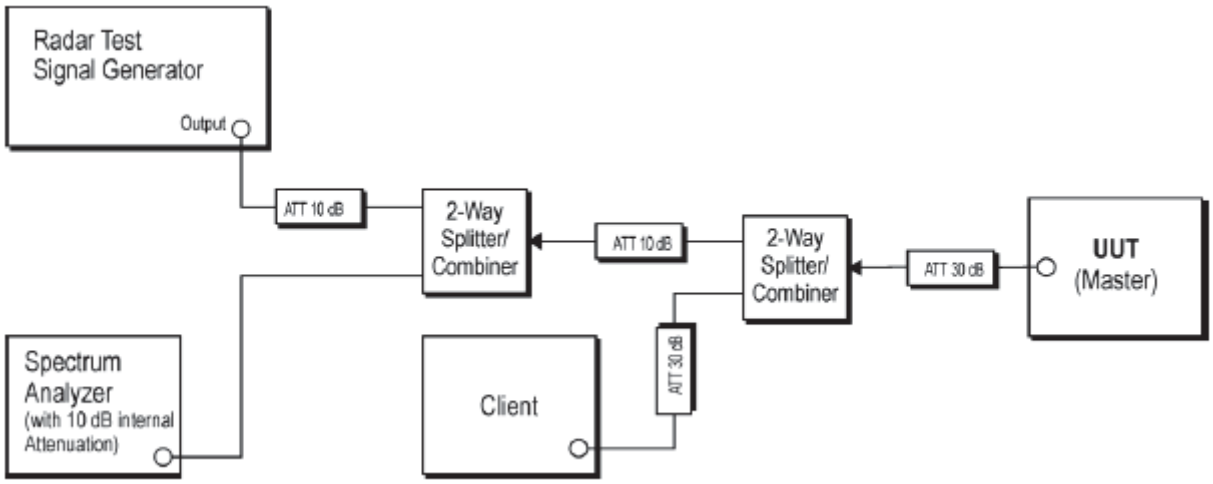
The performance checks consist of the initial channel availability check, radar injection at the beginning of the channel check, and radar injection at the end of the channel check. These parameters of the eero 6 and eero 6 Extender, Model N010001 and Q010001 are verified to ensure the proper radar detection.

The eero 6 and eero 6 Extender, Model N010001 and Q010001 must have 1 minute transmission-free time for initial channel availability check time and 2.5 minutes of transmission-free time for other channel availability check per KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02.

4.8.1 Test Method

The KDB 905462 D02 v02 Section 7.8.2 Performance Requirements Check was used. The sample configured to operate at 5290 MHz for 80 MHz bandwidth. The final results are indicated below.

Test Setup:



4.8.2 Results

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

Table 13: Channel Availability Checks for 80 MHz Bandwidth – Test Results

Test Date: October 6, 2020				
Test Method: conducted method		**Radar Test Waveform:** 0		
Center Frequency: 5290 MHz		**EUT State:** No traffic		
Min. Antenna Gain: +1.69 dBi		**Max. Transmitted Power:** +20 dBm.		
Required Threshold: -64 dBm		**Detection Threshold:** -63 dBm		
Ambient Temperature: 23°C		**Relative Humidity:** 42 %RH		
Performance	**Plots #**	**Limit**	**Results**	**Remark**
Power-up Cycle	15	N/A	Complies	Power-up time was measured 7.56 seconds.
Channel Availability Check Time	15	60s	Complies	Channel check time from 7.56 s to 67.56 s
Radar Injection near the beginning of CAC	16	150s	Complies	Injected at 10.46 seconds; 2.90 s into the CAC.
Radar Injection near the End of CAC	17	150s	Complies	Injected at 63.96 seconds; 56.40 s into the CAC.
Note: Manufacturer declared the power up time was 10 seconds after WiFi (5GHz) is up.				

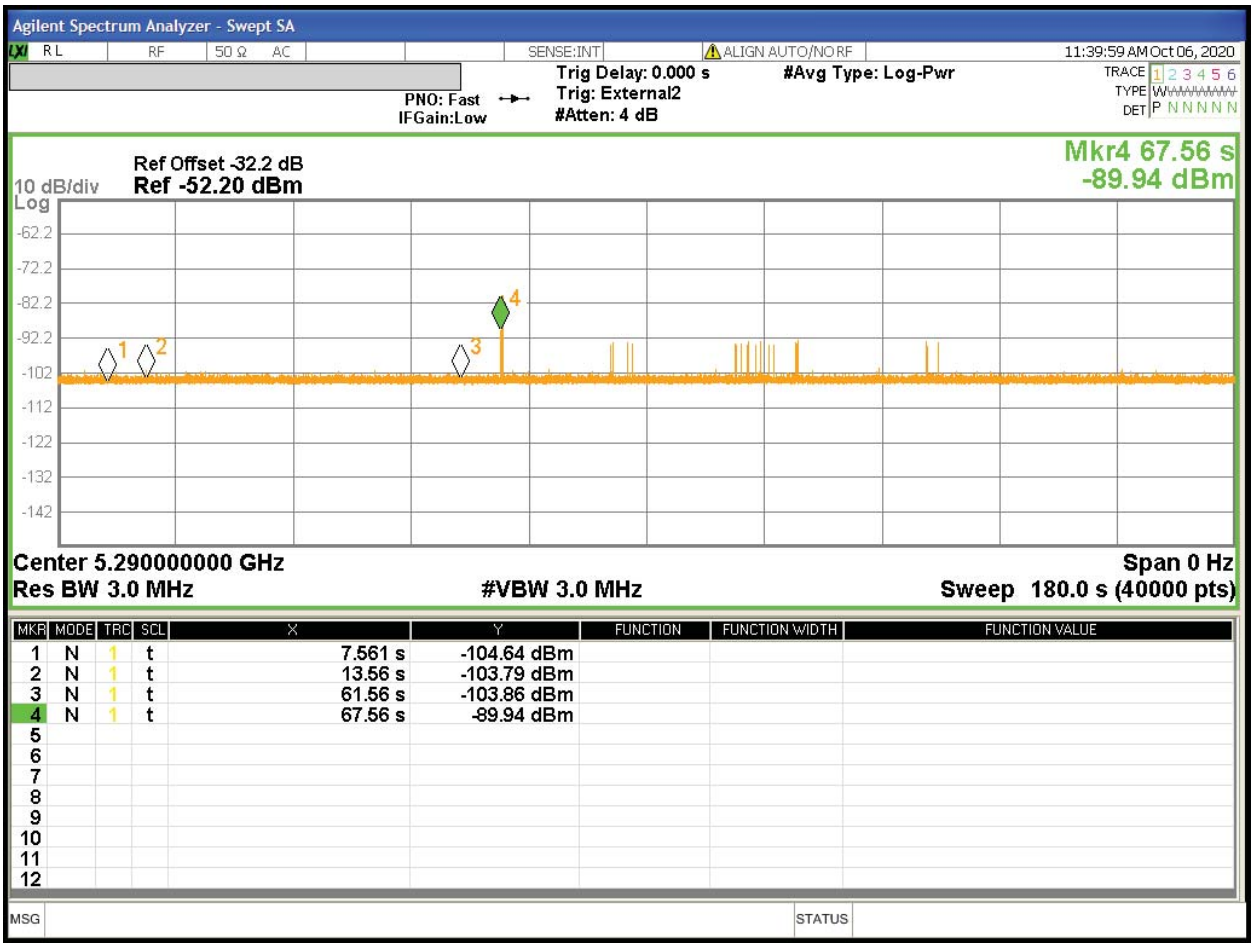


Figure 15: Initial Channel Availability Check for 80 MHz Bandwidth

Note: 1. Analyzer was trigger at the EUT' power up cycle.

2. Marker 1 is denoted end of power-up time and the start of 60 seconds channel availability check time.

3. Marker 2 is denoted at 6 seconds into the 60 second channel availability check time.

4. Marker 3 is denoted at 54 seconds into the 60 second channel availability check time.

5. Marker 4 is when EUT started to transmit at 67.56 seconds.

Figure 16: Radar Pulse Injection near the Beginning of Channel Availability Check for 80 MHz Bandwidth

Note: 1. The eero 6 and eero 6 Extender, Model N010001 and Q010001 has the power up time of 7.56 seconds.

2. The first 6 second of channel availability check would be between 7.56 s and 13.56 s.

3. A Waveform 0 Radar Burst is injected at 10.46 seconds.

4. No transmission occurred within 2.5 minutes after radar injection.

Figure 17: Radar Pulse Injection near the End of Channel Availability Check for 80 MHz Bandwidth

Note: 1. The eero 6 and eero 6 Extender, Model N010001 and Q010001 has the power up time of 7.56 seconds.

2. The last 6 second of channel availability check would be between 61.56 s and 67.56 s.

3. The single radar burst is injected at 63.96 seconds.

4. No transmission occurred within 2.5 minutes after radar injection.

4.9 In-Service Monitoring

In-service monitoring performance checks consist of the channel move time, channel closing transmission time, and non-occupancy period. These parameters of the eero 6 and eero 6 Extender, Model N010001 and Q010001 are verified to give the radar system the priority of the frequency and minimize the interference with nearby radar systems when the eero 6 and eero 6 Extender, Model N010001 and Q010001 is being used.

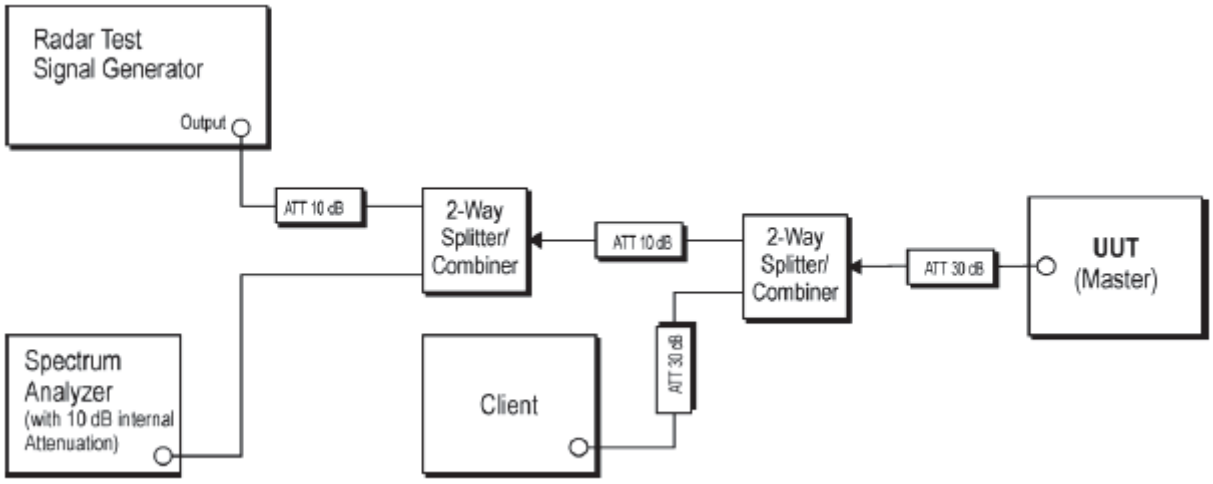
Upon the detection of radar signal on the operating channel, the equipment under test (EUT) must move to another operating channel with move time less than 10 seconds. The total channel closing transmission time must be 200 mS with an aggregate 60 mS over the remaining 10 second period. The radar detected channel must not have any transmission from EUT for the minimum of 30 minutes.

