TEST REPORT

Applicant:	Ruijie Networks Co., Ltd.
Address:	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China
Equipment Type:	1200M Dual Band Wi-Fi Range Extender
Model Name:	RG-REX12
Brand Name:	Reyee
FCC ID:	2AX5J-REX12
ISED Number:	27676-REX12
Test Standard:	47 CFR Part 15 Subpart E RSS-247 Issue 2 (refer section 3.1)
Test Date:	Jul. 15, 2022 – Aug. 08, 2022
Date of Issue:	Aug. 16, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Yu Yingyuan **Checked by:** Ye Hongji **Approved by:** Liao Jianming (Technical Director)

Revision History

Version	Issue Date	Revisions
Rev. 01	Aug. 16, 2022	Initial Issue

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A.
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Ruijie Networks Co., Ltd.
Address	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

2.2 Manufacturer Information

Manufacturer	Ruijie Networks Co., Ltd.
Address	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	1200M Dual Band Wi-Fi Range Extender
Under Test Model Name	RG-REX12
Series Model Name	N/A
Description of Model name differentiation	N/A
Serial Number	G1RQ5QT000742
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

Network and Wireless connectivity	2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range		5250 MHz to 5350 MHz, 5470 MHz to 5725 MHz
Product Type		☒ Mobile ☐ Portable ☐ Fix Location
Maximum Output Power		5250 MHz to 5350 MHz: 21.40 dBm 5470 MHz to 5725 MHz: 21.78 dBm
Antenna Type	Main Antenna	Dipole Antenna
	Aux. Antenna	
Antenna Gain	Main Antenna	5250 MHz to 5350 MHz: 3.0 dBi 5470 MHz to 5725 MHz: 3.0 dBi
	Aux. Antenna	5250 MHz to 5350 MHz: 3.0 dBi 5470 MHz to 5725 MHz: 3.0 dBi
Note: This value of antenna gain is provided by the applicant.		

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E	Unlicensed National Information Infrastructure Devices
2	KDB Publication 905462 D02	UNII DFS Compliance Procedures New Rulesv02
3	KDB Publication 789033 D02v01r04	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
4	RSS-247 Issue 2	Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exemp Local Area Network (LE-LAN) Devices

3.2 Verdict

No.	Description	FCC Part No.	RSS Part No.	Verdict	Remark
1	U-NII Detection Bandwidth	15.407	RSS-247, 6.3	Pass	Applicable
2	Initial Channel Availability Check Time	15.407	RSS-247, 6.3	Pass	Applicable
3	Radar Burst at the Beginning of the Channel Availability Check Time	15.407	RSS-247, 6.3	Pass	Applicable
4	Radar Burst at the End of the Channel Availability Check Time	15.407	RSS-247, 6.3	Pass	Applicable
5	Channel Move Time	15.407	RSS-247, 6.3	Pass	Applicable
6	Channel Closing Transmission Time	15.407	RSS-247, 6.3	Pass	Applicable
7	Non- Occupancy Period	15.407	RSS-247, 6.3	Pass	Applicable
8	Statistical Performance Check	15.407	RSS-247, 6.3	Pass	Applicable
9	Uniform spreading	15.407	RSS-247, 6.3	Pass	Applicable

3.3 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.82°C
Humidity	4.1%

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	38% to 65%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+20.0℃ to +24.3℃
	LT (Low Temperature)	+5℃
	HT (High Temperature)	+40℃
Working Voltage of the EUT	NV (Normal Voltage)	120 V
	LV (Low Voltage)	100 V
	HV (High Voltage)	240 V

4.2 Test Equipment List

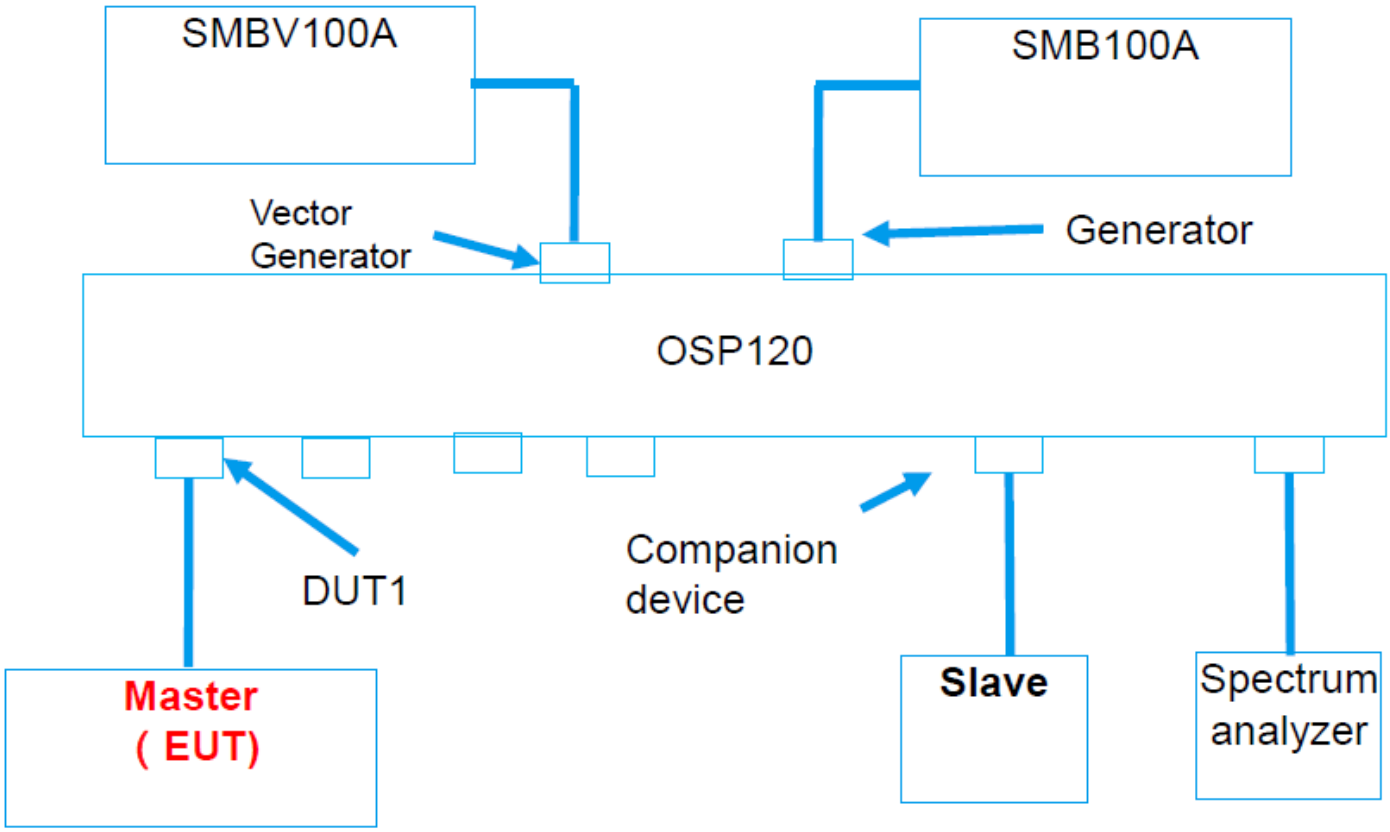
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2021.08.09	2022.08.08
Signaling Unit	ROHDE&SCHWARZ	CMW500	142028	2022.05.19	2023.05.18
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	260592	2022.02.09	2023.02.08
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2021.08.24	2022.08.23
Switch Unit with OSPB157	ROHDE&SCHWARZ	OSP120	101270	2022.05.19	2023.05.18
Power Sensor	ROHDE&SCHWARZ	NRP18S	102521	2022.03.09	2023.03.08

4.3 Test Software List

Description	Manufacturer	Software Version	Serial No.	Applicable test Setup
BL410R	BALUN	V2.1.1.488	N/A	The section 4.4.1

4.4 Description of Test Setup

4.4.1Conducted Test Setup Configuration



The UUT is a U-NII Device operating in Client mode without radar detection. The radar test signals are injected into the Master Device.

(Diagram 1)

5 Test Type and Test Results

5.1 DFS

5.1.1 U-NII DFS Rule Requirements

5.1.1.1 Working Mode and Required Test Items

The manufacturer shall state whether the UUT is capable of operating as a Master and/or a Client. If the UUT is capable of operating in more than one operating mode then each operating mode shall be tested separately. See tables 1 and 2 for the applicability of DFS requirements for each of the operational modes.

APPLICABILITY OF DFS REQUIREMENTS PRIOR TO USE A CHANNEL

Requirement	Operational Mode		
	Master	Client without radar detection	Client with radar detection
Non-Occupancy Period	✓	✓	✓
DFS Detection Threshold	✓	Not required	✓
Channel Availability Check Time	✓	Not required	Not required
Uniform Spreading	✓	Not required	Not required
U-NII Detection Bandwidth	✓	Not required	✓

APPLICABILITY OF DFS REQUIREMENTS DURING NORMAL OPERATION

Requirement	Operational Mode		
	Master	Client without radar detection	Client with radar detection
DFS Detection Threshold	✓	Not required	✓
Channel Closing Transmission Time	✓	✓	✓
Channel Move Time	✓	✓	✓
U-NII Detection Bandwidth	✓	Not required	✓

5.1.2 Test Limits and Radar Signal Parameters

Detection Thereshold Values

DFS DETECTION THRESHOLDS FOR MASTER DEVICES AND CLIENT DEVICES WITH RADAR DETECTION

Maximum Transmit Power	Value(See Note [1 & 2])
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 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.	

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 Note [1&2].
U-NII Detection Bandwidth	100% of the UNII transmission power bandwidth. See Note [3].
Note [1]: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows: • For the Short Pulse Radar Test Signals this instant is the end of the Burst. • For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated. • For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform. 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 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Parameters of DFS Test Signals

Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

SHORT PULSE RADAR TEST WAVEFORMS

Radar Type	Pulse Width (μsec)	PRI(μsec)	Numberof Pulses	MinimumPercentage ofSuccessfulDetection	MinimumN umber ofTrials
0	1	1428	18	See Note	See Note
1	1	Test A: 15 uniquePRI valuesrandomly selectedfrom the list of 23PRI values in Table5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{PRI_{\mu sec}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
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: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel movetime, and channel closing time tests.					

