Dynamic Frequency Selection (DFS)

Test Report

Product Name	:	Consumer Home Router
Trade Name	:	Verizon
Model No.	:	CR1000A
FCC ID.	:	NKR-LVSK-R2

Applicant	:	Wistron NeWeb Corporation
Address	:	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan

Date of Receipt	:	Oct. 21, 2020
Issued Date	:	Jun. 08, 2021
Report No.	:	20A0549R-E3032610115
Report Version	:	V1.0

Testing Laboratory
3024

DFS Test Report

Issued Date: Jun. 08, 2021
Report No.: 20A0549R-E3032610115

Product Name	:	Consumer Home Router
Applicant	:	Wistron NeWeb Corporation
Address	:	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Manufacturer	:	Wistron NeWeb Corporation
Address	:	20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan
Model No.	:	CR1000A
Trade Name	:	Verizon
FCC ID.	:	NKR-LVSK-R2
EUT Voltage	:	AC 100-120V, 50-60Hz
Testing Voltage	:	AC 120V/60Hz
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2019 ANSI C63.10: 2013
Laboratory Name	:	Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result	:	Complied

Documented By : Carol Tsai

(Carol Tsai / Senior Engineering Adm. Specialist)

Tested By : Elwin Lin

(Elwin Lin / Engineer)

Approved By : Louis Hsu

(Louis Hsu / Deputy Manager)

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Jun. 08, 2021

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Description Page

1. General Information

1.1. EUT Description

Product Name	Consumer Home Router	
Trade Name	Verizon	
Model No.	CR1000A	
DFS Frequency Range / Number of DFS Channels	IEEE 802.11a/n/ac/ax (20MHz)	5260~5320MHz / 4 Channels 5500~5700MHz / 11 Channels
	IEEE 802.11n/ac/ax (40MHz)	5270~5310MHz / 2 Channels 5510~5670MHz / 5 Channels
	IEEE 802.11ac/ax (80MHz)	5290~5290MHz / 1 Channel 5530~5610MHz / 2 Channel
Data Speed	IEEE 802.11a	6, 9, 18, 24, 36, 48, 54Mbps
	IEEE 802.11n	Support a subset of the combination of GI, MCS 0~MCS 32 and bandwidth defined in 802.11n
	IEEE 802.11ac	Support a subset of the combination of GI, MCS 0~MCS 9 and bandwidth defined in 802.11ac Proprietary MCS 10-MCS 11 (1024QAM)
	IEEE 802.11ax	Support a subset of the combination of GI, MCS 0~MCS 11 and bandwidth defined in 802.11ax
Channel Control	Auto	
Type of Modulation	Orthogonal Frequency Division Multiplexing	
Channel Bandwidth	20/40/80 MHz	
DFS Function	■ Master □ Slave	
TPC Function	□ <500mW not required ■ ≧ 500mW employ a TPC*	
Communication Mode	■ IP Based Systems □ Frame Based System □ Other System	
Antenna Gain	Refer to the table “Antenna List”	

Antenna List

Ant. No.	Manufacturer	PN	Ant. Type	Directional Gain
0	WNC	Dual Ant1	Dipole Antenna	4.64 dBi for 5260~5350 MHz 5.91 dBi for 5500~5700 MHz
1		Dual Ant2		
2		Dual Ant3		
3		Dual Ant4		

Accessories Information	
LAN Cable	Non-Shielded, 3m
Power Adapter	MFR: LUCENT TRANS; M/N: 1A98-1250 I/P: 100-120V~1.6A, 50-60Hz, O/P: DC 12.0V ⎓ 5.0A, 60W Cable Out: Non-Shielded, 1.8m

Channel List

IEEE 802.11a & IEEE 802.11n/ac/ax (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5560 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz		

IEEE 802.11n/ac/ax (40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310 MHz	102	5510 MHz	110	5550 MHz
118	5590MHz	126	5630 MHz	134	5670 MHz		

IEEE 802.11ac/ax (80MHz)

Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
58	5290 MHz	106	5530 MHz	122	5610 MHz		

Test Mode	Mode 1: Transmit

Note:

1. This device is a Consumer Home Router including 2.4GHz b/g/n/ax and 5GHz a/n/ac/ax and BLE transmitting and receiving functions.
2. All modes and combinations of operation were considered including modulation, channel and technology.
3. The EUT description is from the customer declaration.

1.2. Standard Requirement

FCC Part 15.407:

U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30dBm. A TPC mechanism is not required for systems with an E.I.R.P. of less than 500mW.

U-NII devices operating in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.