4.9.1 Test Method

The KDB 905462 D02 UNII DFS Compliance Procedure New Rules v02 Section 7.8.3 Performance Requirements Check was used.

The sample was used as master device and configured to operate at 5290 MHz for 80 MHz bandwidth. The final results are indicated below.

Test Setup:



4.9.2 Results

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

Table 14: In-Service Monitoring – Test Results

Test Date: October 6, 2020								
Test Method: conducted method								
Center Frequency: 5290 MHz				**EUT State:** data transfer continuously (iPerf app)				
Min. Antenna Gain: +1.69 dBi				**Max. Transmitted Power:** +20 dBm.				
Required Threshold: -64 dBm				**Detection Threshold:** -63 dBm				
Ambient Temperature: 23°C				**Relative Humidity:** 42 %RH				
Master Mode at 11ACVHT80, 80 MHz Bandwidth								
Waveform	**CCTT**		**CMT**		**Non-Occupancy**		**Plots**	**Results**
	Meas.	Limit	Meas.	Limit	Meas.	Limit		
Type 0	5.4 ms	260 ms	1.5 ms	10s	> 30min	30 min.	18,19,20	Complies

CCTT= Channel Closing Transmission Time.

CMT= Channel Move Time

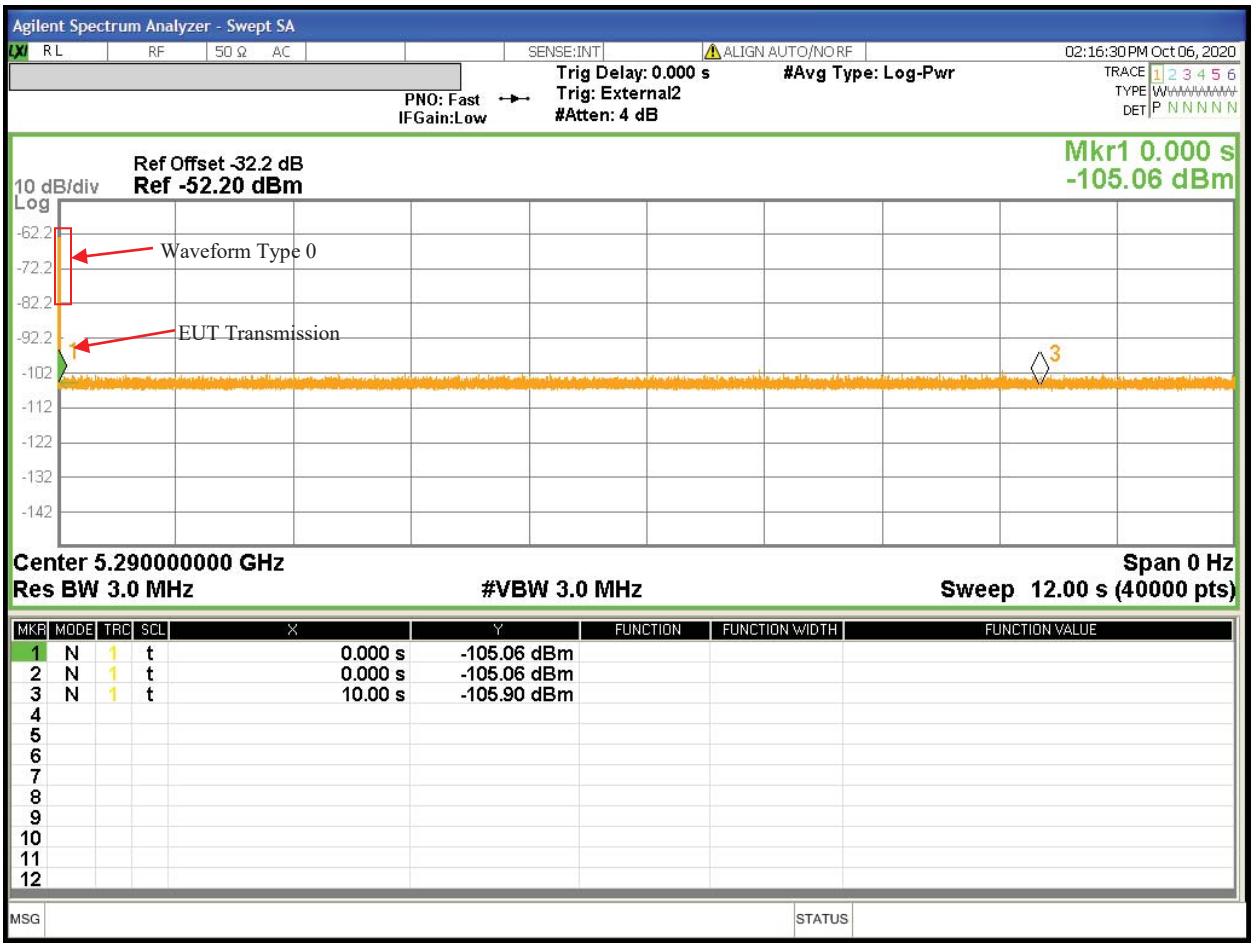


Figure 18: Channel Move Time and Channel Closing Transmission Time using Pulse Radar Waveform 0 in Master Mode 11AC VHT80, 80 MHz Bandwidth

Note: Spectrum Analyzer was triggered to capture Waveform Type 0 radar pulse and EUT transmission afterward. The data transfer was paused about <1 second. The data transfer resumed with EUT operated at VHT80 Non-DFS Channel 42, 5210 MHz.

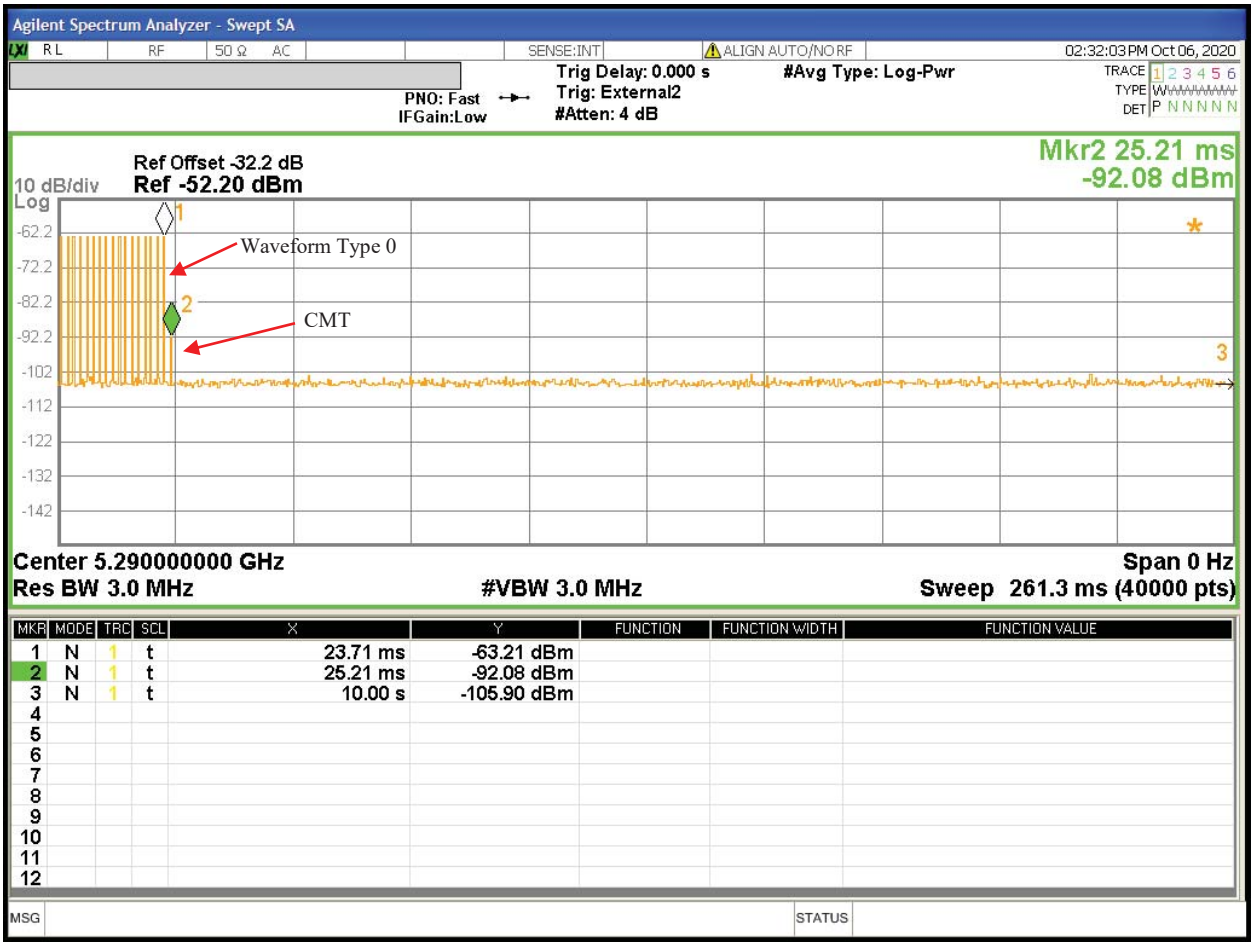


Figure 19: Channel Move Time and Channel Closing Transmission Time using Pulse Radar Waveform 0 for 80 MHz Bandwidth (Close-up)

Note: 1. Agilent MXE Analyzer was triggered with 40000 single sweep points (Bins). Fig. 20 is a zoom-in (set sweep time to 260 ms) plot from Fig. 19.