LONG PULSE RADAR TEST WAVEFORM

Radar Type	Pulse Width(μsec)	Chirp Width (MHz)	PRI (μsec)	Numberof Pulsesper Burst	Numberof Bursts	MinimumPercentage ofSuccessfulDetection	MinimumNumber ofTrials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

FREQUENCY HOPPING RADAR TEST WAVEFORM

Radar Type	Pulse Width (μsec)	PRI (μsec)	PulsesperHop	HoppingRate (kHz)	HoppingSequenceLength (msec)	MinimumPercentage ofSuccessfulDetection	MinimumNumber ofTrials
6	1	333	9	0.333	300	70%	30

5.1.2.1 Test Setup

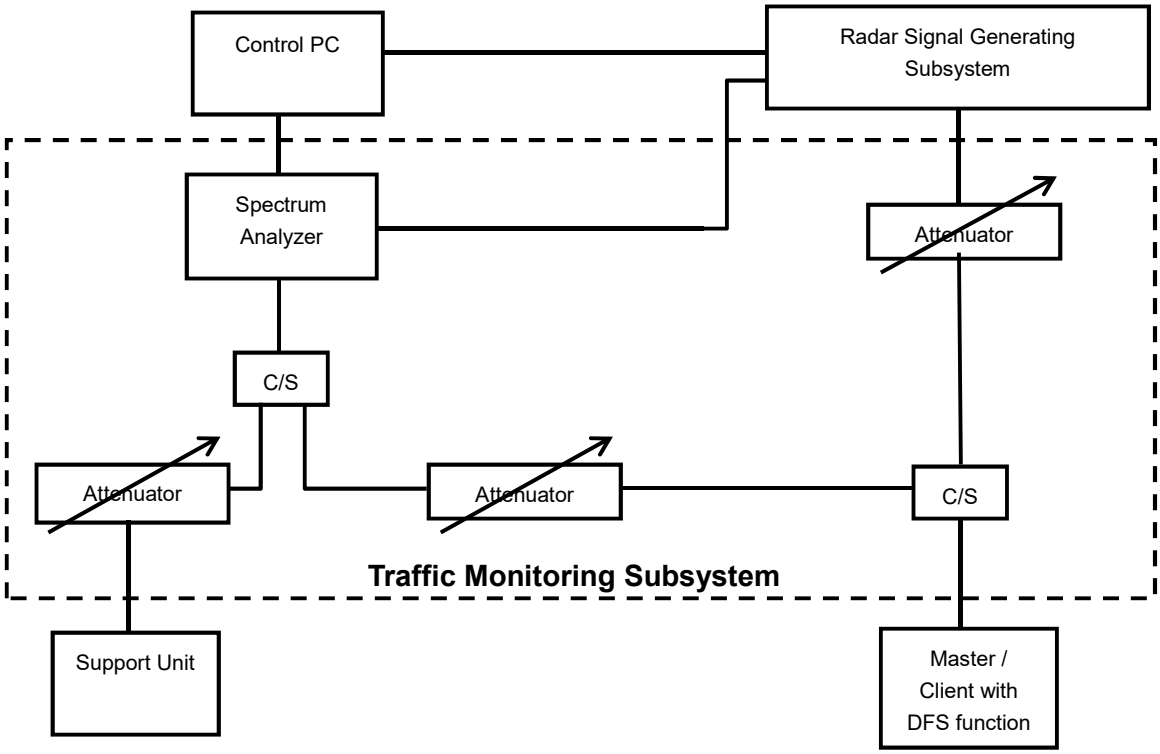
See 4.4 for test setup description for the radiated test. The photo of test setup please refer to ANNEX B.

5.1.2.2 Test Procedure

DFS MEASUREMENT SYSTEM:

A complete DFS Measurement System consists of two subsystems: (1) the Radar Signal Generating Subsystem and (2) the Traffic Monitoring Subsystem. The control PC is necessary for generating the Radar waveforms in Table 6, 7 and 8. The traffic monitoring subsystem is specified to the type of unit under test (UUT).

Conducted setup configuration of DFS Measurement System



The test transmission will always be from the Master Device to the Client Device. While the Client device is set up to associate with the Master device and play the MPEG file (6 $\frac{1}{2}$ Magic Hours) from Master device, the designated MPEG test file and instructions are located at:http://ntiacsd.ntia.doc.gov/dfs/.

IN-SERVICE MONITORING FOR CHANNEL MOVE TIME, CHANNEL CLOSING TRANSMISSION TIME AND NON-OCCUPANCY PERIOD

These tests define how the following DFS parameters are verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time, and Non-Occupancy Period.

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold+1dB is generated on the Operating Channel of the U-NII device.

UUT operating as a Client Device will associate with the (Master) at Mid Channel. DFS testing while the System testing was performed with the designated MPED test file that streams full motion video at 30 frames per second from the Master to the Client IP based system.

At time T0 the RADAR wave form generator sends a Burst of pulses for each of the radar types.

Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time results to the limits defined in the DFS Response requirement values table.

CHANNEL CLOSING TRANSMISSION TIME- MEASUREMENT

The program will calculate the closing time base on the spectrum analyzer result. The result will be calculated based on FCC procedure.

C = N * Dwell

where C is the Closing Time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and Dwell is the dwell time per bin.

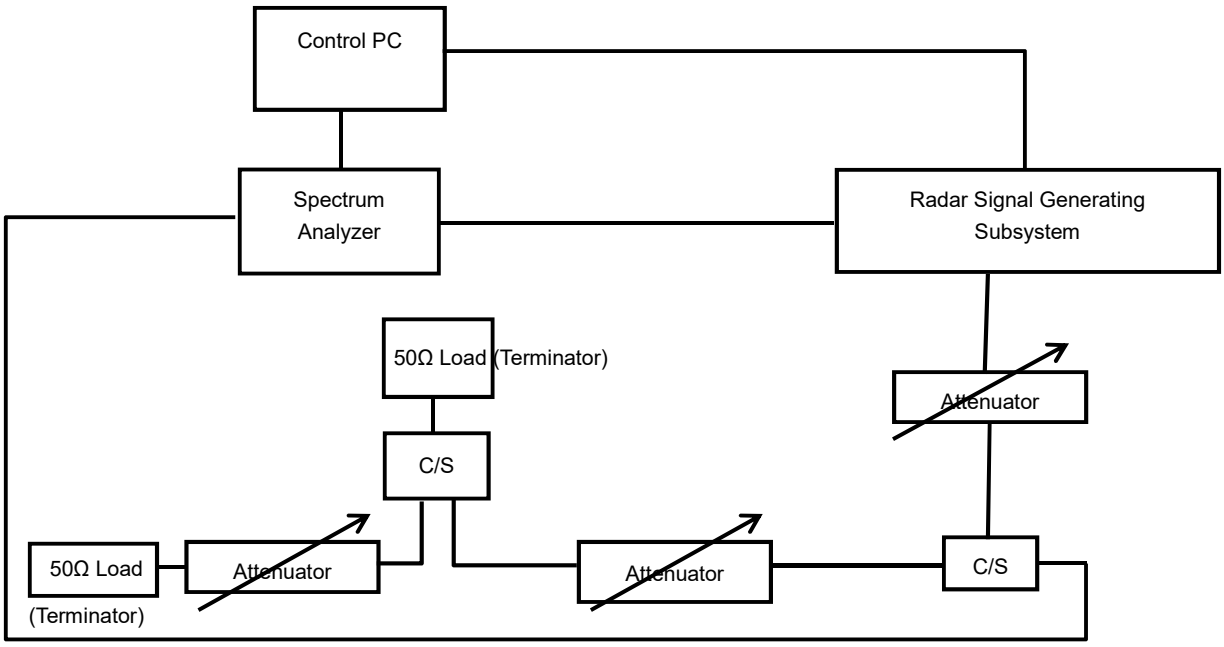
Dwell = S / B

where Dwell is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins.

CALIBRATION OF DFS DETECTION THRESHOLD LEVEL:

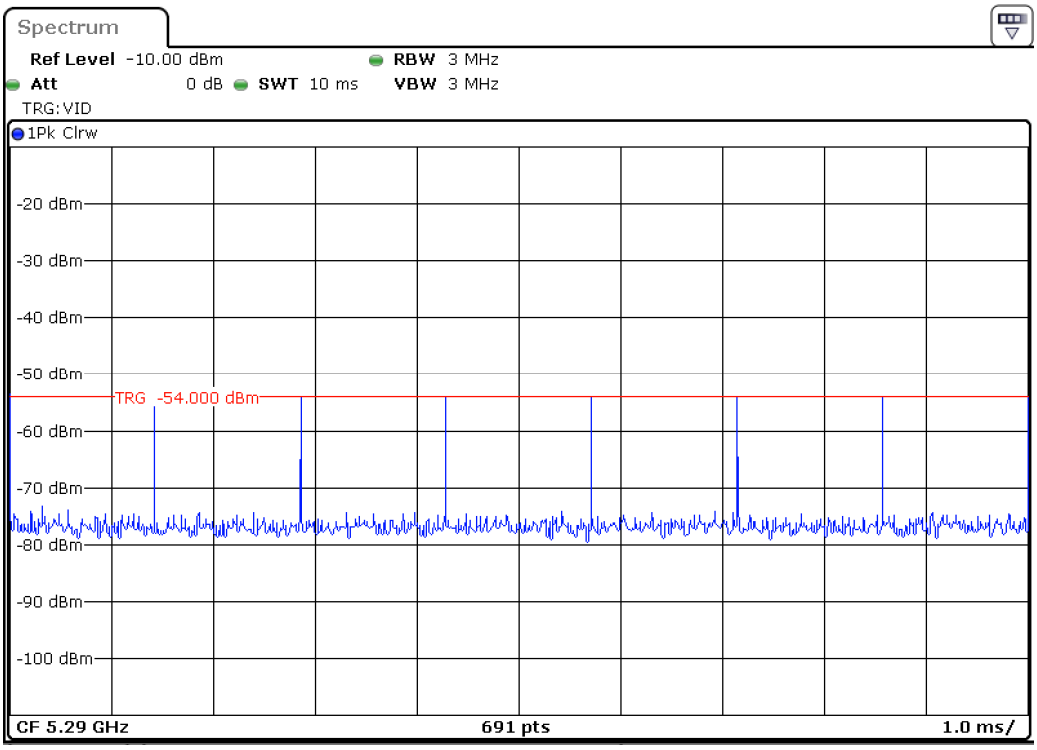
The measured channel is 5500 MHz in 20MHz Bandwidth and 5530MHz in 80MHz Bandwidth. The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) or Client Device with Radar Detection, measured the channel closing transmission time and channel move time. The Master antenna gain is 3dBi and required detection threshold is-58dBm (= -62 +1 +3)dBm. The calibrated conducted detection threshold level is set to -58dBm.