1.3. UNII Device Description

1. The EUT operates in the following DFS band:
   (1) 5250-5350 MHz
   (2) 5470-5725 MHz

2. The U-NII device maximum power is 29.877dBm (E.I.R.P).
   Below are the available 50 ohm antenna assemblies and their corresponding gains. 0dBi gain was used to set the -63 dBm threshold level (-64dBm +1 dB) during calibration of the test setup.

3. WLAN traffic is generated by the test software “Iperf.exe” from the Master device to the Slave device in the transfer data rate >17%.

4. For the 5250-5350 MHz and 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.

1.4. Test Equipment

DFS / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	US47140172	2020/06/18	2021/06/17
ESG Vector Signal Generator	Agilent	E4438C	MY45095759	2020/05/11	2021/05/10
MXG Vector Signal Generator	Keysight	N5182B	MY53052548	2021/02/22	2022/02/21
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2020/06/04	2021/06/03
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2020/10/14	2021/10/13
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Spectrum Analyzer	Keysight	N9030B	MY57140404	2020/06/03	2021/06/02
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

Instrument	Manufacturer	Type No.	Serial No	FCC ID.
Laptop PC	DELL	Vostro A860	CD8BMH1	--
Laptop PC	ASUS	K45VD	0343G3110M	--
Wireless Router	ASUS	ASUS RT-AX88U	JCITHP000040	MSQ-RTAXHP00
ATT (Qty: 3)	Mini-Circuits	BW-S3W2 DC-18GHz	0025	--
RF Cable (Qty: 6)	Schaffner	-	25494/6	--

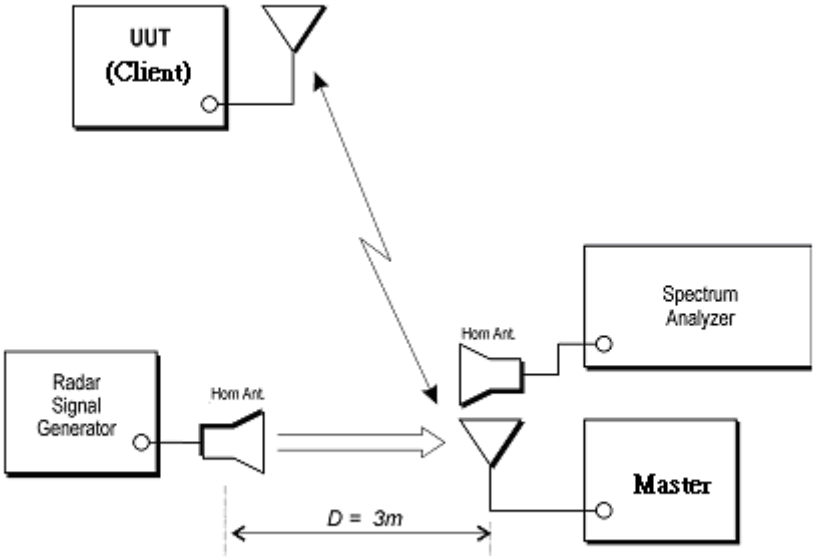
Software	Manufacturer	Function
Agilent Signal Studio for DFS_V1.0.0	Agilent	Radar Signal Generation Software
OpenWrt Chaos Calmer 15.05.1 671d0a7+r49254 / LuCI branch (git-18.232.16445-491d217)	Verizon	DFS test firmware

1.5. Uncertainty

Test item	Uncertainty
DFS	± 1ms

Note: Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

1.6. Test Setup



1.7. DFS Detection Thresholds

(1) Interference Threshold value, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥200 milliwatt	-64dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64dBm
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. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

(2) 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 + approx. 60 milliseconds over remaining 10 seconds period (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the 99% power bandwidth See Note 3.

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins 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 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

1.8. Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. 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.

(1) 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 $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{PRI_{\mu sec}}\right)\right\}$	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 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

(2) Long Pulse Radar Test Signal

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

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the long pulse radar test signal. If more than 30 waveforms are used for the long pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