2. The last radar pulse of Waveform Type 0 was denoted by Marker 1 at 23.71 ms

3. There are total 18 spectrum analyzer bins above the noise floor level after 23.71 ms.

CCTT = # Bins * (12000 mS / 40000 Bins)
= 49 bins * (12000 mS/ 40000 Bins)
= 5.4 mS.

4. Channel Move Time (CMT) is defined as the delta of EUT's last transmission to the last pulse of radar burst.

Last Radar Pulse = 23.71 mS
Last Transmission = 25.21 mS
Channel Move Time = Last Transmission – Last Radar Pulse = 1.50 ms

5. No transmission happened after 200 mS, no aggregate.

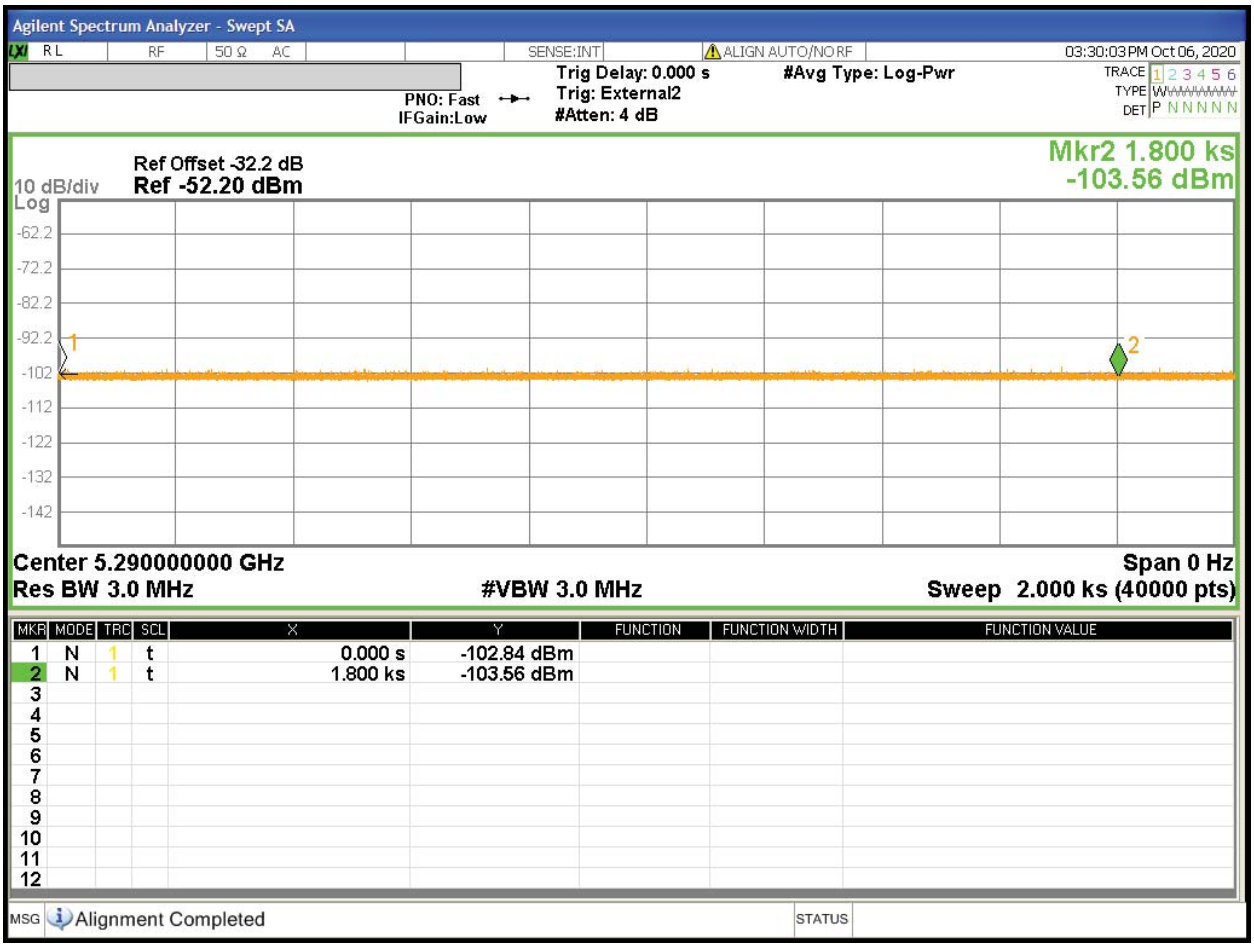


Figure 20: Non-Occupancy Period using Waveform Type 0 in Master Mode for 11AC VHT80, 80 MHz Bandwidth

Note: 1. Marker #1 denotes after the end of radar pulse.

2. Marker #2 denotes the 30 minutes limit on Channel 5290 MHz.

3. No transmission of 30 minutes after the last aggregates on the original channel.

4. EUT transmission moved to Channel 42 (5210 MHz).

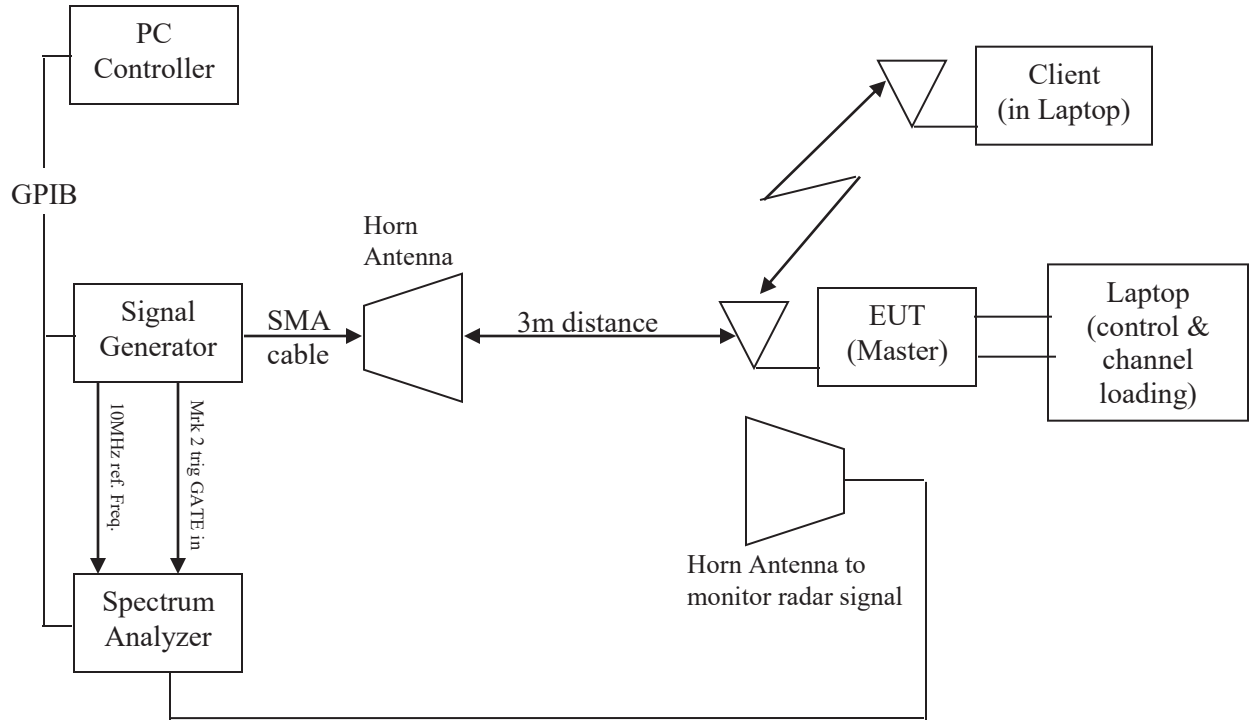
4.10 Statistic Performance Check

All six radar waveforms identified under KDB 905462 D02 will applied to the U-NII device. Each waveform will be applied to the eero 6 and eero 6 Extender, Model N010001 and Q010001 for the minimum of 30 trials while data transferring continuously. The minimum percentage of detection and total aggregated percentage must meet the Table 5, 6, and 7 of KDB 905462 D02 requirements.

4.9.1 Test Method

The *KDB 905462 D02* Section 7.8.4 Performance Requirements Check was used for evaluating the eero 6 and eero 6 Extender, Model N010001 and Q010001. It configured to data transfer continuously in 802.11ac VHT20 at 5260 MHz, 802.11ac VHT40 at 5270 MHz, 802.11ac VHT80 at 5290 MHz. The data transfer at the client supporting laptop end. Each verified radar waveform per Section 4.4 of this report applied to the below coupling circuit. The final results are indicated below.

Test Setup:



4.9.2 Results

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

Table 15: Statistic Performance Checks for 20 MHz Bandwidth – Summary

Test Date: August 20-21, 2020	
Test Method: radiated method	
Center Frequency: 5260 MHz	**EUT State:** data transfer continuously (iPerf app)
Min. Antenna Gain: +1.69 dBi	**Max. Transmitted Power:** +20 dBm
Required Threshold: -64dBm	**Detection Threshold:** -63 dBm
Ambient Temperature: 23°C	**Relative Humidity:** 40% RH

Radar Type	# of Trials	# of Detection	Successful Detection (%)	Min. % of Successful Detection	Results
Waveform #1 (A/B)	30	30	100%	60%	Complies
Waveform #2	30	24	80.0%	60 %	Complies
Waveform #3	30	27	83.3%	60%	Complies
Waveform #4	30	28	93.3%	60%	Complies
Aggregate (Radar Type 1 to 4)			89.2%	80%	Complies
Waveform #5	30	29	96.7%	80%	Complies
Waveform #6	30	30	100%	70%	Complies
Note: None.					

Table 16: Statistic Performance Checks for 40 MHz Bandwidth – Summary

Test Date: August 20-21, 2020	
Test Method: radiated method	
Center Frequency: 5270 MHz	**EUT State:** data transfer continuously (iPerf app)
Min. Antenna Gain: +1.69 dBi	**Max. Transmitted Power:** +20 dBm
Required Threshold: -64dBm	**Detection Threshold:** -63 dBm
Ambient Temperature: 23°C	**Relative Humidity:** 40% RH

Radar Type	# of Trials	# of Detection	Successful Detection (%)	Min. % of Successful Detection	Results
Waveform #1	30	29	96.7%	60%	Complies
Waveform #2	30	23	76.7%	60%	Complies
Waveform #3	30	22	73.3%	60%	Complies
Waveform #4	30	25	83.3%	60%	Complies
Aggregate (Radar Type 1 to 4)			82.5%	80%	Complies
Waveform #5	30	29	96.7%	80%	Complies
Waveform #6	30	30	100%	70%	Complies
Note: None.					