Conducted setup configuration of Calibration of DFS Detection Threshold Level

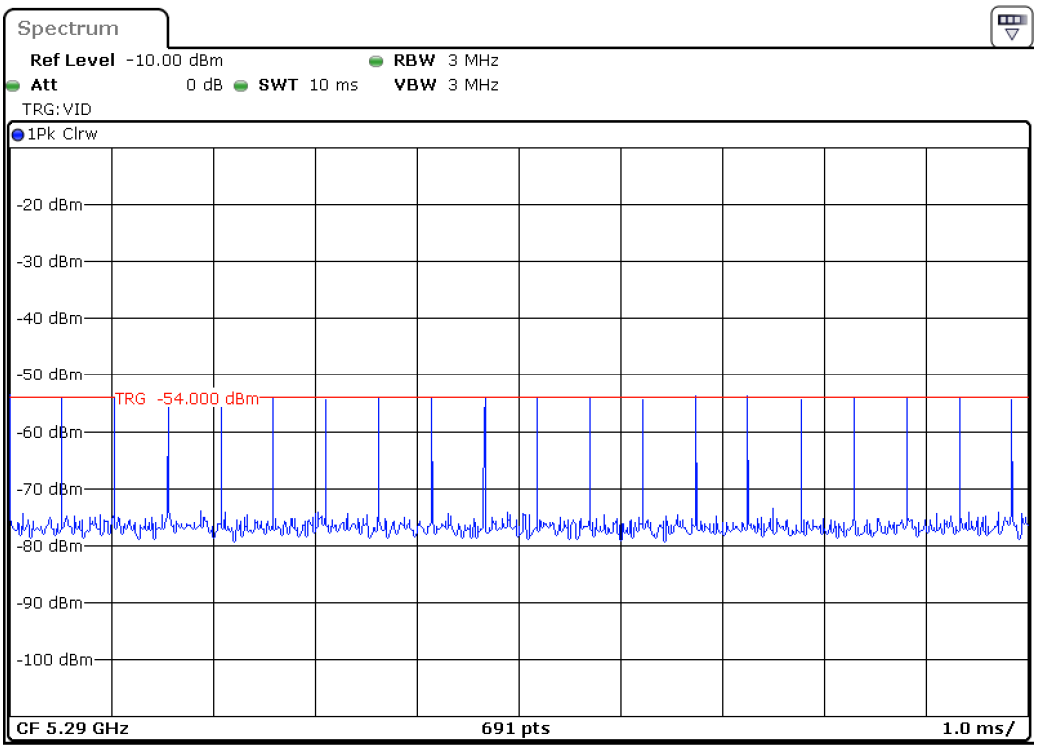


Radar Waveform Calibration Result

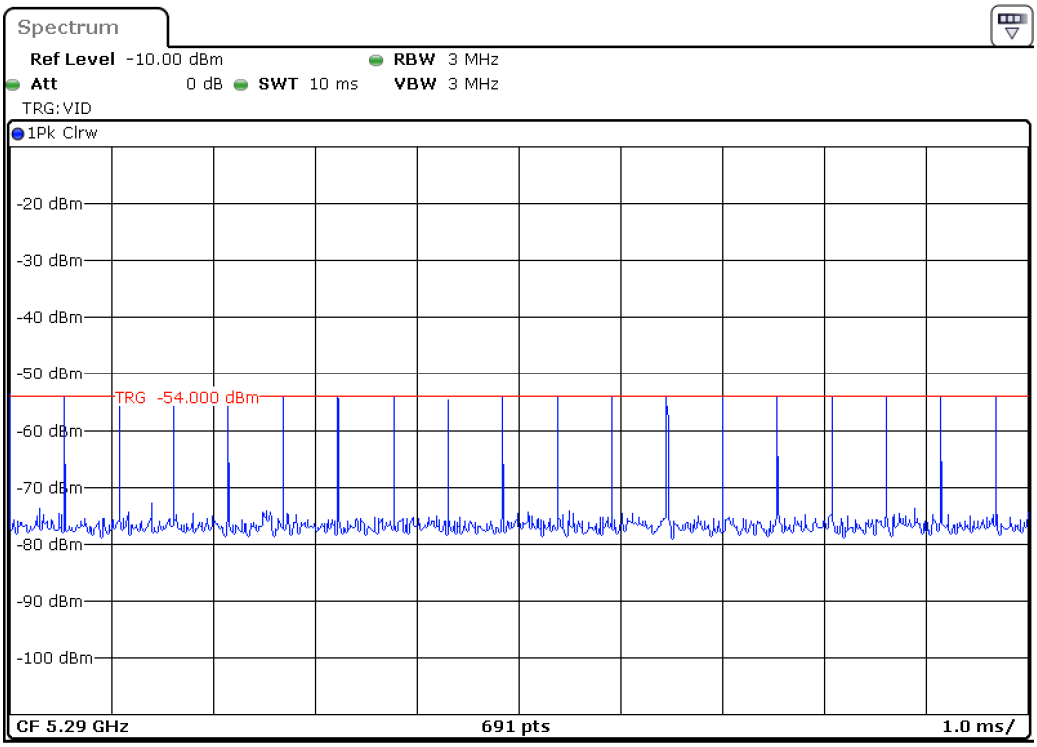
Radar Type 0 Calibration Plot (5290MHz)



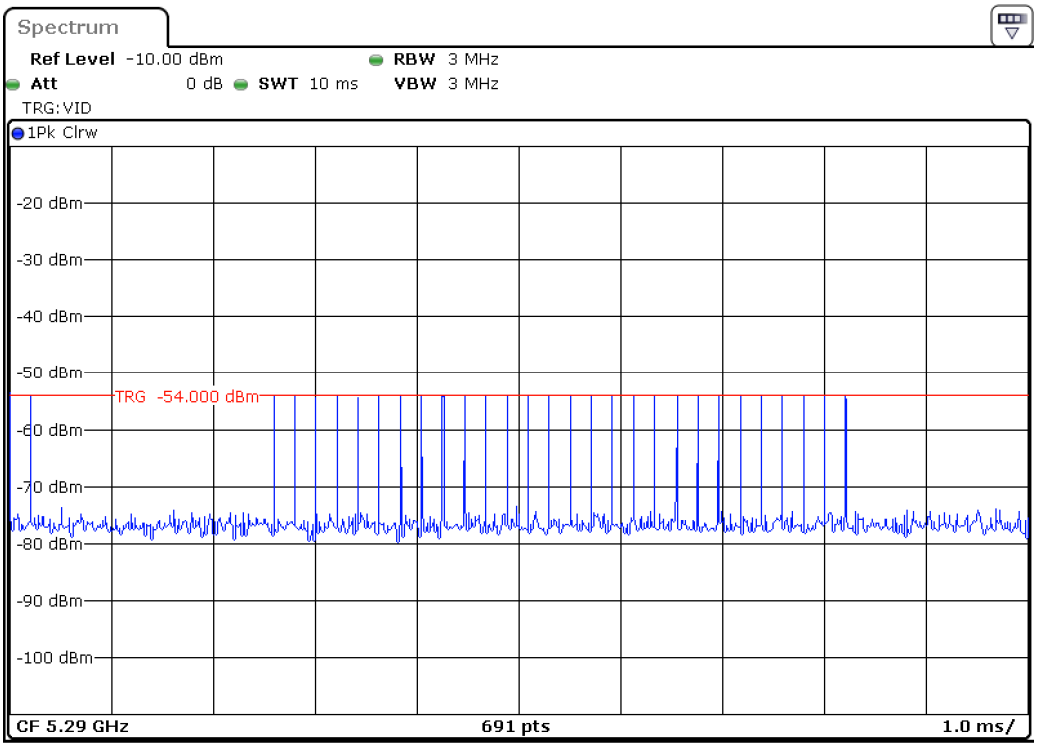
Radar Type 1 test A Calibration Plot (5290MHz)



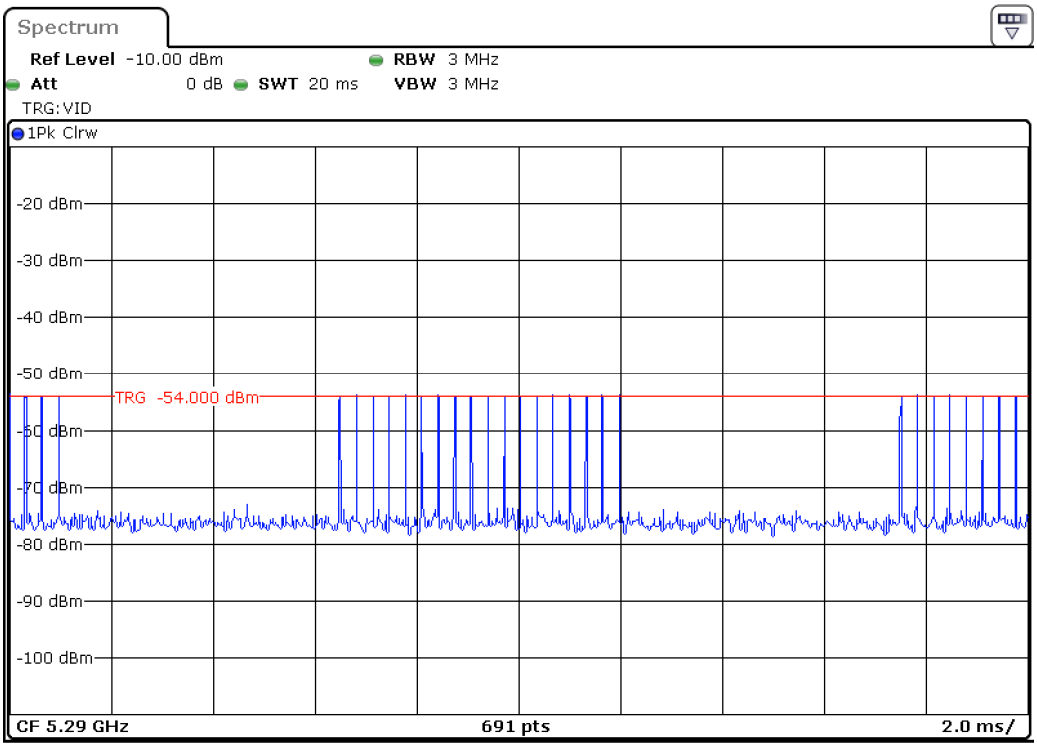
Radar Type 1 test B Calibration Plot (5290MHz)