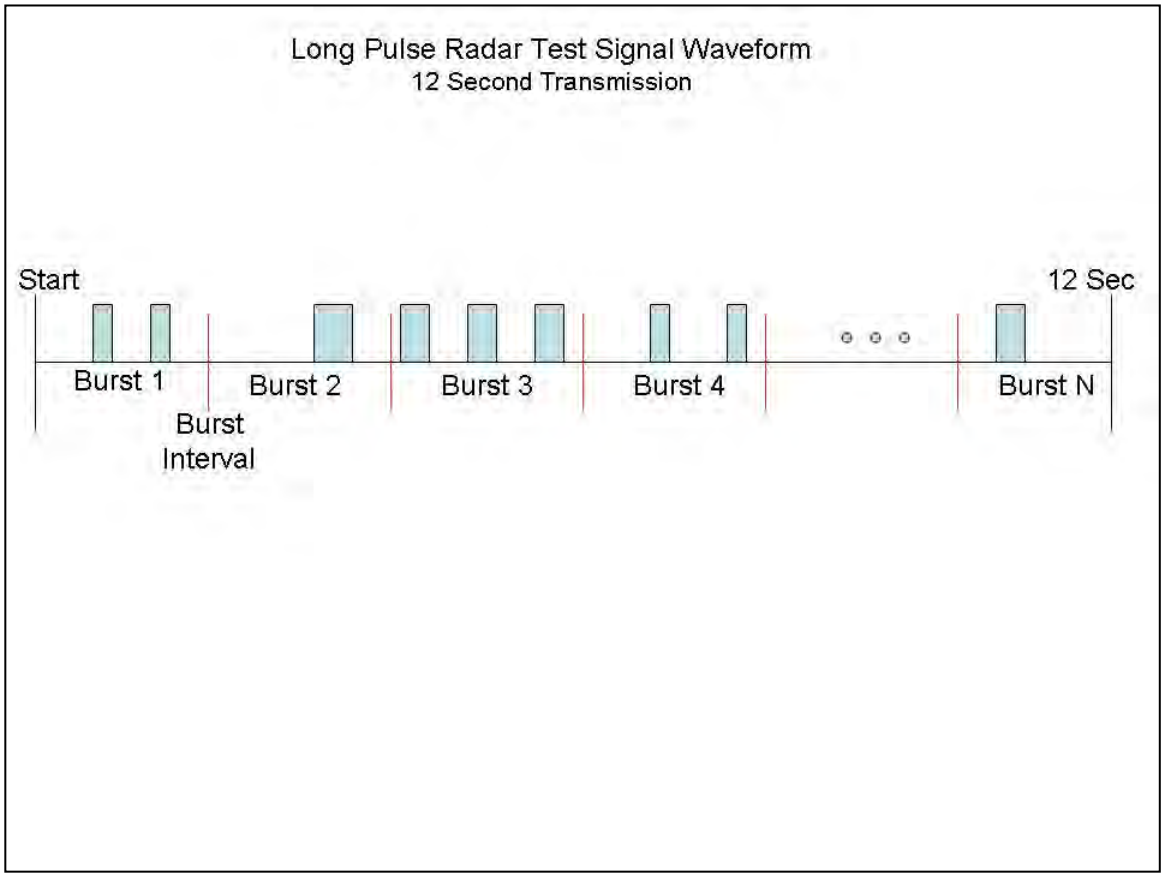
Each waveform is defined as follows:

1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
5) Each pulse has a linear frequency modulated chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a transmission period will have the same chirp width. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length (12,000,000 / Burst_Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12,000,000 / Burst_Count) – (Total Burst Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

1) The total test signal length is 12 seconds.
2) 8 Bursts are randomly generated for the Burst_Count.
3) Burst 1 has 2 randomly generated pulses.
4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
5) The PRI is randomly selected to be at 1213 microseconds.
6) Bursts 2 through 8 are generated using steps 3 – 5.
7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).

Graphical Representation of a Long Pulse radar Test Waveform



(3) Frequency Hopping Radar Test Signal

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

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected[1] from the hopping sequence defined by the following algorithm:

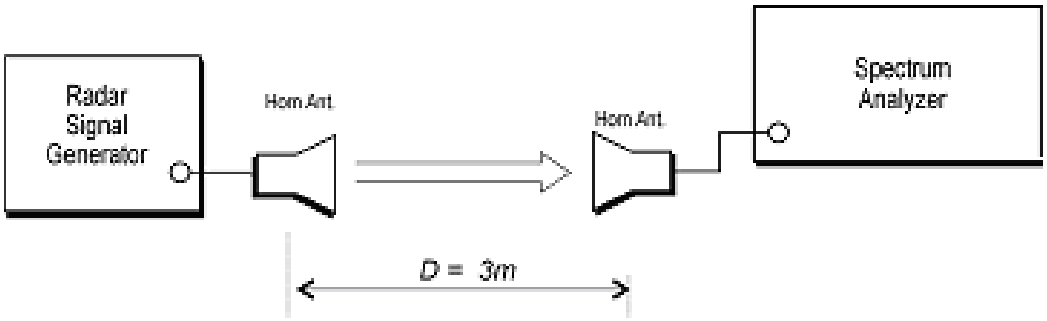
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

1.9. Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted radar waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were replace 50ohm terminal from master and client device and no transmissions by either the master or client device. The spectrum analyzer was switched to the zero span (time domain) at the frequency of the radar waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 1MHz and 1MHz.

The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -63dBm due to the interference threshold level is not required.