Table 17: Statistic Performance Checks for 80 MHz Bandwidth – Summary

Test Date: August 20-21, September 14, 2020	
Test Method: radiated method	
Center Frequency: 5290 MHz	**EUT State:** data transfer continuously (iPerf app)
Min. Antenna Gain: +1.69 dBi	**Max. Transmitted Power:** +20 dBm
Required Threshold: -64dBm	**Detection Threshold:** -63 dBm
Ambient Temperature: 23°C	**Relative Humidity:** 40% RH

Radar Type	# of Trials	# of Detection	Successful Detection (%)	Min. % of Successful Detection	Results
Waveform #1	30	28	93.3%	60%	Complies
Waveform #2	30	26	86.8%	60%	Complies
Waveform #3	30	24	80.0%	60%	Complies
Waveform #4	30	26	86.6%	60%	Complies
Aggregate (Radar Type 1 to 4)			86.7%	80%	Complies
Waveform #5	30	26	86.7%	80%	Complies
Waveform #6	30	30	100%	70%	Complies
Note: None.					

Table 18: Statistic Performance Check for 20 MHz Bandwidth - FCC Radar Type 1

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 20, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 1					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5260	67	1	798	Yes
2	5259	62	1	858	Yes
3	5258	98	1	538	Yes
4	5257	89	1	598	Yes
5	5256	76	1	698	Yes
6	5255	61	1	878	Yes
7	5254	72	1	738	Yes
8	5253	59	1	898	Yes
9	5252	81	1	658	Yes
10	5251	70	1	758	Yes
11	5250	83	1	638	Yes
12	5261	86	1	618	Yes
13	5262	95	1	558	Yes
14	5263	65	1	818	Yes
15	5264	68	1	778	Yes
16	5265	64	1	824	Yes
17	5266	33	1	1621	Yes
18	5267	25	1	2128	Yes
19	5268	22	1	2489	Yes
20	5269	27	1	2018	Yes
21	5270	23	1	2311	Yes
22	5250	24	1	2239	Yes
23	5251	31	1	1723	Yes
24	5252	26	1	2043	Yes
25	5253	32	1	1693	Yes
26	5254	51	1	1046	Yes
27	5255	46	1	1155	Yes
28	5257	34	1	1593	Yes
29	5258	53	1	1008	Yes
30	5260	58	1	918	Yes
Summary: 30 detections in 30 trials.					

Table 19: Statistic Performance Check for 40 MHz Bandwidth - FCC Radar Type 1

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 20, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40				
Rohde & Schwarz K350 Pulse Sequencer - RADAR TYPE 1					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5270	68	1	778	Yes
2	5290	89	1	598	Yes
3	5289	83	1	638	Yes
4	5288	78	1	678	Yes
5	5287	74	1	718	No
6	5286	86	1	618	Yes
7	5285	67	1	798	Yes
8	5284	92	1	578	Yes
9	5283	70	1	758	Yes
10	5282	58	1	918	Yes
11	5281	59	1	898	Yes
12	5280	98	1	538	Yes
13	5279	65	1	818	Yes
14	5278	61	1	878	Yes
15	5277	72	1	738	Yes
16	5250	31	1	1726	Yes
17	5251	27	1	2011	Yes
18	5252	23	1	2330	Yes
19	5253	28	1	1912	Yes
20	5254	29	1	1864	Yes
21	5255	33	1	1605	Yes
22	5256	71	1	746	Yes
23	5257	26	1	2034	Yes
24	5258	24	1	2208	Yes
25	5259	98	1	543	Yes
26	5260	47	1	1142	Yes
27	5261	20	1	2639	Yes
28	5262	25	1	2187	Yes
29	5263	43	1	1233	Yes
30	5264	61	1	876	Yes
Summary: 29 detections in 30 trials.					

Table 20: Statistic Performance Check for 80 MHz Bandwidth - FCC Radar Type 1

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 20, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80				
Rohde & Schwarz K350 Pulse Sequencer - RADAR TYPE 1					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5290	63	1	838	Yes
2	5295	95	1	558	Yes
3	5300	58	1	918	Yes
4	5305	76	1	698	Yes
5	5310	92	1	578	Yes
6	5320	61	1	878	Yes
7	5325	86	1	618	Yes
8	5330	74	1	718	No
9	5285	18	1	3066	Yes
10	5280	72	1	738	Yes
11	5275	83	1	638	Yes
12	5270	62	1	858	Yes
13	5265	70	1	758	Yes
14	5260	89	1	598	Yes
15	5255	59	1	898	Yes
16	5250	21	1	2583	Yes
17	5292	21	1	2538	Yes
18	5294	26	1	2089	Yes
19	5298	63	1	844	Yes
20	5303	40	1	1327	Yes
21	5328	88	1	602	Yes
22	5322	40	1	1351	No
23	5326	81	1	653	Yes
24	5288	18	1	2994	Yes
25	5286	72	1	742	Yes
26	5282	38	1	1410	Yes
27	5277	49	1	1080	Yes
28	5252	27	1	2000	Yes
29	5258	41	1	1311	Yes
30	5254	19	1	2840	Yes
Summary: 28 detections in 30 trials.					

Table 21: Statistic Performance Check for 20 MHz Bandwidth - FCC Radar Type 2

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 21, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 2					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5260	27	4.1	190	No
2	5261	24	3.6	157	Yes
3	5262	28	4.9	222	Yes
4	5263	26	4.3	165	Yes
5	5264	28	1.5	190	Yes
6	5265	27	4.9	207	No
7	5266	26	3.6	175	Yes
8	5267	28	4.2	220	Yes
9	5269	23	4.4	207	Yes
10	5269	26	2.5	180	Yes
11	5270	27	3.8	191	Yes
12	5251	29	4.2	169	Yes
13	5251	29	3.5	206	Yes
14	5252	23	3.8	227	No
15	5253	26	3	160	Yes
16	5254	24	1.1	153	Yes
17	5255	23	2.3	165	No
18	5256	26	1.9	213	Yes
19	5257	25	2.1	226	Yes
20	5258	27	1.2	194	Yes
21	5259	26	4	193	Yes
22	5250	25	3.6	217	Yes
23	5251	26	3.4	189	Yes
24	5252	25	1.1	182	Yes
25	5253	27	1.2	209	Yes
26	5254	27	3.3	212	No
27	5269	27	4.9	177	No
28	5269	27	3	218	Yes
29	5268	25	4.8	167	Yes
30	5267	23	1.4	221	Yes
Summary: 24 detections in 30 trials.					

Table 22: Statistic Performance Check for 40 MHz Bandwidth - FCC Radar Type 2

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 21, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 2					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5270	27	4.5	181	Yes
2	5290	29	3.6	170	Yes
3	5289	26	2.2	202	Yes
4	5288	25	3.2	218	Yes
5	5287	25	1.5	184	Yes
6	5286	28	2.8	206	Yes
7	5285	29	2.3	189	No
8	5284	24	3	178	Yes
9	5283	26	1.6	197	No
10	5282	27	3.7	218	Yes
11	5281	24	1.8	220	No
12	5280	24	3.4	212	Yes
13	5279	27	1.3	169	Yes
14	5278	28	3.5	191	Yes
15	5277	24	1.8	219	Yes
16	5262	28	5	205	Yes
17	5261	29	2.3	162	Yes
18	5260	25	4.9	180	Yes
19	5259	24	2.4	190	Yes
20	5258	26	1.9	185	Yes
21	5257	29	2.6	194	No
22	5256	23	1.8	192	Yes
23	5255	25	5	189	Yes
24	5254	25	4.1	183	No
25	5253	24	1.5	173	Yes
26	5252	26	4.9	219	No
27	5251	25	4.2	169	Yes
28	5250	26	3.3	160	Yes
29	5267	25	3.1	195	Yes
30	5273	28	4.7	188	No
Summary: 23 detections in 30 trials.					

Table 23: Statistic Performance Check for 80 MHz Bandwidth - FCC Radar Type 2

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 21, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 2					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5290	27	3.5	189	Yes
2	5295	28	5	220	No
3	5300	26	2.7	171	Yes
4	5305	24	4	211	Yes
5	5310	24	4	209	Yes
6	5320	25	2.7	210	Yes
7	5325	24	1.4	191	Yes
8	5330	26	1.3	184	Yes
9	5285	27	4.6	190	Yes
10	5280	24	4.4	209	No
11	5275	29	2.7	222	Yes
12	5270	25	1.8	186	Yes
13	5265	27	2.3	170	Yes
14	5260	26	1.3	191	Yes
15	5255	27	1.6	186	Yes
16	5250	28	2.8	199	Yes
17	5292	28	4	177	Yes
18	5294	27	1.3	230	Yes
19	5298	25	4.1	199	Yes
20	5303	27	4.4	220	Yes
21	5328	24	3.5	151	Yes
22	5322	28	2.4	226	Yes
23	5326	28	4.5	182	Yes
24	5288	27	2.8	151	Yes
25	5286	28	2.2	203	Yes
26	5282	24	3.1	150	No
27	5277	25	3.2	159	Yes
28	5252	26	2	194	Yes
29	5258	25	2.5	180	Yes
30	5254	26	3.8	220	No
Summary: 26 detections in 30 trials.					

Table 24: Statistic Performance Check for 20 MHz Bandwidth - FCC Radar Type 3

FCC 905462 D02 New Rules v02	
Tester:	Kerwinn Corpuz
Test Lab:	TUV Rheinland of North America, Inc.
Date:	August 21, 2020
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001
Manufacturer:	eero
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20

Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 3

Trial #	Test Freq. (MHz)	Nos. of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	5260	16	7.8	435	Yes
2	5261	18	7.7	436	Yes
3	5262	18	8	260	No
4	5263	17	6.4	492	Yes
5	5264	17	9.1	214	Yes
6	5265	18	10	201	Yes
7	5266	17	9	239	Yes
8	5267	18	9.2	240	Yes
9	5268	16	10	294	Yes
10	5269	16	6.4	264	Yes
11	5251	18	6.4	349	No
12	5251	18	8.8	237	Yes
13	5252	16	6.4	222	Yes
14	5253	18	6.4	386	Yes
15	5254	17	6.9	453	Yes
16	5255	18	7.7	378	Yes
17	5256	17	6.8	279	Yes
18	5257	17	7.4	247	Yes
19	5258	18	7	351	Yes
20	5259	16	8.5	361	Yes
21	5258	16	6.1	407	Yes
22	5251	16	8.6	360	No
23	5252	18	7.9	400	Yes
24	5253	16	8.4	495	No
25	5254	17	9.9	354	No
26	5269	17	6.4	429	Yes
27	5269	16	7.3	431	Yes
28	5268	17	9.4	243	Yes
29	5267	17	10	330	Yes
30	5266	17	9.4	293	Yes

Summary: 25 detections in 30 trials.