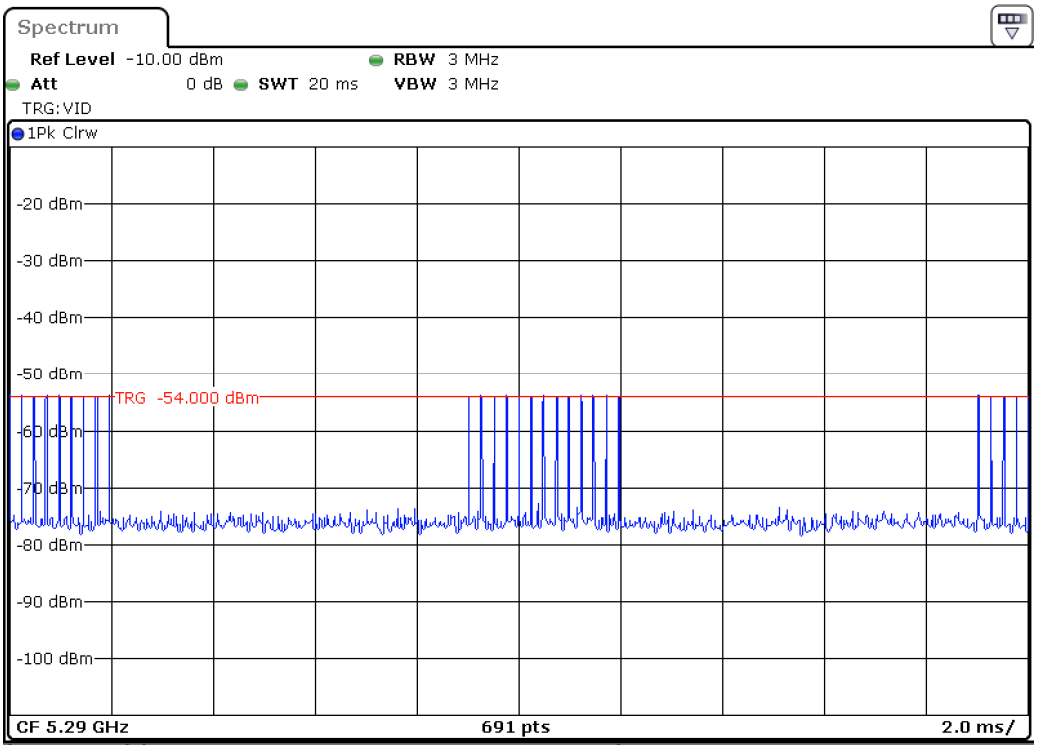
Radar Type 2 Calibration Plot (5290MHz)



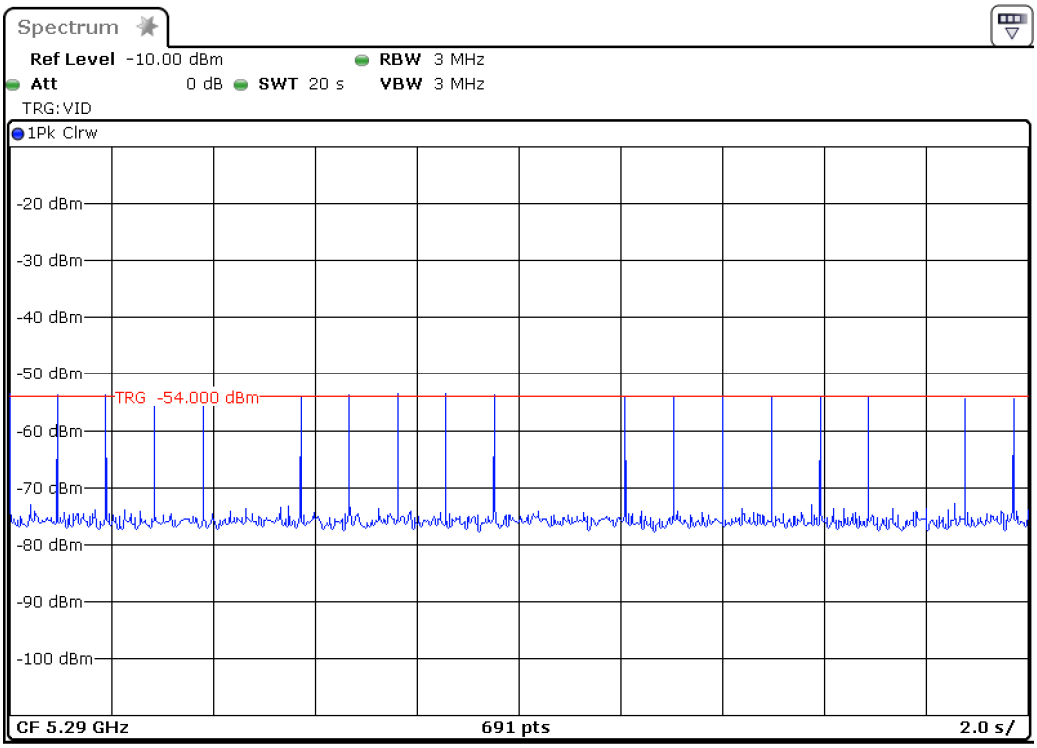
Radar Type 3 Calibration Plot (5290MHz)



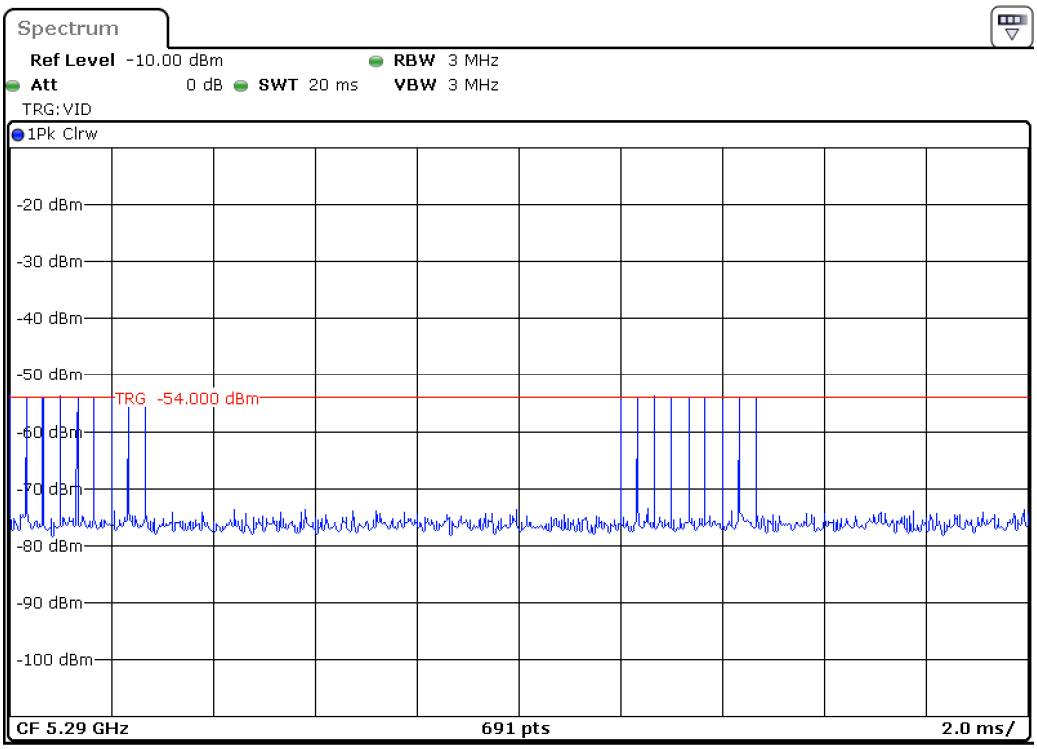
Radar Type 4 Calibration Plot (5290MHz)



Radar Type 5 Calibration Plot (5290MHz)



Radar Type 6 Calibration Plot (5290MHz)



5.1.2.3 Test Result

Please refer to ANNEX A

ANNEX A TEST RESULT

A.1 UNII Detection Bandwidth

The generating equipment is configured as shown in the Conducted Test Setup above. A singleBurst of the short pulse radar type 0 is produced at 5500 MHz/5510 MHz/5530 MHz at a -61dBm level. The UUT is set up as astandalone device (no associated Client and no traffic).

A single radar Burst is generated for a minimum of 10 trials, and the response of the UUT is noted.The UUT must detect the Radar Waveform 90% or more of the time.

The radar frequency is increased in 1 MHz steps, repeating the above test sequence, until thedetection rate falls below 90%. The highest frequency at which detection is greater than or equal to90% is denoted as FH.

The radar frequency is decreased in 1 MHz steps, repeating the above test sequence, until thedetection rate falls below 90%. The lowest frequency at which detection is greater than or equal to90% is denoted as FL.

The U-NII Detection Bandwidth is calculated as follows:
U-NII Detection Bandwidth = FH – FL

Test result

EUT Frequency = 5500 MHz(11a mode)

Radar Frequency	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Detection Rate %
5491	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5492	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5493	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5494	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5495	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5496	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5497	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5498	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5499	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5500	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5501	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5502	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5503	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5504	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5505	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5506	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5507	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5508	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5509	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Detection Bandwidth: 16.47 MHz											
Specification: at least 80% of 99% of EUT bandwidth= 13.18 MHz											

EUT Frequency = 5510 MHz(11n-40 MHz mode)

Radar Frequency	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Detection Rate %
5491	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5492	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5493	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5494	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5495	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5496	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5497	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5498	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5499	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5500	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5501	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5502	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5503	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%

5504	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5505	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5506	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5507	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5508	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5509	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5510	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5511	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5512	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5513	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5514	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5515	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5516	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5517	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5518	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5519	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5520	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5521	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5522	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5523	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5524	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5525	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5526	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5527	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5528	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5529	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Detection Bandwidth: 36.02 MHz											
Specification: at least 80% of 99% of EUT bandwidth= 28.82 MHz											

EUT Frequency = 5530 MHz(11ac-80 MHz mode)

Radar Frequency	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Detection Rate %
5491	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5492	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5493	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5494	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5495	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5496	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5497	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5498	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5499	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5500	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%

5501	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5502	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5503	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5504	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5505	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5506	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5507	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5508	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5509	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5510	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5511	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5512	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5513	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5514	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5515	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5516	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5517	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5518	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5519	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5520	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5521	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5522	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5523	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5524	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5525	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5526	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5527	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5528	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5529	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5530	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5531	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5532	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5533	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5534	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5535	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5536	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5537	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5538	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5539	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5540	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5541	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5542	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5543	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%

5544	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5545	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5546	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5547	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5548	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5549	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5550	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5551	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5552	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5553	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5554	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5555	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5556	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5557	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5558	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5559	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5560	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5561	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5562	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5563	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5564	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5565	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5566	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5567	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5568	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
5569	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Detection Bandwidth: 75.25 MHz											
Specification: at least 80% of 99% of EUT bandwidth= 60.20 MHz											

A.2 Initial Channel Availability Check Time

The Initial Channel Availability Check Time tests that the UUT does not emit beacon, control, or data signals on the test Channel until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for one minute on the test Channel. This test does not use any Radar Waveforms and only needs to be performed one time.