Radiated Calibration Setup



1.10. Radar Waveform Calibration Result

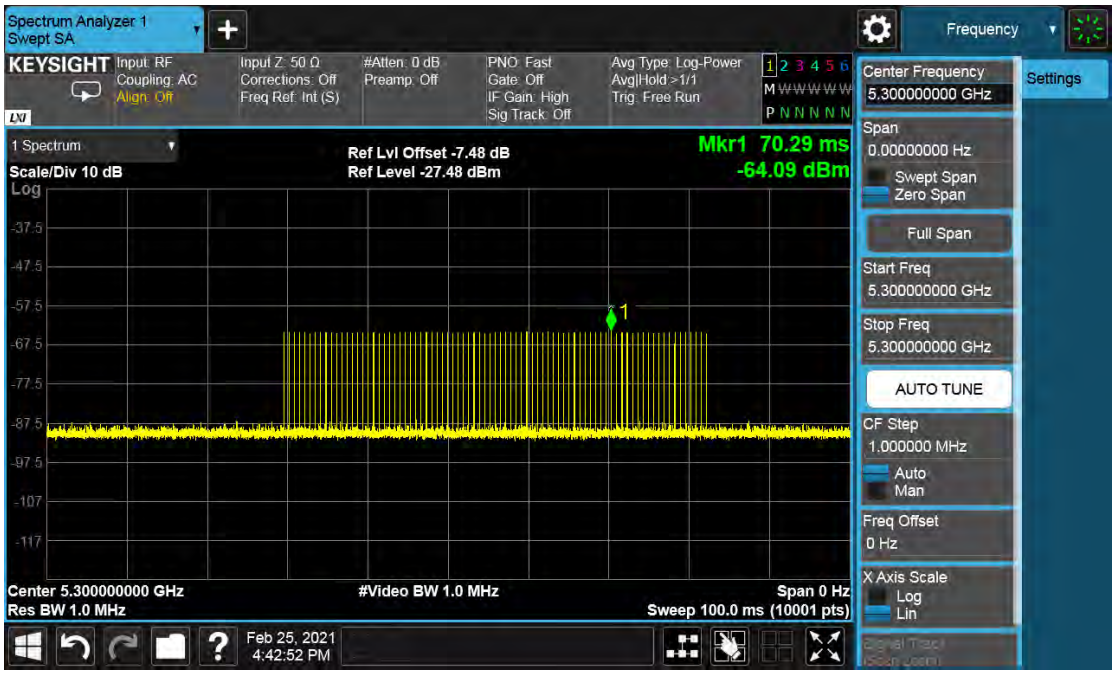
Product	Consumer Home Router		
Test Item	Radar Waveform Calibration		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/25	Test Site	SR10-H
Temperature (°C)	23.1	Humidity (%RH)	62

Radar Type 0

Calibration Plot (IEEE 802.11ax_20M_5300MHz)