Table 25: Statistic Performance Check for 40 MHz Bandwidth - FCC Radar Type 3

FCC 905462 D02 New Rules v02	
Tester:	Kerwinn Corpuz
Test Lab:	TUV Rheinland of North America, Inc.
Date:	August 21, 2020
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001
Manufacturer:	eero
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40

Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 3

Trial #	Test Freq. (MHz)	Nos. of Pulses per Burst	Pulse Width (µsec)	PRI (µs)	Detection (yes/no)
1	5270	17	6.1	465	Yes
2	5289	17	9	226	Yes
3	5288	16	6	398	Yes
4	5287	17	7.6	271	No
5	5286	18	7.7	381	Yes
6	5285	17	9.5	395	No
7	5284	17	7.9	254	Yes
8	5283	17	7.7	452	No
9	5282	17	9.5	293	Yes
10	5281	16	9.6	356	Yes
11	5280	17	6.3	244	Yes
12	5279	18	8.4	388	Yes
13	5278	17	9.5	320	Yes
14	5277	18	9.1	395	No
15	5276	17	6.5	289	Yes
16	5275	17	9.9	433	Yes
17	5274	17	8.9	360	Yes
18	5259	16	9.5	371	No
19	5258	18	6.7	433	No
20	5257	17	7.1	343	No
21	5256	17	8.1	377	Yes
22	5255	18	8.2	220	Yes
23	5254	16	9.6	273	Yes
24	5253	17	8.2	215	Yes
25	5252	17	6.8	443	Yes
26	5251	16	8.2	306	Yes
27	5251	17	8.1	445	Yes
28	5271	17	7.8	488	Yes
29	5272	18	9.8	226	No
30	5273	17	8	412	Yes

Summary: 22 detections in 30 trials.

Table 26: Statistic Performance Check for 80 MHz Bandwidth - FCC Radar Type 3

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	September 14, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 3					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5290	17	10	472	Yes
2	5295	16	8.8	407	Yes
3	5300	16	6.6	231	Yes
4	5305	16	9.2	339	No
5	5310	18	6.9	423	Yes
6	5320	17	9.4	498	Yes
7	5325	17	9.5	444	Yes
8	5330	17	8.8	477	Yes
9	5285	18	6.7	423	Yes
10	5280	17	8.6	370	Yes
11	5275	16	9.3	445	Yes
12	5270	16	6.1	334	Yes
13	5265	17	9	261	Yes
14	5260	17	7.1	344	Yes
15	5255	16	9.9	201	Yes
16	5250	17	7.1	321	Yes
17	5292	16	8.8	469	Yes
18	5294	16	6	392	Yes
19	5298	17	7	235	No
20	5303	16	9.2	413	No
21	5328	17	8.7	341	Yes
22	5322	16	7.5	200	No
23	5326	17	8.4	362	Yes
24	5288	17	6.7	385	No
25	5286	17	6.4	414	Yes
26	5282	16	7.1	208	Yes
27	5277	18	7.3	343	No
28	5252	16	9.9	302	Yes
29	5258	18	6.4	497	Yes
30	5254	17	7	452	Yes
Summary: 24 detections in 30 trials.					

Table 27: Statistic Performance Check for 20 MHz Bandwidth - FCC Radar Type 4

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 21, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 4					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5260	13	13.5	331	Yes
2	5261	12	18.8	442	Yes
3	5262	15	19.5	261	No
4	5263	13	18	266	No
5	5264	15	13.2	461	No
6	5265	13	17.2	420	Yes
7	5266	15	12.2	302	Yes
8	5267	13	16.7	365	Yes
9	5268	16	15.9	242	No
10	5269	13	15.4	263	Yes
11	5251	15	12.3	435	No
12	5252	16	11.6	298	Yes
13	5253	14	12.4	417	Yes
14	5254	13	19.2	320	No
15	5251	14	14.3	446	Yes
16	5255	13	17.3	342	Yes
17	5256	15	19.1	225	Yes
18	5257	15	11.8	358	Yes
19	5258	14	18.8	288	Yes
20	5259	14	16.5	435	Yes
21	5258	13	18.3	440	Yes
22	5251	15	12.6	343	Yes
23	5252	14	14	358	Yes
24	5253	12	18	251	Yes
25	5254	14	11	391	Yes
26	5269	13	12.8	227	No
27	5269	13	14.8	307	Yes
28	5268	13	19	318	No
29	5267	15	15	213	Yes
30	5266	16	14.3	391	Yes
Summary: 22 detections in 30 trials.					

Table 28: Statistic Performance Check for 40 MHz Bandwidth - FCC Radar Type 4

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	August 21, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 4					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5270	16	11.3	383	Yes
2	5289	14	18.6	426	Yes
3	5288	15	13.4	287	Yes
4	5287	15	18.2	461	Yes
5	5286	13	16.5	321	No
6	5285	16	11.6	358	Yes
7	5284	12	12.3	347	Yes
8	5283	13	15.4	212	No
9	5282	14	17.2	495	Yes
10	5281	13	15.5	338	Yes
11	5280	14	17.6	427	Yes
12	5279	14	16.2	395	Yes
13	5278	16	15.3	326	Yes
14	5277	13	12.2	352	Yes
15	5276	12	14.4	329	No
16	5275	15	16.7	463	No
17	5274	13	18.1	480	Yes
18	5259	15	11.4	390	Yes
19	5258	15	17.9	376	Yes
20	5257	15	19.2	273	Yes
21	5256	13	16.1	279	Yes
22	5255	13	14.7	315	Yes
23	5254	13	19.4	389	Yes
24	5253	16	13.8	441	Yes
25	5252	13	16	452	No
26	5251	14	12.4	202	Yes
27	5251	16	12.4	368	Yes
28	5271	14	17.2	319	Yes
29	5272	13	11.4	497	Yes
30	5273	12	13.6	487	Yes
Summary: 25 detections in 30 trials.					

Table 29: Statistic Performance Check for 80 MHz Bandwidth - FCC Radar Type 4

FCC 905462 D02 New Rules v02					
Tester:	Kerwinn Corpuz				
Test Lab:	TUV Rheinland of North America, Inc.				
Date:	September 14, 2020				
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001				
Manufacturer:	eero				
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80				
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 4					
Trial #	**Test Freq. (MHz)**	**Nos. of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**	**Detection (yes/no)**
1	5290	12	17	360	Yes
2	5295	13	17	374	Yes
3	5300	15	17.6	245	Yes
4	5305	13	16.7	287	Yes
5	5310	13	17.9	344	Yes
6	5320	14	17.3	268	Yes
7	5325	13	16	469	Yes
8	5330	14	16.7	231	Yes
9	5285	13	16.6	207	Yes
10	5280	15	18.2	209	Yes
11	5275	14	11.5	412	Yes
12	5270	13	13.8	350	Yes
13	5265	15	11.4	223	Yes
14	5260	16	11.2	336	Yes
15	5255	13	18.4	253	No
16	5250	13	11	207	Yes
17	5295	13	16.6	366	No
18	5294	15	19.4	291	Yes
19	5298	13	19.7	213	Yes
20	5303	13	18	287	Yes
21	5328	15	16.3	378	Yes
22	5322	14	13.6	367	Yes
23	5326	14	19.7	413	Yes
24	5288	13	19.5	331	Yes
25	5286	15	19.8	359	Yes
26	5282	15	17.5	204	Yes
27	5277	12	12.6	268	Yes
28	5252	14	17.6	400	No
29	5258	16	15.3	376	Yes
30	5254	12	12.9	225	No
Summary: 26 detections in 30 trials.					

Table 30: Statistic Performance Check for FCC Radar Type 5 for 20 MHz Bandwidth

FCC 905462 D02 New Rules v02				
Tester:	Kerwinn Corpuz			
Test Lab:	TUV Rheinland of North America, Inc.			
Date:	August 21, 2020			
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001			
Manufacturer:	eero			
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20			
Center Freq. 5260 MHz		**Occ. BW Lower Freq.** 5252.2 MHz	**Occ. BW Upper Freq.** 5267.8 MHz	
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 5				
Trial #	**Center Freq. (MHz)**	**Chirp Width (MHz)**	**Subset**	**Detection (yes/no)**
1	5260	6	1	Yes
2	5260	12	1	Yes
3	5260	16	1	Yes
4	5260	18	1	Yes
5	5260	20	1	Yes
6	5260	17	1	Yes
7	5260	16	1	Yes
8	5260	5	1	Yes
9	5260	15	1	Yes
10	5260	12	1	Yes
11	5259	17	2	Yes
12	5259.4	18	2	Yes
13	5256.2	10	2	Yes
14	5259.8	19	2	Yes
15	5258.6	16	2	Yes
16	5254.6	6	2	Yes
17	5259.8	19	2	Yes
18	5259.4	18	2	Yes
19	5255.4	8	2	Yes
20	5257	12	2	Yes
21	5265.4	6	3	Yes
22	5265	7	3	No
23	5262.6	13	3	Yes
24	5261.4	16	3	Yes
25	5265.8	5	3	Yes
26	5265	7	3	Yes
27	5265.4	6	3	Yes
28	5261.8	15	3	Yes
29	5263.4	11	3	Yes
30	5262.6	13	3	Yes
Summary: 29 detections in 30 trials. See Appendix A for Type 5 Radar Pulse details.				