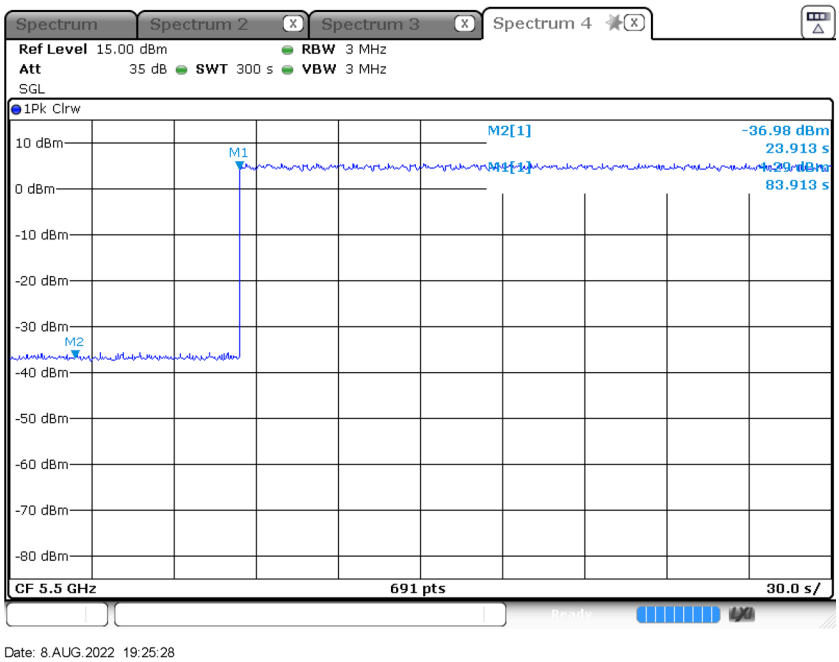
The U-NII devices will be powered on and be instructed to operate on the 5500 MHz that must incorporate DFS functions. At the same time the UUT is powered on, the spectrum analyzer will be set to zero span mode with a 3 MHz RBW and 3 MHz VBW on the Channel occupied by the radar (Chr) with a 2.5 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.

The UUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle

The initial power up time of the UUT is indicated by marker 1 in theplot. Initial beacons/data transmissions are indicated by marker.

Test result

EUT Frequency = 5500 MHz(11a mode)



A.3 Radar Burst at the Beginning of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when aradar Burst with a level equal to the DFS Detection Threshold + 1 dB(-61dBm) occurs at the beginning of the Channel Availability Check Time.

The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence (Tpower_up). The Channel Availability Check Time commences on Chr at instant T1 and will end no sooner than T1 +60 seconds.

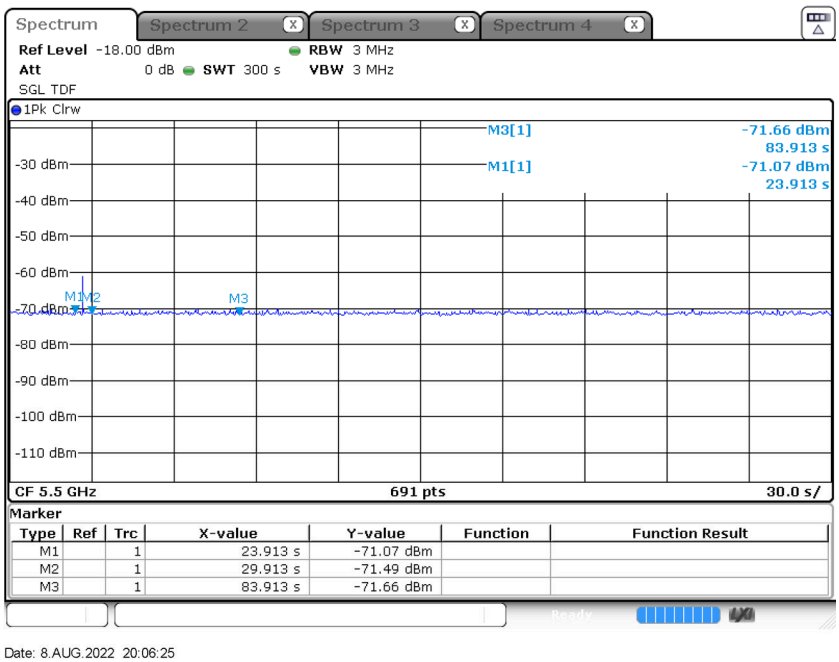
A single Burst of one of the Short Pulse Radar Types 0 at -61dbmwill commence within a 6 second window starting at T1.

Visual indication or measured results on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5500 MHz will continue for 2.5 minutes after the radar Burst has been generated.

Verify that during the 2.5 minute measurement window no UUT transmissions occurred on 5500 MHz.

Note:
EUT power on cycle time=60 sec
For CAC at the beginning, the radar signal was injected within 6 sec after 60 sec.
For CAC at the end, the radar signal was injected with 6 sec before 120 sec.

Test result
EUT Frequency = 5500 MHz(11a mode)



A.4 Radar Burst at the End of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when aradar Burst with a level equal to the DFS Detection Threshold + 1 dB(-61dBm) occurs at the end of the Channel Availability Check Time.

The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence (Tpower_up). The Channel Availability Check Time commences on Chr at instant T1 and will end no sooner than T1 +60 seconds.

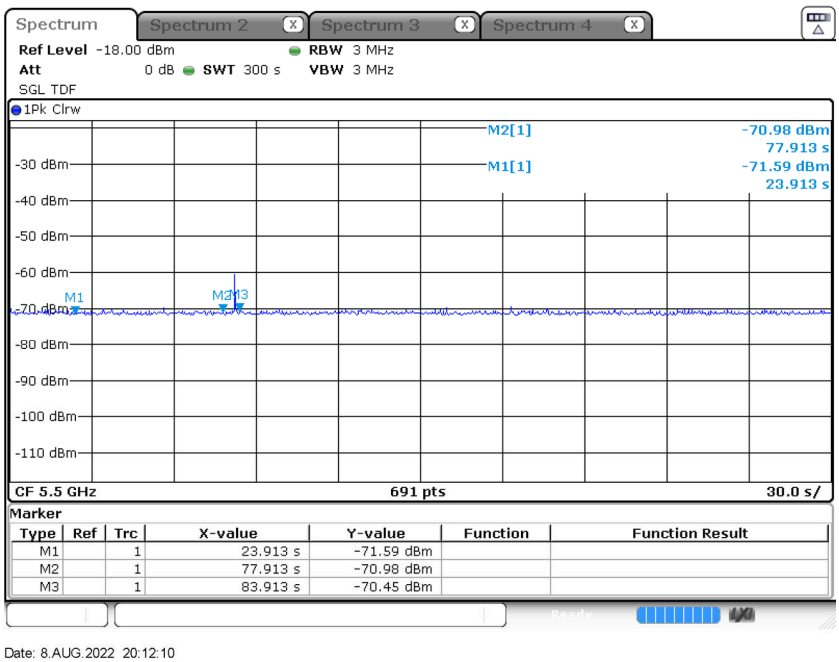
A single Burst of one of the Short Pulse Radar Types 0 at -61dbmwill commence within a 6 second window starting at T1 +54 seconds.

Visual indication or measured results on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5500 MHz will continue for 2.5 minutes after the radar Burst has been generated.

Verify that during the 2.5 minute measurement window no UUT transmissions occurred on 5500 MHz.

Note:
EUT power on cycle time=60 sec
For CAC at the beginning, the radar signal was injected within 6 sec after 60 sec.
For CAC at the end, the radar signal was injected with 6 sec before 120 sec.

Test result
EUT Frequency = 5500 MHz(11a mode)

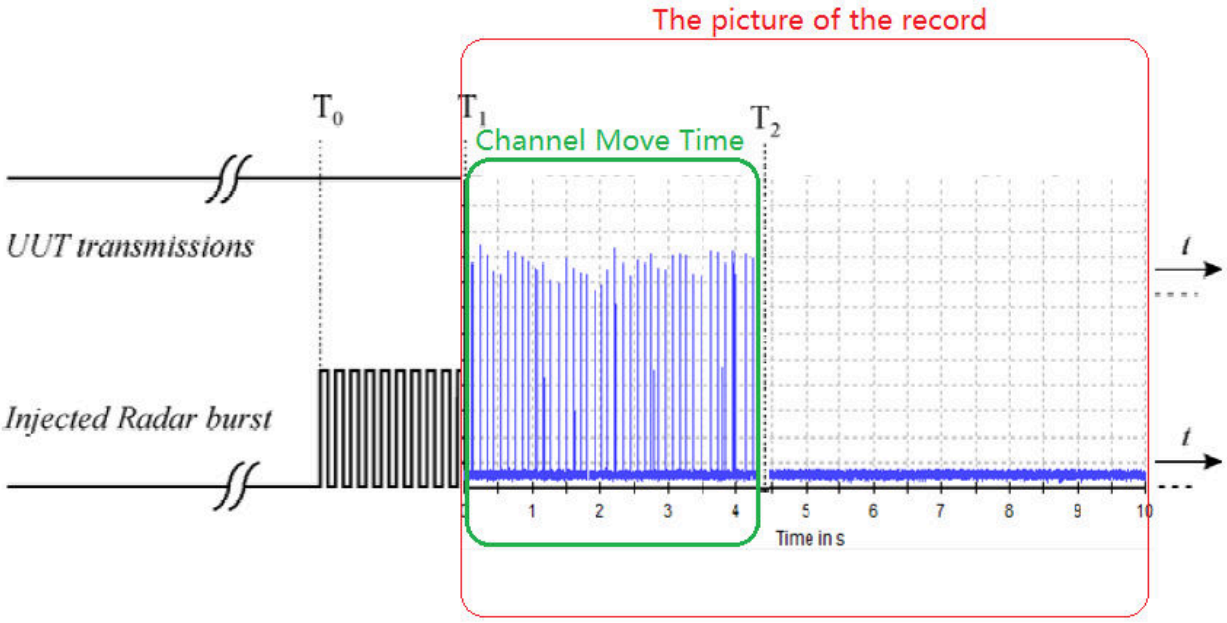


A.5 CHANNEL CLOSING TRANSMISSION AND CHANNEL MOVE TIME

Result of DFS Channel Shutdown

Note:The radar test signals are injected into the Master Device.