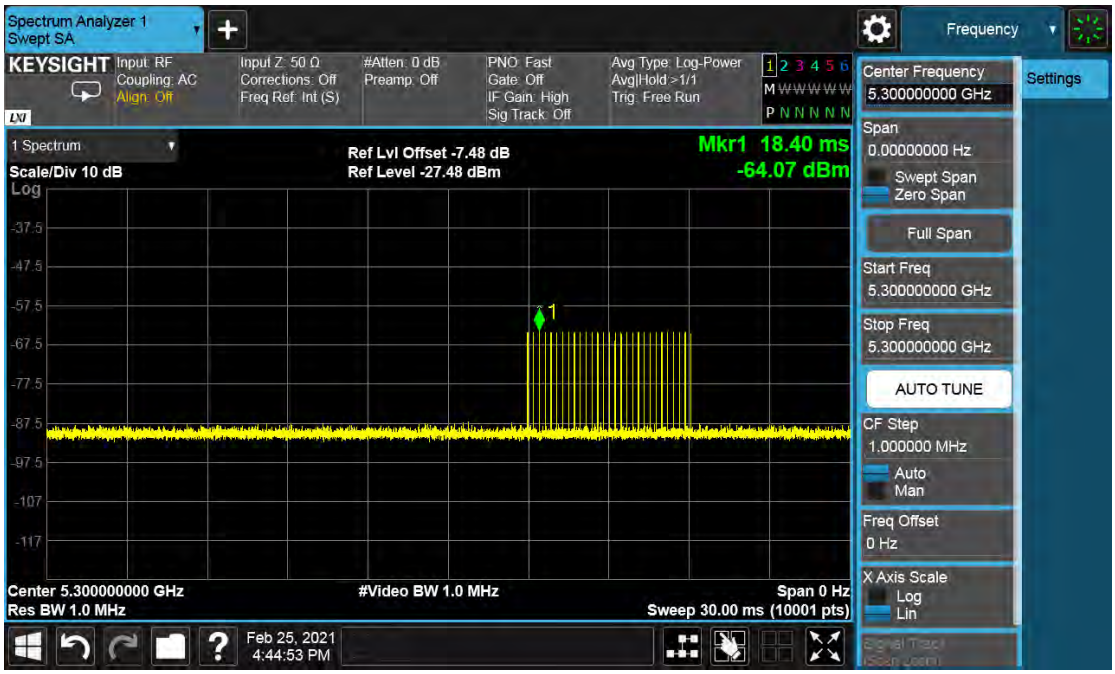
Radar Type 1

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



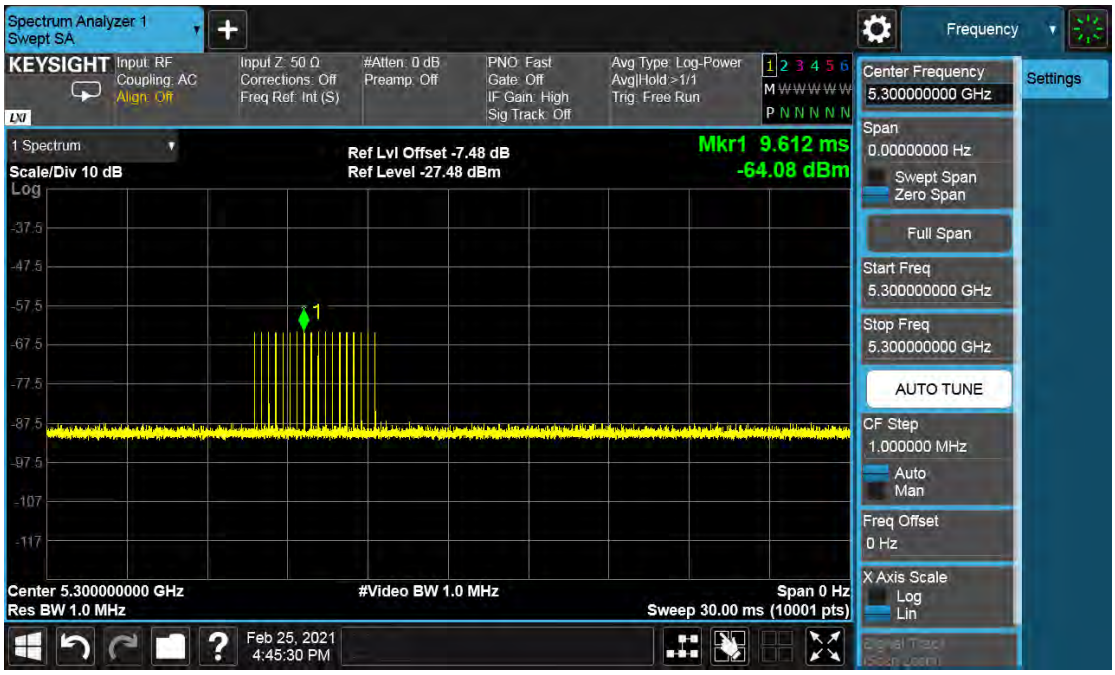
Radar Type 2

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