Table 31: Statistic Performance Check for FCC Radar Type 5 for 40 MHz Bandwidth

FCC 905462 D02 New Rules v02				
Tester:	Kerwinn Corpuz			
Test Lab:	TUV Rheinland of North America, Inc.			
Date:	August 21, 2020			
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001			
Manufacturer:	eero			
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40			
Center Freq. 5270 MHz		**Occ. BW Lower Freq.** 5254 MHz		**Occ. BW Upper Freq.** 5286 MHz
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 5				
Trial #	**Center Freq. (MHz)**	**Chirp Width (MHz)**	**Subset**	**Detection (yes/no)**
1	5270	15	1	Yes
2	5270	14	1	Yes
3	5270	20	1	Yes
4	5270	13	1	Yes
5	5270	6	1	Yes
6	5270	14	1	Yes
7	5270	15	1	Yes
8	5270	12	1	Yes
9	5270	7	1	Yes
10	5270	15	1	Yes
11	5259.6	14	2	No
12	5260	15	2	Yes
13	5256	5	2	Yes
14	5261.6	19	2	Yes
15	5257.6	9	2	Yes
16	5257.6	9	2	Yes
17	5256.8	7	2	Yes
18	5257.6	9	2	Yes
19	5260.8	17	2	Yes
20	5256	5	2	Yes
21	5278.8	18	3	Yes
22	5280.4	14	3	Yes
23	5279.6	16	3	Yes
24	5282.4	9	3	Yes
25	5282.8	8	3	Yes
26	5284	5	3	Yes
27	5282	10	3	Yes
28	5278.8	18	3	Yes
29	5283.6	6	3	Yes
30	5283.2	7	3	Yes
Summary: 29 detections in 30 trials. See Appendix A for Type 5 Radar Pulse details.				

Table 32: Statistic Performance Check for FCC Radar Type 5 for 80 MHz Bandwidth

FCC 905462 D02 New Rules v02				
Tester:	Kerwinn Corpuz			
Test Lab:	TUV Rheinland of North America, Inc.			
Date:	August 21, 2020			
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001			
Manufacturer:	eero			
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80			
Center Freq. 5290 MHz		**Occ. BW Lower Freq.** 5256.9 MHz		**Occ. BW Upper Freq.** 5323.1 MHz
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 5				
Trial #	**Center Freq. (MHz)**	**Chirp Width (MHz)**	**Subset**	**Detection (yes/no)**
1	5290	17	1	Yes
2	5290	8	1	Yes
3	5290	17	1	Yes
4	5290	18	1	Yes
5	5290	11	1	Yes
6	5290	7	1	Yes
7	5290	10	1	Yes
8	5290	20	1	Yes
9	5290	20	1	Yes
10	5290	16	1	Yes
11	5264.5	19	2	Yes
12	5263.7	17	2	Yes
13	5261.7	12	2	Yes
14	5261.7	12	2	Yes
15	5264.5	19	2	Yes
16	5263.7	17	2	Yes
17	5260.9	10	2	Yes
18	5259.3	6	2	No
19	5264.9	20	2	Yes
20	5262.9	15	2	Yes
21	5318.7	11	3	Yes
22	5317.9	13	3	Yes
23	5319.9	8	3	No
24	5315.9	18	3	Yes
25	5315.5	19	3	Yes
26	5317.9	13	3	Yes
27	5316.3	17	3	Yes
28	5319.1	10	3	Yes
29	5320.7	6	3	No
30	5319.9	8	3	No
Summary: 26 detections in 30 trials. See Appendix A for Type 5 Radar Pulse details.				

Table 33: Statistic Performance Check for FCC Radar Type 6 for 20 MHz Bandwidth

FCC 905462 D02 New Rules v02		
Tester:	Kerwinn Corpuz	
Test Lab:	TUV Rheinland of North America, Inc.	
Date:	August 21, 2020	
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001	
Manufacturer:	eero	
Test:	data transfer continuously (iPerf app) at 5260 MHz, 11ACVHT20	
Rohde & Schwarz K350 Pulse Sequencer DFS - RADAR TYPE 6		
Trial #	**Radar Type 6 Files**	**Detection (yes/no)**
1	20MHZ-T6-TRIAL-1	Yes
2	20MHZ-T6-TRIAL-2	Yes
3	20MHZ-T6-TRIAL-3	Yes
4	20MHZ-T6-TRIAL-4	Yes
5	20MHZ-T6-TRIAL-5	Yes
6	20MHZ-T6-TRIAL-6	Yes
7	20MHZ-T6-TRIAL-7	Yes
8	20MHZ-T6-TRIAL-8	Yes
9	20MHZ-T6-TRIAL-9	Yes
10	20MHZ-T6-TRIAL-10	Yes
11	20MHZ-T6-TRIAL-11	Yes
12	20MHZ-T6-TRIAL-12	Yes
13	20MHZ-T6-TRIAL-13	Yes
14	20MHZ-T6-TRIAL-14	Yes
15	20MHZ-T6-TRIAL-15	Yes
16	20MHZ-T6-TRIAL-16	Yes
17	20MHZ-T6-TRIAL-17	Yes
18	20MHZ-T6-TRIAL-18	Yes
19	20MHZ-T6-TRIAL-19	Yes
20	20MHZ-T6-TRIAL-20	Yes
21	20MHZ-T6-TRIAL-21	Yes
22	20MHZ-T6-TRIAL-22	Yes
23	20MHZ-T6-TRIAL-23	Yes
24	20MHZ-T6-TRIAL-24	Yes
25	20MHZ-T6-TRIAL-25	Yes
26	20MHZ-T6-TRIAL-26	Yes
27	20MHZ-T6-TRIAL-27	Yes
28	20MHZ-T6-TRIAL-28	Yes
29	20MHZ-T6-TRIAL-29	Yes
30	20MHZ-T6-TRIAL-30	Yes
Summary: 30 detections in 30 trials. See Appendix A for Type 6 Radar Pulse hopping patterns.		

Table 34: Statistic Performance Check for FCC Radar Type 6 for 40 MHz Bandwidth

FCC 905462 D02 New Rules v02		
Tester:	Kerwinn Corpuz	
Test Lab:	TUV Rheinland of North America, Inc.	
Date:	August 21, 2020	
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001	
Manufacturer:	eero	
Test:	data transfer continuously (iPerf app) at 5270 MHz, 11ACVHT40	
Rohde & Schwarz K350 Pulse Sequencer - RADAR TYPE 6		
Trial #	**Radar Type 6 Files**	**Detection (yes/no)**
1	40MHZ-T6-TRIAL-1	Yes
2	40MHZ-T6-TRIAL-2	Yes
3	40MHZ-T6-TRIAL-3	Yes
4	40MHZ-T6-TRIAL-4	Yes
5	40MHZ-T6-TRIAL-5	Yes
6	40MHZ-T6-TRIAL-6	Yes
7	40MHZ-T6-TRIAL-7	Yes
8	40MHZ-T6-TRIAL-8	Yes
9	40MHZ-T6-TRIAL-9	Yes
10	40MHZ-T6-TRIAL-10	Yes
11	40MHZ-T6-TRIAL-11	Yes
12	40MHZ-T6-TRIAL-12	Yes
13	40MHZ-T6-TRIAL-13	Yes
14	40MHZ-T6-TRIAL-14	Yes
15	40MHZ-T6-TRIAL-15	Yes
16	40MHZ-T6-TRIAL-16	Yes
17	40MHZ-T6-TRIAL-17	Yes
18	40MHZ-T6-TRIAL-18	Yes
19	40MHZ-T6-TRIAL-19	Yes
20	40MHZ-T6-TRIAL-20	Yes
21	40MHZ-T6-TRIAL-21	Yes
22	40MHZ-T6-TRIAL-22	Yes
23	40MHZ-T6-TRIAL-23	Yes
24	40MHZ-T6-TRIAL-24	Yes
25	40MHZ-T6-TRIAL-25	Yes
26	40MHZ-T6-TRIAL-26	Yes
27	40MHZ-T6-TRIAL-27	Yes
28	40MHZ-T6-TRIAL-28	Yes
29	40MHZ-T6-TRIAL-29	Yes
30	40MHZ-T6-TRIAL-30	Yes
Summary: 30 detections in 30 trials. See Appendix A for Type 6 Radar Pulse hopping patterns.		

Table 35: Statistic Performance Check for FCC Radar Type 6 for 80 MHz Bandwidth

FCC 905462 D02 New Rules v02		
Tester:	Kerwinn Corpuz	
Test Lab:	TUV Rheinland of North America, Inc.	
Date:	August 21, 2020	
Device:	eero 6 and eero 6 Extender, Model N010001 and Q010001	
Manufacturer:	eero	
Test:	data transfer continuously (iPerf app) at 5290 MHz, 11ACVHT80	
Rohde & Schwarz K350 Pulse Sequencer - RADAR TYPE 6		
Trial #	**Radar Type 6 Files**	**Detection (yes/no)**
1	80MHZ-T6-TRIAL-1	Yes
2	80MHZ-T6-TRIAL-2	Yes
3	80MHZ-T6-TRIAL-3	Yes
4	80MHZ-T6-TRIAL-4	Yes
5	80MHZ-T6-TRIAL-5	Yes
6	80MHZ-T6-TRIAL-6	Yes
7	80MHZ-T6-TRIAL-7	Yes
8	80MHZ-T6-TRIAL-8	Yes
9	80MHZ-T6-TRIAL-9	Yes
10	80MHZ-T6-TRIAL-10	Yes
11	80MHZ-T6-TRIAL-11	Yes
12	80MHZ-T6-TRIAL-12	Yes
13	80MHZ-T6-TRIAL-13	Yes
14	80MHZ-T6-TRIAL-14	Yes
15	80MHZ-T6-TRIAL-15	Yes
16	80MHZ-T6-TRIAL-16	Yes
17	80MHZ-T6-TRIAL-17	Yes
18	80MHZ-T6-TRIAL-18	Yes
19	80MHZ-T6-TRIAL-19	Yes
20	80MHZ-T6-TRIAL-20	Yes
21	80MHZ-T6-TRIAL-21	Yes
22	80MHZ-T6-TRIAL-22	Yes
23	80MHZ-T6-TRIAL-23	Yes
24	80MHZ-T6-TRIAL-24	Yes
25	80MHZ-T6-TRIAL-25	Yes
26	80MHZ-T6-TRIAL-26	Yes
27	80MHZ-T6-TRIAL-27	Yes
28	80MHZ-T6-TRIAL-28	Yes
29	80MHZ-T6-TRIAL-29	Yes
30	80MHZ-T6-TRIAL-30	Yes
Summary: 30 detections in 30 trials. See Appendix A for Type 6 Radar Pulse hopping patterns.		