Description	Operation Mode	Operation Channel	Value (s)	Limit
Channel Move Time	802.11ac(80 MHz)	58	0	10 s
Channel Closing Transmission Time	802.11ac(80 MHz)	58	0	1 s
Channel Move Time	802.11ac(80 MHz)	106	0	10 s
Channel Closing Transmission Time	802.11ac(80 MHz)	106	0	1 s
Test Verdict	Pass			



T0 denotes DFS test signal start generated on the channel.

T1 denotes the end of the radar burst.

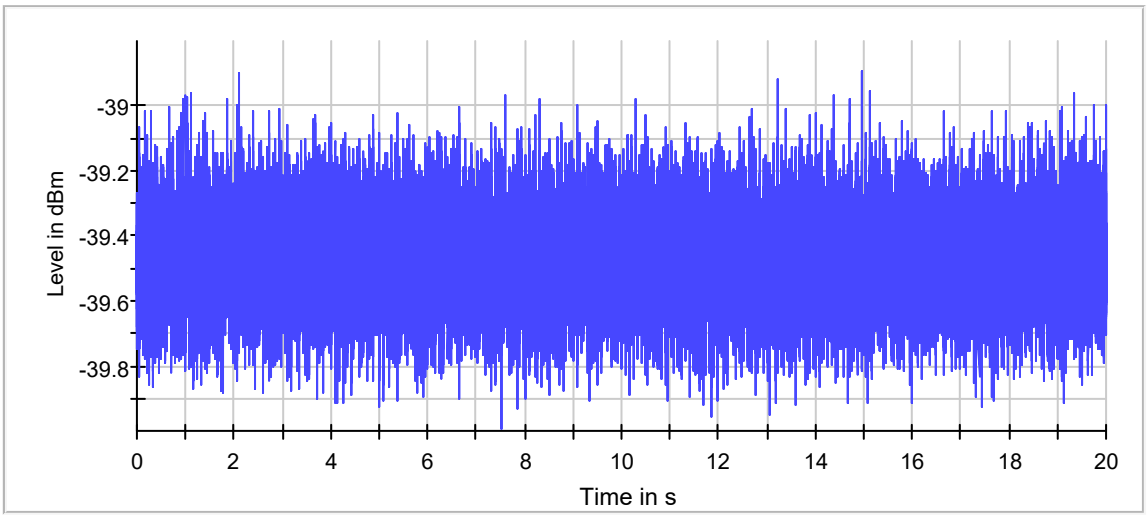
T2 denotes the instant when the UUT has ceased all transmissions on the channel.

The time differencebetween T1 and T2 shall be measured. This value *(Channel Move Time*) shall be noted and compared with thelimit.

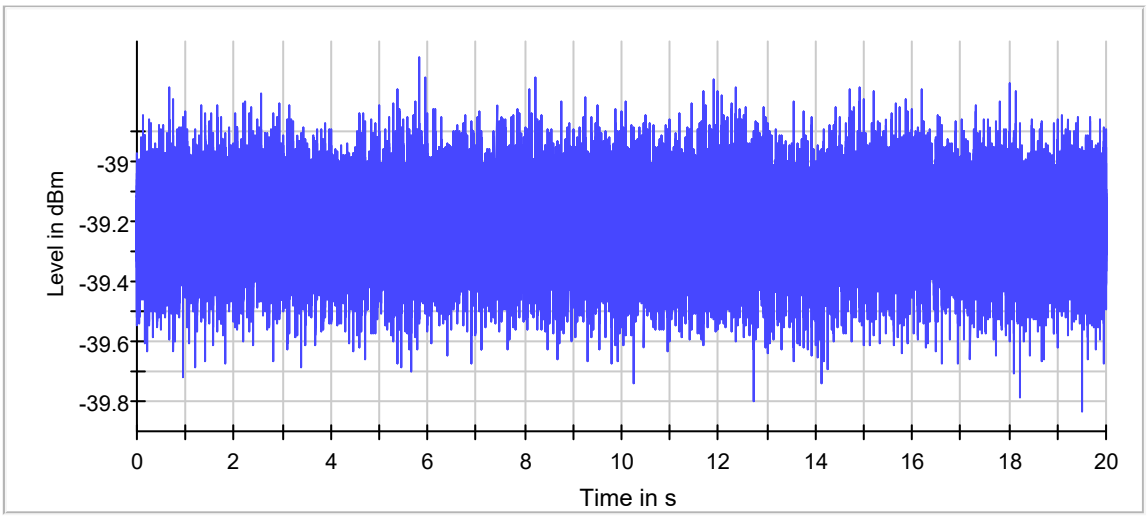
The aggregate duration (*Channel ClosingTransmission Time)* of all transmissions from the UUT on Chrduring the *Channel Move Time* shall becompared to the limit.

Adaptivity Test schematic graphic

802.11ac Channel 58



802.11ac 80 Channel 106

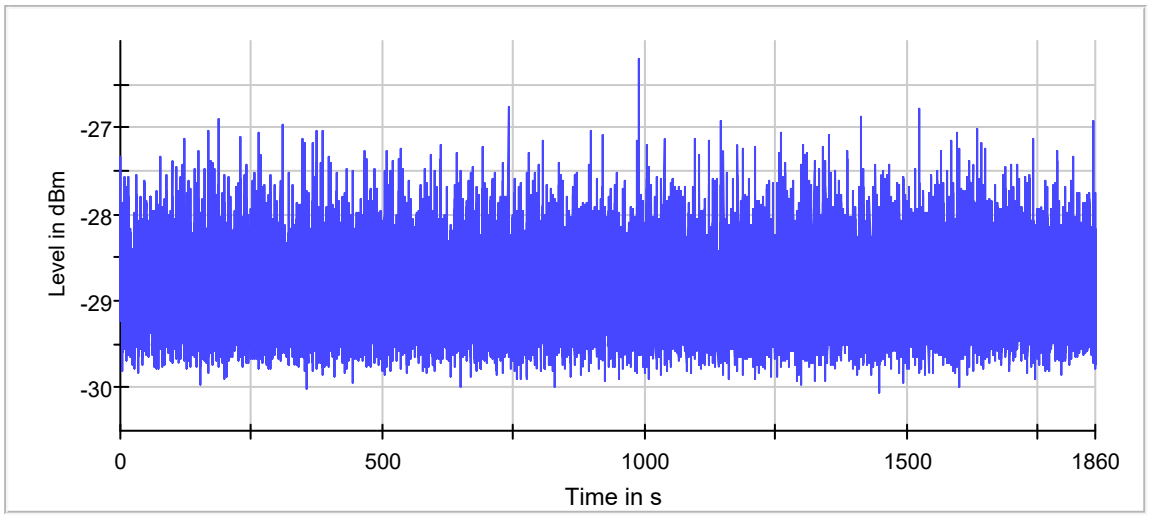


A.6 NON- OCCUPANCY PERIOD

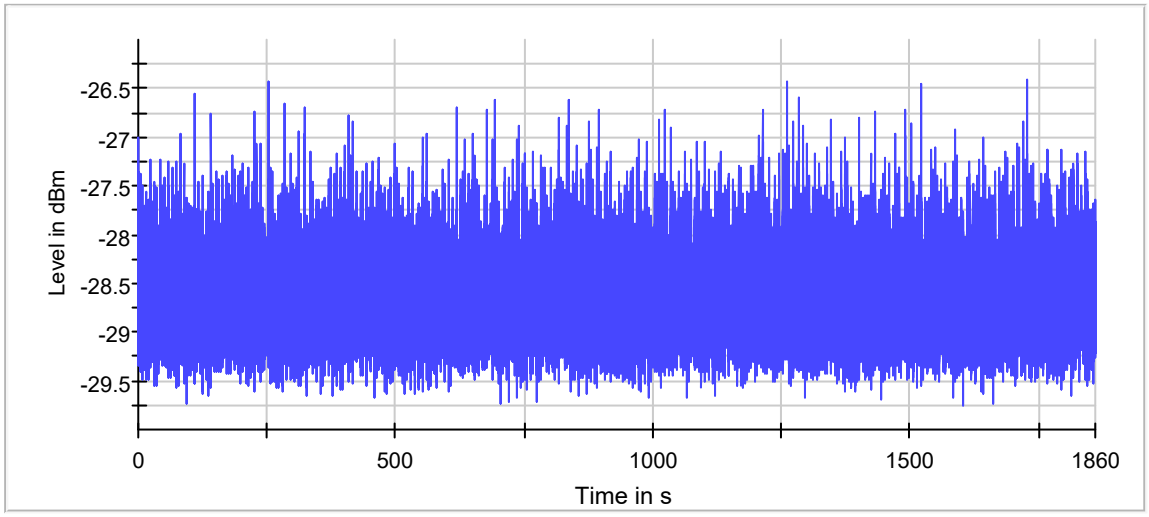
Master was off.

During the 30 minutes observation time, The UUTdid not make any transmissionsin the DFS band after UUT power up.

802.11ac (80MHz) CH58



802.11ac (80MHz) CH106



A.7 Statistical Performance Check

The steps below define the procedure to determine the minimum percentage of detectionwhen a radar burst with a level equal to the DFS Detection Threshold + 1dB(-61dBm) is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

A U-NII device operating as a Client Device will associate with the UUT (Master) at 5500 MHz. Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test.