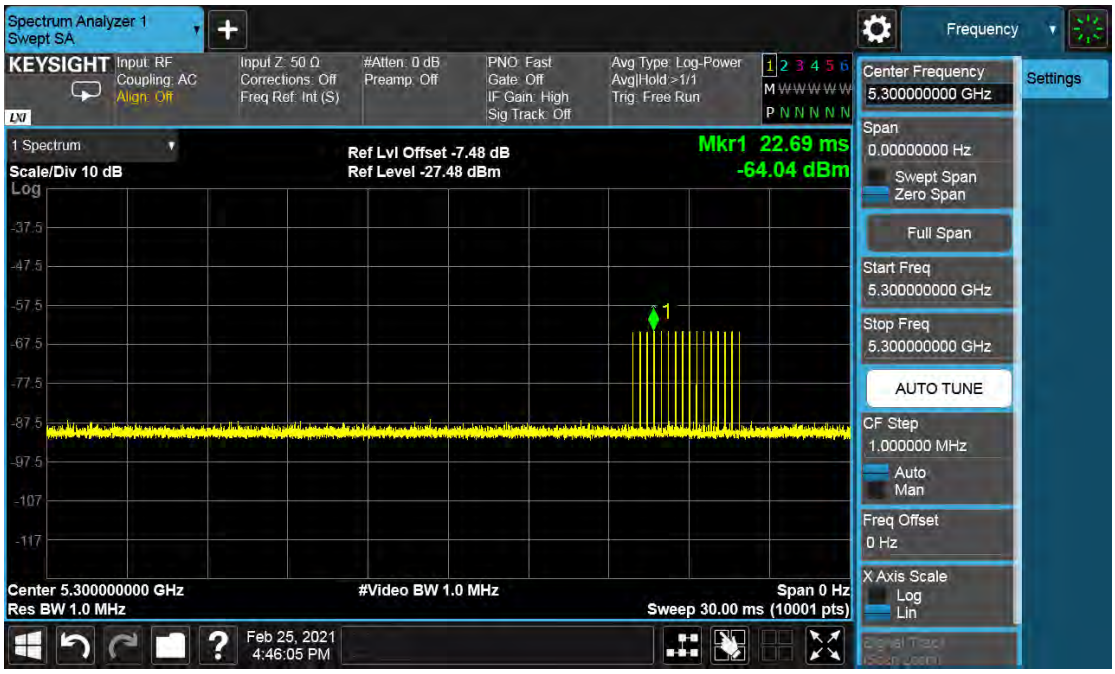
Radar Type 3

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



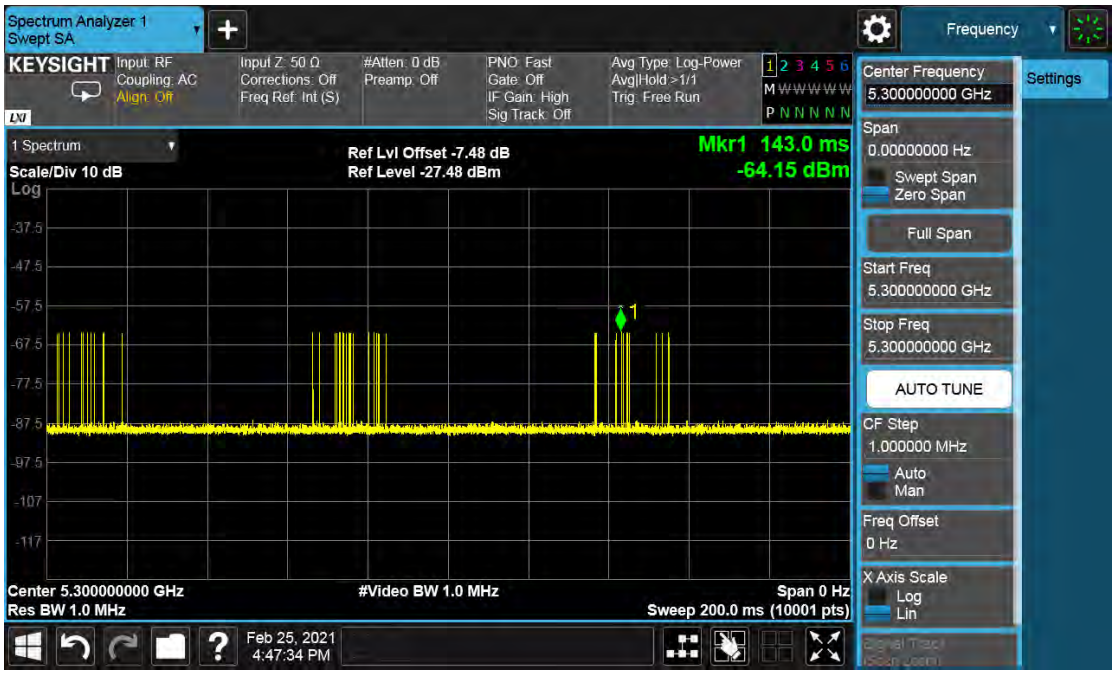
Radar Type 4

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