5 Test Equipment Use List

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal mm/dd/yy	Next Cal mm/dd/yy
Spectrum Analyzer	Agilent	N9038A	MY52260210	02/15/2020	02/15/2021
Vector Signal Generator	Rhode Schwarz	SMU 200A	1141.2005.02	09/25/2020	09/25/2022
Horn Antenna (TX)	A.H. Systems, Inc.	SAS-571	752	NCR	NCR
Horn Antenna (RX)	EMCO	3115	9602-4676	05/03/2019	05/03/2021

* NCR = No Calibration Required

6 Test Setup Photo

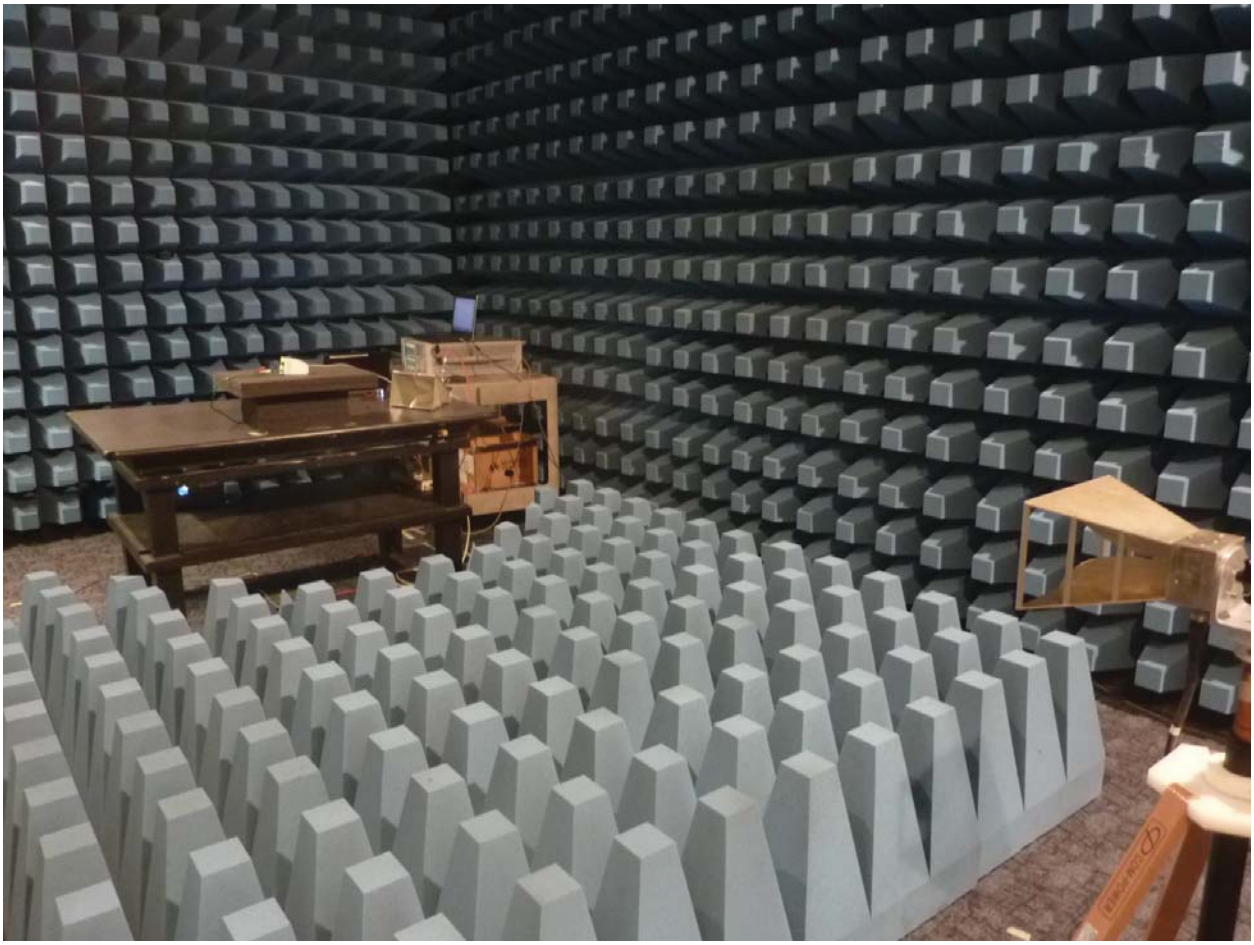


Figure 21: DFS Test Setup Photo for Master – Radiated Method – View 1

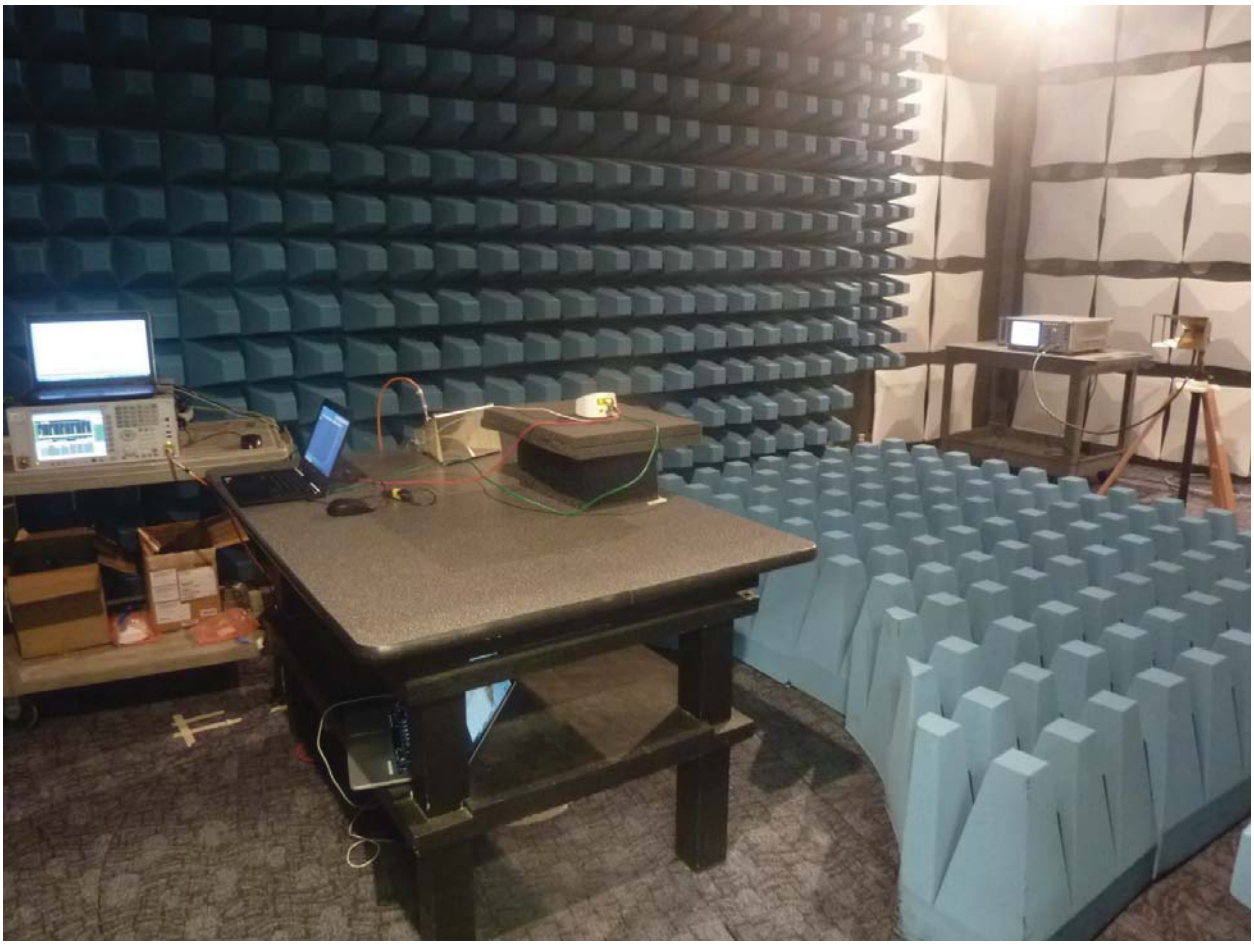


Figure 22: DFS Test Setup Photo for Master – Radiated Method – View 2

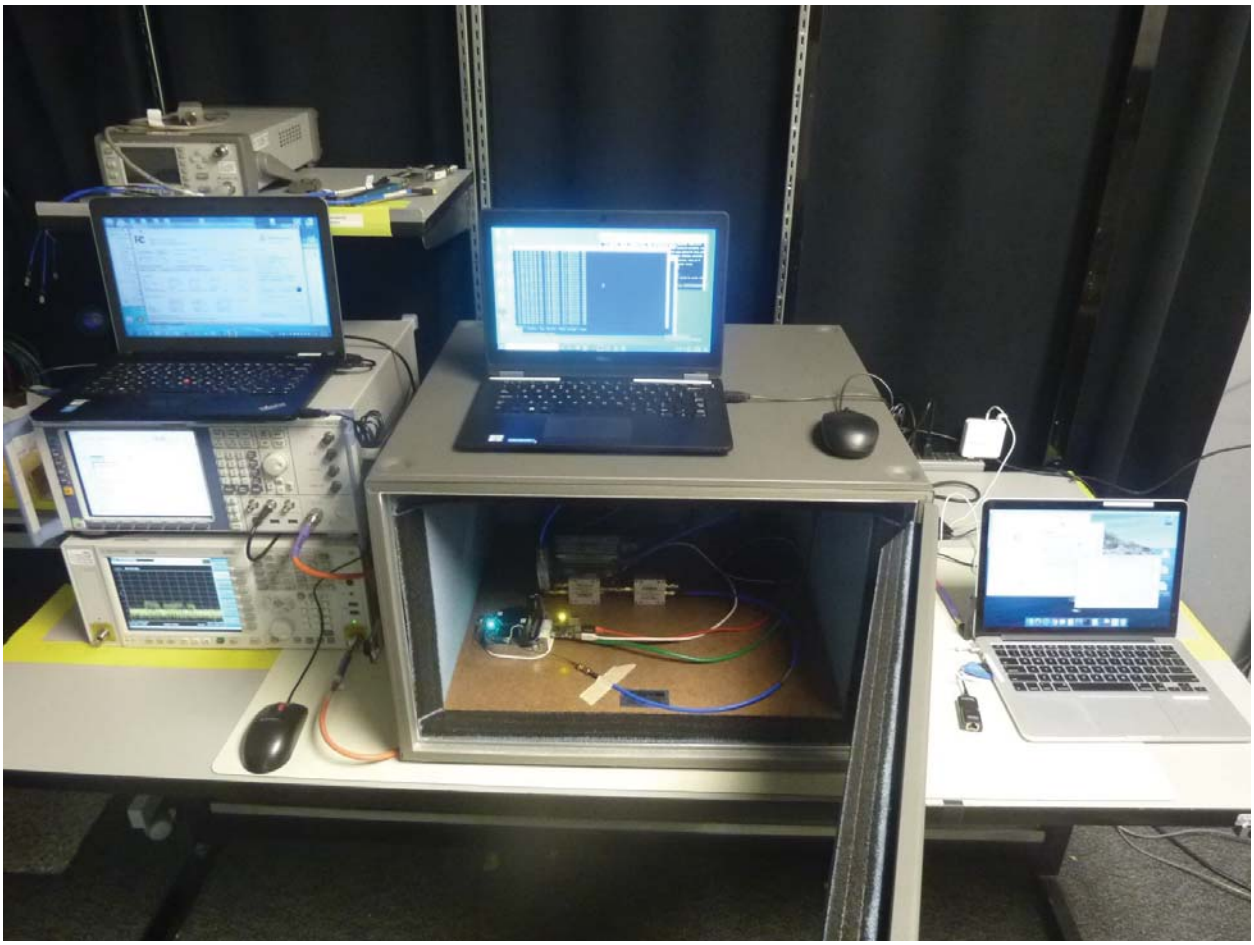


Figure 23: DFS Test Setup Photo for Master – Conducted Method – View 1

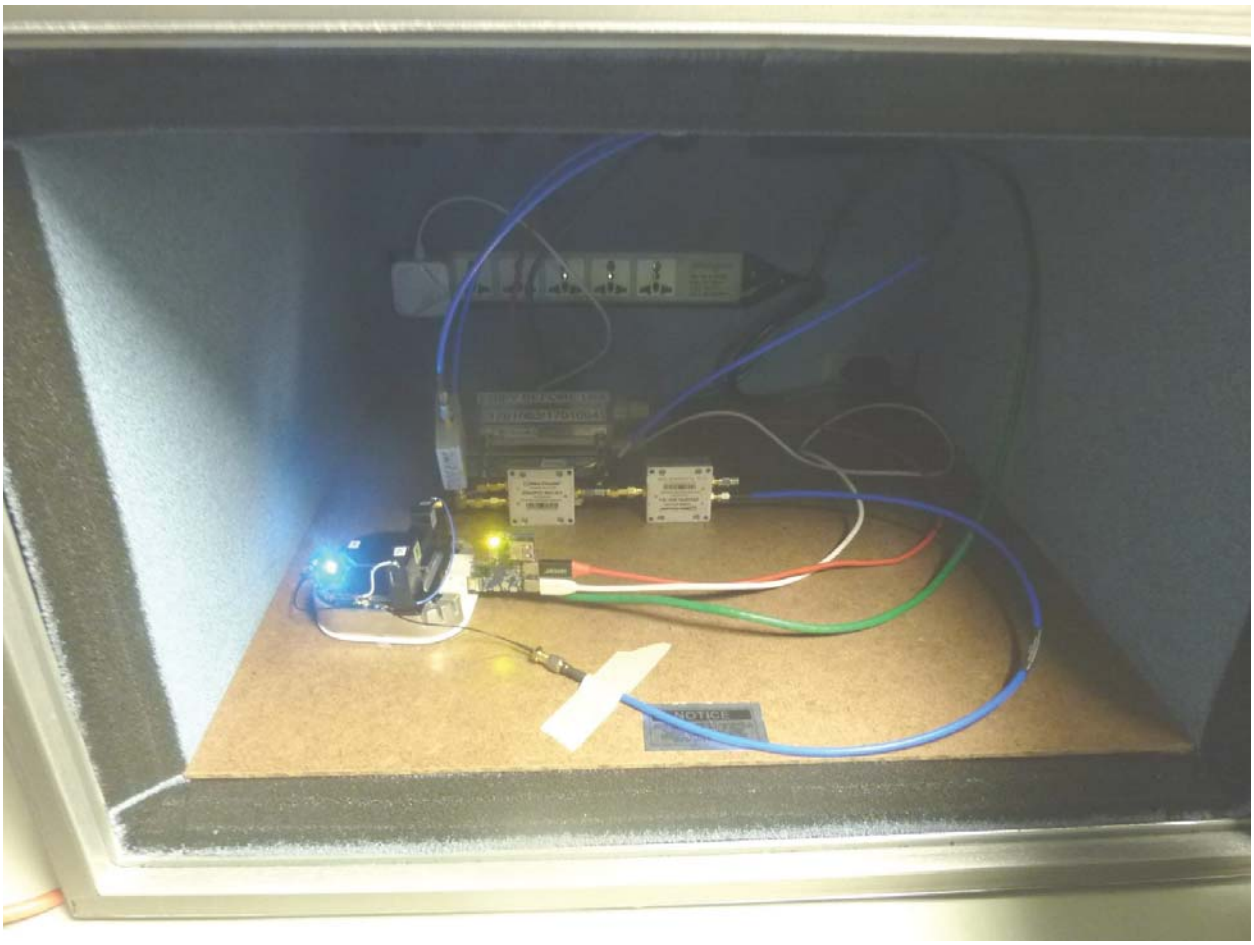


Figure 24: DFS Test Setup Photo for Master – Conducted Method – View 2

7 DFS Test Plan

7.1 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.

7.2 Customer

Table 36: Customer Information

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

Table 37: Technical Contact Information

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

7.3 Equipment Under Test (EUT)

Table 38: EUT Specifications

EUT Specifications	
AC Input	100-240V AC, 50 – 60 Hz, 0.5A
DC Input	5 VDC, 3 A, 15W
Environment	Indoor
Operating Temperature Range:	0 to 35 degrees C
Multiple Feeds:	☐ Yes and how many ☒ No
Product Marketing Name (PMN)	N010001 and Q010001
Hardware Version Identification Number (HVIN)	N010001 and Q010001
Firmware Version Identification Number (FVIN)	eeroOS 5.0.0
802.11-radio modules	
Operating Mode	802.11a, 802.11b, 802.11g, 802.11n (HT20 & HT40), 802.11ac (VHT20, VHT40 & VHT80)
Transmitter Frequency Band	2.4 – 2.4835 GHz, 5.15– 5.25 GHz, 5.25– 5.35 GHz, 5.47– 5.72 GHz, and 5.725– 5.85 GHz
Total Rated Power Output	23.75 dBm
Modulation Type	☒ Thread (Zigbee) ☒ BLE ☒ DSSS ☒ OFDM ☐ Other describe:
Data Rate	802.11a: 1 Spatial Stream: 6, 9,12, 18, 24, 36, 48, 54 Mbps 802.11n HT20: 2 Spatial Streams: 13, 26, 39, 52, 78, 104, 117, 130 Mbps 802.11n HT40: 2 Spatial Streams: 27, 54, 81, 108, 162, 216, 243, 270 Mbps 802.11ac VHT20: 2 Spatial Streams: 13, 26, 39, 52, 78, 104, 117, 130, 156 Mbps 802.11ac VHT40: 2 Spatial Streams: 27, 54, 81, 108, 240, 270, 300, 360, 400 Mbps 802.11ac VHT80: 2 Spatial Streams: 58.5, 117, 175.5, 234, 351, 468, 526.5, 585, 702, 780 Mbps