The Radar Waveform generator sends the individual waveform for each of the radar types 1-6 at -61dbm. Statistical data will be gathered to determine the ability of the device to detect the radar test waveforms. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs. The percentage of successful detection is calculated by:

*100=Probability of Detection Radar Waveform

The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in the *Radar Test Waveforms* section. T

Test result

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 1

Trials	Pulse Repetition Frequency Number(1 to 23)	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Ineterval (Mircoseconds)	Result	Detection Percentage	Limits
1	3	1792.1	558	Yes	100.00%	60%
2	12	1355	738	Yes		
3	13	1319.3	758	Yes		
4	22	1066.1	938	Yes		
5	1	1930.5	518	Yes		
6	14	1285.3	778	Yes		
7	9	1474.9	678	Yes		
8	4	1730.1	578	Yes		
9	11	1392.8	718	Yes		
10	7	1567.4	638	Yes		
11	10	1432.7	698	Yes		
12	17	1193.3	838	Yes		
13	16	1222.5	818	Yes		
14	8	1519.8	658	Yes		
15	15	1253.1	798	Yes		
16	23	326.2	902	Yes		
17	20	1113.6	1499	Yes		
18	18	1165.6	2043	Yes		
19	21	1089.3	2635	Yes		
20	2	1858.7	1743	Yes		
21	6	1618.1	622	Yes		
22	19	1139	2233	Yes		
23	5	1672.2	1902	Yes		
24	8	1519.8	1487	Yes		
25	16	1222.5	1800	Yes		
26	14	1285.3	2091	Yes		
27	7	1567.4	1328	Yes		
28	21	1089.3	956	Yes		
29	12	1355	969	Yes		
30	9	1474.9	1101	Yes		

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 2

Trials	Number Pulses per Burst	Pulse Width (us)	PRI (us)	Result	Detection Percentage	Limits
1	29	4.2	176	Yes	100.00%	60%
2	23	3.7	188	Yes		
3	26	2.4	185	Yes		
4	24	2	164	Yes		
5	23	1.4	214	Yes		
6	25	4.1	208	Yes		
7	29	3.5	212	Yes		
8	26	1.4	170	Yes		
9	24	3.6	186	Yes		
10	29	3.8	160	Yes		
11	26	4.4	162	Yes		
12	24	4.4	205	Yes		
13	25	2.4	182	Yes		
14	28	4.4	206	Yes		
15	23	4.4	213	Yes		
16	27	2.9	213	Yes		
17	23	2.3	154	Yes		
18	27	4.3	196	Yes		
19	27	4.5	219	Yes		
20	26	2.5	221	Yes		
21	29	3.2	219	Yes		
22	28	2.7	163	Yes		
23	28	3.5	203	Yes		
24	29	3.9	170	Yes		
25	27	2	154	Yes		
26	23	1.3	200	Yes		
27	28	1.9	173	Yes		
28	24	2.3	216	Yes		
29	27	2.2	214	Yes		
30	27	2.4	162	Yes		

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 3

Trials	Number Pulses per Burst	Pulse Width (us)	PRI (us)	Result	Detection Percentage	Limits
1	16	8.9	259	Yes	100.00%	60%
2	16	7.4	376	Yes		
3	17	6.2	283	Yes		
4	16	6.9	352	Yes		
5	18	8.8	421	Yes		
6	16	6.1	326	Yes		
7	18	7.4	214	Yes		
8	16	8.4	298	Yes		
9	17	9.2	416	Yes		
10	16	6.2	280	Yes		
11	16	8.4	464	Yes		
12	18	7.8	382	Yes		
13	16	8.8	230	Yes		
14	17	8.1	458	Yes		
15	16	9.3	269	Yes		
16	18	10	460	Yes		
17	17	7	412	Yes		
18	17	7.8	343	Yes		
19	17	8.4	318	Yes		
20	16	7	356	Yes		
21	16	6.4	243	Yes		
22	18	9.3	353	Yes		
23	16	9.8	473	Yes		
24	18	9.4	484	Yes		
25	18	8.6	313	Yes		
26	18	8.5	309	Yes		
27	16	6.5	216	Yes		
28	18	7.4	497	Yes		
29	16	9.5	296	Yes		
30	18	6.4	473	Yes		

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 4

Trials	Number Pulses per Burst	Pulse Width (us)	PRI (us)	Result	Detection Percentage	Limits
1	15	12.2	446	Yes	100.00%	60%
2	13	17.1	267	Yes		
3	16	17.1	342	Yes		
4	13	15.5	207	Yes		
5	12	19.8	431	Yes		
6	13	12.8	424	Yes		
7	14	14	292	Yes		
8	15	19.6	203	Yes		
9	16	12.2	406	Yes		
10	15	16.5	352	Yes		
11	14	12.9	437	Yes		
12	15	11.8	460	Yes		
13	14	16	303	Yes		
14	12	14.3	400	Yes		
15	16	13.7	368	Yes		
16	16	18.1	346	Yes		
17	14	18.7	305	Yes		
18	14	16.8	465	Yes		
19	16	11.3	203	Yes		
20	14	12	244	Yes		
21	13	13.7	476	Yes		
22	15	17.1	242	Yes		
23	13	15.3	468	Yes		
24	14	11.3	416	Yes		
25	14	12	376	Yes		
26	13	11	350	Yes		
27	16	11.4	407	Yes		
28	13	12.4	384	Yes		
29	12	17.9	487	Yes		
30	16	13	316	Yes		

In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is required and is calculated as follows:

Aggregate (100%+100%+100%+100%)/4 =100%(>80%)

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 5

Trials	Name	Result	Detection Percentage	Limits
1	FCC Radar Type 5 Test 1	Yes	97%	80%
2	FCC Radar Type 5 Test 2	Yes		
3	FCC Radar Type 5 Test 3	Yes		
4	FCC Radar Type 5 Test 4	No		
5	FCC Radar Type 5 Test 5	Yes		
6	FCC Radar Type 5 Test 6	Yes		
7	FCC Radar Type 5 Test 7	Yes		
8	FCC Radar Type 5 Test 8	Yes		
9	FCC Radar Type 5 Test 9	Yes		
10	FCC Radar Type 5 Test 10	Yes		
11	FCC Radar Type 5 Test 11	Yes		
12	FCC Radar Type 5 Test 12	Yes		
13	FCC Radar Type 5 Test 13	Yes		
14	FCC Radar Type 5 Test 14	Yes		
15	FCC Radar Type 5 Test 15	Yes		
16	FCC Radar Type 5 Test 16	Yes		
17	FCC Radar Type 5 Test 17	Yes		
18	FCC Radar Type 5 Test 18	Yes		
19	FCC Radar Type 5 Test 19	Yes		
20	FCC Radar Type 5 Test 20	Yes		
21	FCC Radar Type 5 Test 21	Yes		
22	FCC Radar Type 5 Test 22	Yes		
23	FCC Radar Type 5 Test 23	Yes		
24	FCC Radar Type 5 Test 24	Yes		
25	FCC Radar Type 5 Test 25	Yes		
26	FCC Radar Type 5 Test 26	Yes		
27	FCC Radar Type 5 Test 27	Yes		
28	FCC Radar Type 5 Test 28	Yes		
29	FCC Radar Type 5 Test 29	Yes		
30	FCC Radar Type 5 Test 30	Yes		

EUT Frequency = 5500MHz 802.11 a, FCC Radar Type 6

Trials	Name	Result	Detection Percentage	Limits
1	FCC Radar Type 6 Test 1	Yes	93%	70%
2	FCC Radar Type 6 Test 2	Yes		
3	FCC Radar Type 6 Test 3	Yes		
4	FCC Radar Type 6 Test 4	Yes		
5	FCC Radar Type 6 Test 5	Yes		
6	FCC Radar Type 6 Test 6	Yes		
7	FCC Radar Type 6 Test 7	Yes		
8	FCC Radar Type 6 Test 8	Yes		
9	FCC Radar Type 6 Test 9	Yes		
10	FCC Radar Type 6 Test 10	Yes		
11	FCC Radar Type 6 Test 11	No		
12	FCC Radar Type 6 Test 12	Yes		
13	FCC Radar Type 6 Test 13	Yes		
14	FCC Radar Type 6 Test 14	Yes		
15	FCC Radar Type 6 Test 15	Yes		
16	FCC Radar Type 6 Test 16	Yes		
17	FCC Radar Type 6 Test 17	Yes		
18	FCC Radar Type 6 Test 18	Yes		
19	FCC Radar Type 6 Test 19	Yes		
20	FCC Radar Type 6 Test 20	Yes		
21	FCC Radar Type 6 Test 21	Yes		
22	FCC Radar Type 6 Test 22	Yes		
23	FCC Radar Type 6 Test 23	Yes		
24	FCC Radar Type 6 Test 24	No		
25	FCC Radar Type 6 Test 25	Yes		
26	FCC Radar Type 6 Test 26	Yes		
27	FCC Radar Type 6 Test 27	Yes		
28	FCC Radar Type 6 Test 28	Yes		
29	FCC Radar Type 6 Test 29	Yes		
30	FCC Radar Type 6 Test 30	Yes		

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #1

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)
1	0	0.7	1	80	/	/	0.602
2	0.7	1.4	1	97	/	/	1.133
3	1.4	2.1	3	51	1472	1198	2.064
4	2.1	2.8	3	69	1237	1085	2.29
5	2.8	3.5	2	73	1751	/	3.309
6	3.5	4.2	2	75	1960	/	4.226
7	4.2	4.9	1	69	/	/	4.879
8	4.9	5.6	1	85	/	/	5.281
9	5.6	6.4	3	93	1542	1759	5.911
10	6.4	7.1	1	60	/	/	6.454
11	7.1	7.8	3	72	1033	1932	7.258
12	7.8	8.5	3	57	1406	1159	8.43
13	8.5	9.2	2	76	1887	/	8.558
14	9.2	9.9	1	80	/	/	9.501
15	9.9	10.6	2	99	1211	/	10.375
16	10.6	11.3	2	93	1665	/	10.967
17	11.3	12	1	71	/	/	11.304

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #2

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)
1	0	1.3	2	68	1088	/	1.212
2	1.3	2.7	2	54	1411	/	2.207
3	2.7	4	2	72	1446	/	3.883
4	4	5.3	3	76	1457	1466	4.896
5	5.3	6.7	2	99	1732	/	6.436
6	6.7	8	2	57	1296	/	7.566
7	8	9.3	2	57	1217	/	9.283
8	9.3	10.7	1	93	/	/	10.048
9	10.7	12	1	79	/	/	11.727

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #3

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)
1	0	1.5	2	99	1369	/	0.527
2	1.5	3	2	50	1520	/	1.802
3	3	4.5	1	89	/	/	4.061
4	4.5	6	1	96	/	/	5.844
5	6	7.5	2	90	1812	/	6.775
6	7.5	9	2	57	1215	/	8.794
7	9	10.5	2	85	1477	/	9.23
8	10.5	12	2	67	1389	/	10.674

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #4

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)
1	0	1.3	1	94	/	/	0.682
2	1.3	2.7	1	72	/	/	2.206
3	2.7	4	1	61	/	/	3.868
4	4	5.3	1	68	/	/	4.997
5	5.3	6.7	3	53	1012	1443	5.668
6	6.7	8	3	87	1138	1204	7.445
7	8	9.3	1	64	/	/	8.8
8	9.3	10.7	3	54	1973	1140	10.02
9	10.7	12	3	90	1805	1165	11.218

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #5

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)
1	0	1.1	1	89	/	/	0.811
2	1.1	2.2	2	57	1025	/	1.772
3	2.2	3.3	2	82	1474	/	3.234
4	3.3	4.4	2	96	1250	/	3.597
5	4.4	5.5	2	87	1576	/	5.379
6	5.5	6.5	3	56	1804	1651	6.384
7	6.5	7.6	2	94	1453	/	7.315
8	7.6	8.7	2	69	1216	/	7.757
9	8.7	9.8	1	100	/	/	8.852
10	9.8	10.9	3	82	1688	1311	10.108
11	10.9	12	1	95	/	/	11.415