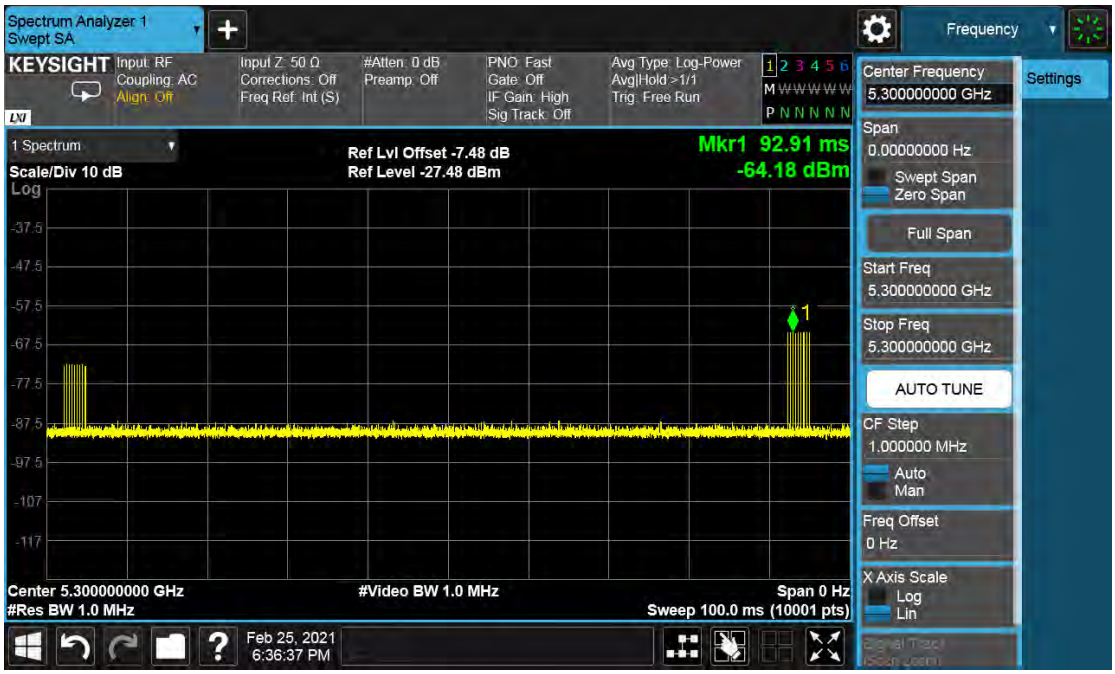
Radar Type 5

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



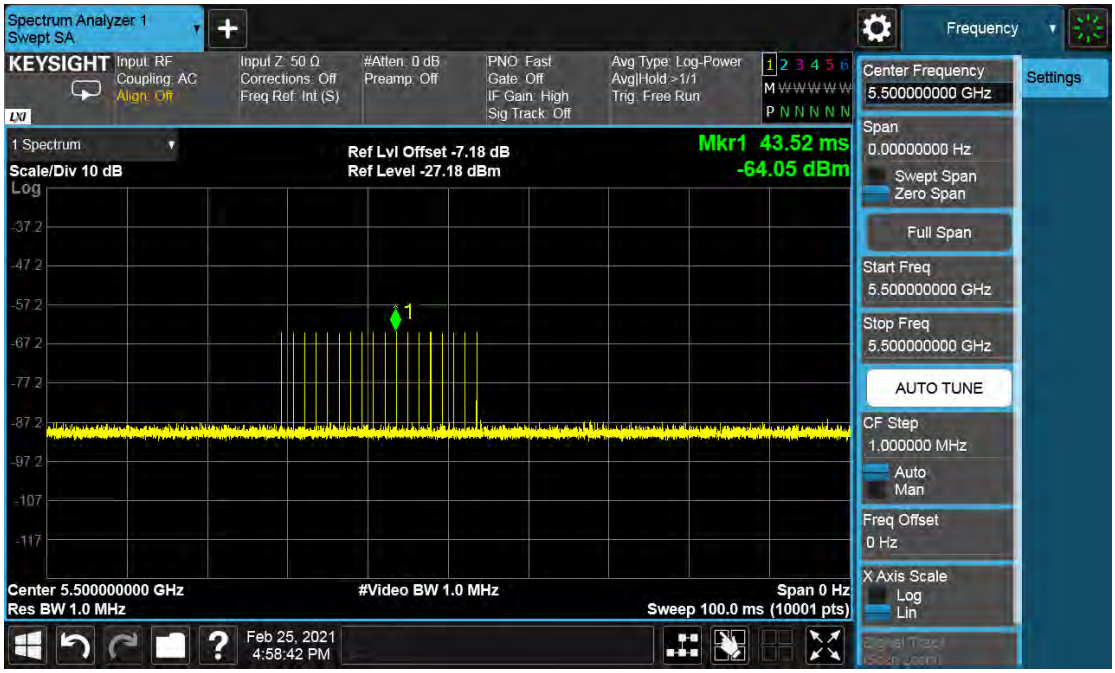
Radar Type 6

Calibration Plot (IEEE 802.11ax_20M_5300MHz)