TX/RX Chain (s)	MIMO (2x2)
Directional Gain Type	☒ Correlated ☒ Beam-Forming ☐ Other describe:

EUT Specifications	
Type of Equipment	☒ Table Top ☐ Wall-mount ☐ Floor standing cabinet ☐ Other:
Note: All two chains will be on / transmitted at all time.	

Table 39: 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?
RJ45	CAT-5 Ethernet	☒ No	☒ Metric: 2 m	☒ N/A
USB	USB	☐ No	☒ Metric: 1 m	☒ N/A
Note: The RJ45 cable were terminated to Host Ethernet port.				

Table 40: Supported Equipment

Equipment	Manufacturer	Model	Serial	Used for
Laptop	Dell	Latitude E5450	HRR5N72	Configure EUT (Master)
Laptop	Apple	Mac Pro	C02PX426FVH8	Channel Loading (Client)
Note: None.				

Table 41: Description of Sample used for Testing

Device	Serial	FCC 06-96	RF Connection
Master	NA77-0071-56HX-R9R7	Use for 20 MHz bandwidth DFS tests	Radiated and Conducted Method
Master	NA77-0071-56HX-R9R7	Use for 40 MHz bandwidth DFS tests	
Master	NA77-0071-56HX-R9R7	Use for 80 MHz bandwidth DFS tests	

Table 42: Test Mode for DFS

Test	20 MHz BW	40 MHz BW	80 MHz BW	Comments
DFS Detection Threshold	5260 MHz, 2 Streams	5270 MHz, 2 Streams	5290 MHz, 2 Streams	EUT transmits more than 200 mW. Calculate the detection threshold and used to verify all 6 types of waveforms.
U-NII Detection Bandwidth	5260 MHz, 2 Streams	5270 MHz, 2 Streams	5290 MHz, 2 Streams	Inject verified Type 1 waveforms with EUT.
Performance Requirements Checks	5260 MHz, 2 Streams	5270 MHz, 2 Streams	5290 MHz, 2 Streams	No traffic.
In-Service Monitoring	5260 MHz, 2 Streams	5270 MHz, 2 Streams	5290 MHz, 2 Streams	>17% data traffic using iPerf application at the client end.

Test	20 MHz BW	40 MHz BW	80 MHz BW	Comments
Radar Statistic Performance Check	5260 MHz, 2 Streams	5270 MHz, 2 Streams	5290 MHz, 2 Streams	>17% data traffic using iPerf application at the client end.

Note: 1. 5260 MHz was selected to represent 20 MHz bandwidth DFS characteristics of EUT.
2. 5270 MHz was selected to represent 40 MHz bandwidth DFS characteristics of EUT.
3. 5290 MHz was selected to represent 80 MHz bandwidth DFS characteristics of EUT.
4. All two chains will be on at all time.

7.4 Test Specification

Table 43: Test Specifications

Dynamic Frequency Selection	
Regulation Rules / Standard	**Requirement**
CFR 47 Part 15.407(h) 2020, RSS-247 (6.3) 2017 and KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02	All