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #6

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1	2	52	1912	/	0.586	20
2	1	2	2	51	1082	/	1.361	10
3	2	3	1	89	/	/	2.851	20
4	3	4	1	63	/	/	3.073	10
5	4	5	1	100	/	/	4.789	20
6	5	6	2	71	1583	/	5.818	10
7	6	7	2	53	1866	/	6.501	20
8	7	8	3	52	1017	1920	7.022	10
9	8	9	2	76	1232	/	8.564	20
10	9	10	2	74	1710	/	9.981	10
11	10	11	1	77	/	/	11.005	20
12	11	12	2	79	1832	/	11.445	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #7

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.9	2	71	1167	/	0.42	20
2	0.9	1.7	3	78	1876	1788	1.57	10
3	1.7	2.6	2	51	1565	/	1.949	20
4	2.6	3.4	2	68	1001	/	2.671	10
5	3.4	4.3	1	62	/	/	3.793	20
6	4.3	5.1	3	70	1031	1809	4.9	10
7	5.1	6	3	57	1047	1058	5.77	20
8	6	6.9	2	63	1318	/	6.66	10
9	6.9	7.7	3	85	1523	1213	7.329	20
10	7.7	8.6	2	74	1972	/	8.28	10
11	8.6	9.4	2	99	1828	/	9.046	20
12	9.4	10.3	3	54	1741	1041	10.189	10
13	10.3	11.1	3	61	1062	1071	10.583	20
14	11.1	12	2	61	1230	/	11.197	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #8

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.5	1	52	/	/	1.247	20
2	1.5	3	3	70	1501	1944	2.489	10
3	3	4.5	3	94	1118	1495	4.258	20
4	4.5	6	2	79	1003	/	5.541	10
5	6	7.5	3	53	1171	1422	7	20
6	7.5	9	1	78	/	/	7.577	10
7	9	10.5	2	69	1950	/	10.289	20
8	10.5	12	3	60	1011	1007	11.676	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #9

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.9	1	98	/	/	0.733	20
2	0.9	1.8	2	67	1370	/	1.57	10
3	1.8	2.8	2	58	1016	/	2.561	20
4	2.8	3.7	1	89	/	/	3.612	10
5	3.7	4.6	2	83	1264	/	3.751	20
6	4.6	5.5	2	82	1261	/	5.478	10
7	5.5	6.5	2	89	1808	/	6.277	20
8	6.5	7.4	3	81	1050	1899	6.982	10
9	7.4	8.3	1	62	/	/	7.57	20
10	8.3	9.2	3	91	1906	1489	8.468	10
11	9.2	10.2	2	92	1542	/	10.144	20
12	10.2	11.1	2	86	1864	/	10.809	10
13	11.1	12	2	61	1361	/	11.266	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #10

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1	3	75	1237	1890	0.46	20
2	1	2	2	75	1355	/	1.85	10
3	2	3	3	88	1030	1879	2.075	20
4	3	4	3	91	1238	1603	3.754	10
5	4	5	2	92	1887	/	4.786	20
6	5	6	1	60	/	/	5.322	10
7	6	7	2	69	1993	/	6.706	20
8	7	8	1	100	/	/	7.657	10
9	8	9	3	51	1837	1340	8.468	20
10	9	10	2	93	1117	/	9.348	10
11	10	11	1	82	/	/	10.639	20
12	11	12	1	90	/	/	11.238	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #11

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.9	2	68	1423	/	0.434	20
2	0.9	1.8	3	75	1412	1597	1.134	10
3	1.8	2.8	1	79	/	/	1.881	20
4	2.8	3.7	2	56	1738	/	3.094	10
5	3.7	4.6	2	75	1413	/	4.424	20
6	4.6	5.5	3	85	1139	1580	4.915	10
7	5.5	6.5	2	90	1609	/	6.33	20
8	6.5	7.4	2	98	1120	/	7.203	10
9	7.4	8.3	2	55	1638	/	7.956	20
10	8.3	9.2	2	63	1230	/	8.816	10
11	9.2	10.2	2	71	1684	/	9.73	20
12	10.2	11.1	2	97	1270	/	11.057	10
13	11.1	12	3	97	1569	1990	11.683	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #12

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.2	2	89	1794	/	0.291	20
2	1.2	2.4	2	100	1605	/	1.7	10
3	2.4	3.6	2	54	1729	/	2.451	20
4	3.6	4.8	2	98	1108	/	3.882	10
5	4.8	6	2	71	1371	/	4.834	20
6	6	7.2	3	64	1145	1705	6.233	10
7	7.2	8.4	3	60	1791	1299	8.222	20
8	8.4	9.6	2	55	1808	/	8.838	10
9	9.6	10.8	2	63	1816	/	9.796	20
10	10.8	12	2	51	1675	/	10.909	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #13

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.1	2	85	1341	/	0.6	20
2	1.1	2.2	1	99	/	/	2.12	10
3	2.2	3.3	2	64	1362	/	2.381	20
4	3.3	4.4	1	57	/	/	3.503	10
5	4.4	5.5	1	71	/	/	5.304	20
6	5.5	6.5	1	57	/	/	6.013	10
7	6.5	7.6	1	93	/	/	7.185	20
8	7.6	8.7	2	88	1461	/	8.399	10
9	8.7	9.8	3	52	1753	1753	9.475	20
10	9.8	10.9	1	62	/	/	10.531	10
11	10.9	12	3	95	1033	1033	11.566	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #14

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.9	1	78	/	/	0.374	20
2	0.9	1.8	3	51	1585	1983	1.304	10
3	1.8	2.8	1	97	/	/	2.71	20
4	2.8	3.7	1	64	/	/	3.488	10
5	3.7	4.6	3	78	1673	1375	4.296	20
6	4.6	5.5	3	81	1348	1750	5.029	10
7	5.5	6.5	1	89	/	/	5.843	20
8	6.5	7.4	2	57	1501	/	7.088	10
9	7.4	8.3	2	57	1377	/	7.505	20
10	8.3	9.2	1	75	/	/	8.954	10
11	9.2	10.2	2	91	1504	/	10.137	20
12	10.2	11.1	1	59	/	/	11.052	10
13	11.1	12	1	71	/	/	11.198	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #15

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.3	2	88	1612	/	0.872	20
2	1.3	2.7	1	89	/	/	1.8	10
3	2.7	4	2	63	1326	/	2.886	20
4	4	5.3	1	69	/	/	5.226	10
5	5.3	6.7	1	65	/	/	5.905	20
6	6.7	8	2	73	1667	/	7.558	10
7	8	9.3	1	64	/	/	8.812	20
8	9.3	10.7	3	69	1026	1172	9.451	10
9	10.7	12	1	85	/	/	11.212	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #16

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.1	1	99	/	/	0.829	20
2	1.1	2.2	3	78	1375	1648	1.916	10
3	2.2	3.3	2	90	1330	/	3.194	20
4	3.3	4.4	1	53	/	/	4.336	10
5	4.4	5.5	2	94	1319	/	4.933	20
6	5.5	6.5	2	86	1158	/	6.002	10
7	6.5	7.6	2	87	1645	/	7.424	20
8	7.6	8.7	3	59	1049	1703	7.812	10
9	8.7	9.8	2	75	1319	/	9.66	20
10	9.8	10.9	3	67	1504	1890	9.978	10
11	10.9	12	3	99	1792	1268	11.06	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #17

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1.2	2	52	1407	/	0.156	20
2	1.2	2.4	2	97	1763	/	2.041	10
3	2.4	3.6	3	69	1655	1013	3.43	20
4	3.6	4.8	3	85	1033	1012	3.839	10
5	4.8	6	1	71	/	/	5.01	20
6	6	7.2	1	53	/	/	6.637	10
7	7.2	8.4	2	67	1067	/	8.399	20
8	8.4	9.6	2	61	1068	/	8.54	10
9	9.6	10.8	2	79	1839	/	10.763	20
10	10.8	12	2	78	1857	/	11.051	10

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #18

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.8	2	91	1873	/	0.259	20
2	0.8	1.6	2	99	1242	/	1.01	10
3	1.6	2.4	2	54	1625	/	2.06	20
4	2.4	3.2	2	65	1834	/	3.157	10
5	3.2	4	2	91	1696	/	3.417	20
6	4	4.8	3	57	1766	1143	4.557	10
7	4.8	5.6	3	76	1543	1561	4.89	20
8	5.6	6.4	2	74	1343	/	5.619	10
9	6.4	7.2	1	85	/	/	7.17	20
10	7.2	8	3	97	1560	1823	7.705	10
11	8	8.8	1	71	/	/	8.549	20
12	8.8	9.6	2	86	1094	/	9.396	10
13	9.6	10.4	2	52	1523	/	9.99	20
14	10.4	11.2	3	56	1429	1321	10.539	10
15	11.2	12	3	52	1376	1610	11.251	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #19

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	0.9	2	90	1656	/	0.015	20
2	0.9	1.8	2	82	1762	/	1.449	10
3	1.8	2.8	3	74	1496	1860	2.695	20
4	2.8	3.7	2	64	1984	/	3.677	10
5	3.7	4.6	2	54	1485	/	4.241	20
6	4.6	5.5	1	99	/	/	5.002	10
7	5.5	6.5	2	51	1010	/	5.705	20
8	6.5	7.4	3	87	1833	1841	7.193	10
9	7.4	8.3	3	71	1857	1146	7.491	20
10	8.3	9.2	3	76	1593	1656	8.488	10
11	9.2	10.2	2	61	1120	/	9.554	20
12	10.2	11.1	1	67	/	/	10.902	10
13	11.1	12	1	51	/	/	11.634	20

EUT Frequency = 5500MHz 802.11 a,FCC Radar Type 5 Trial #20

Burst #	Burst Interval(s)		Number of Pulses	Pulse Width (us)	Pulse 1-to-2 Spacing (us)	Pulse 2-to-3 Spacing (us)	Pulse Start (s)	Chirp Width (MHZ)
1	0	1	1	95	/	/	0.603	20
2	1	2	2	99	1653	/	1.943	10
3	2	3	3	82	1917	1022	2.717	20
4	3	4	3	93	1372	1017	3.793	10
5	4	5	2	70	1829	/	4.434	20
6	5	6	1	52	/	/	5.502	10
7	6	7	3	76	1173	1301	6.107	20
8	7	8	2	73	1209	/	7.678	10
9	8	9	2	82	1597	/	8.653	20
10	9	10	3	50	1296	1986	9.09	10
11	10	11	1	89	/	/	10.37	20
12	11	12	1	61	/	/	11.732	10

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2261190-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2261190-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2261190-AI.PDF”.

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