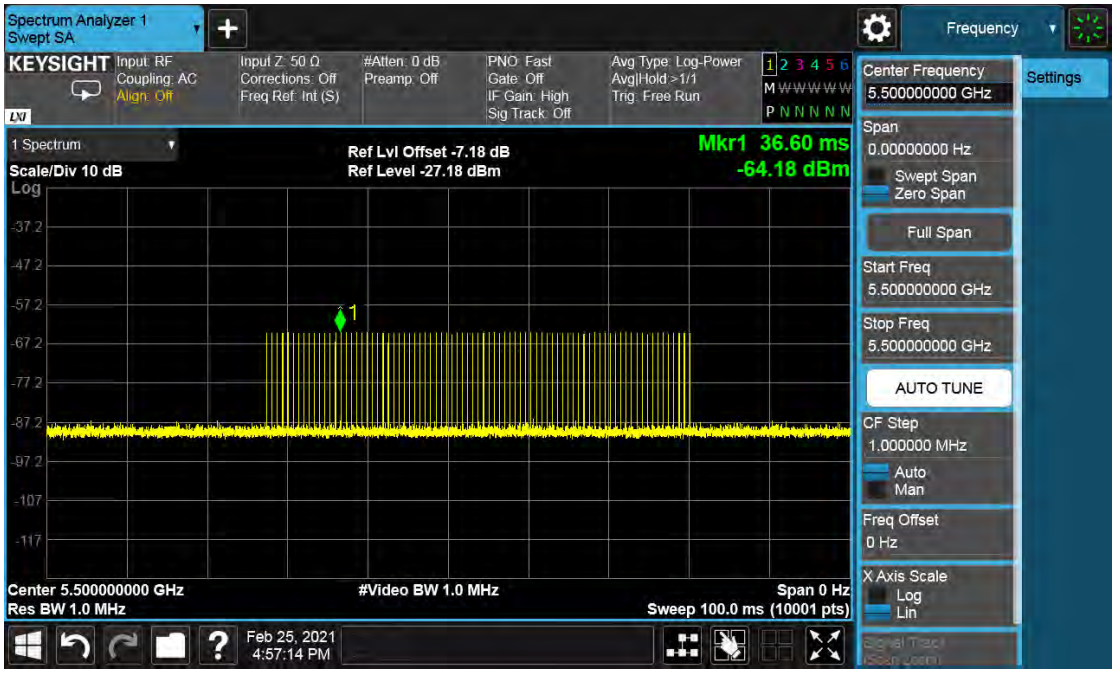
Radar Type 0

Calibration Plot (IEEE 802.11ax_20M_5500MHz)



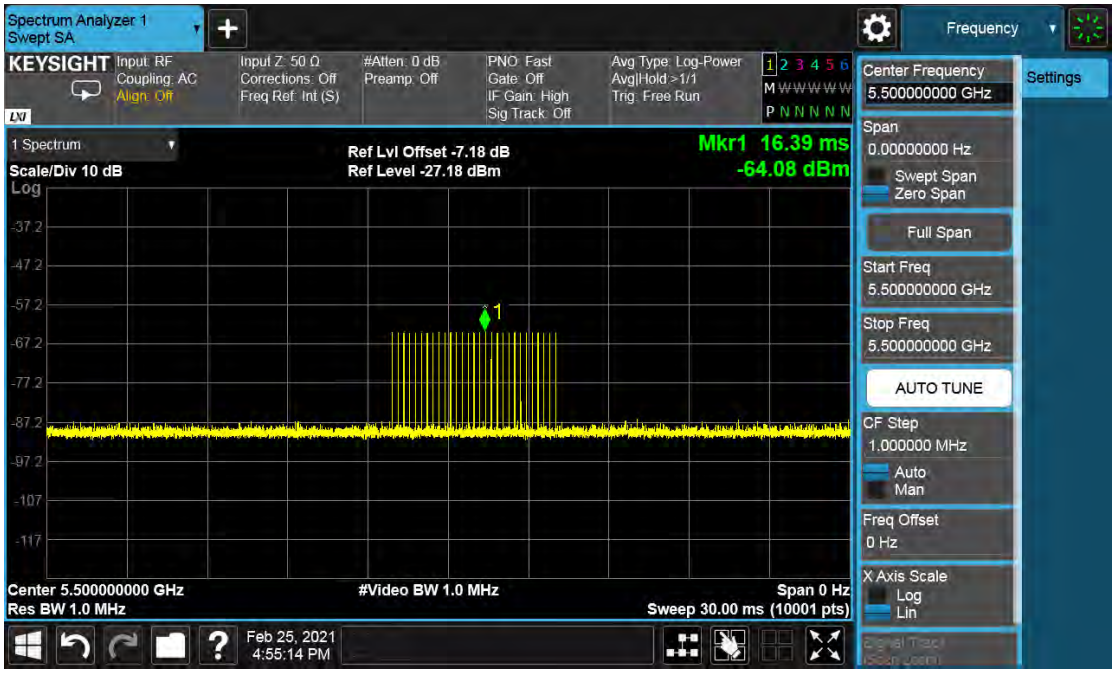
Radar Type 1

Calibration Plot (IEEE 802.11ax_20M_5500MHz)



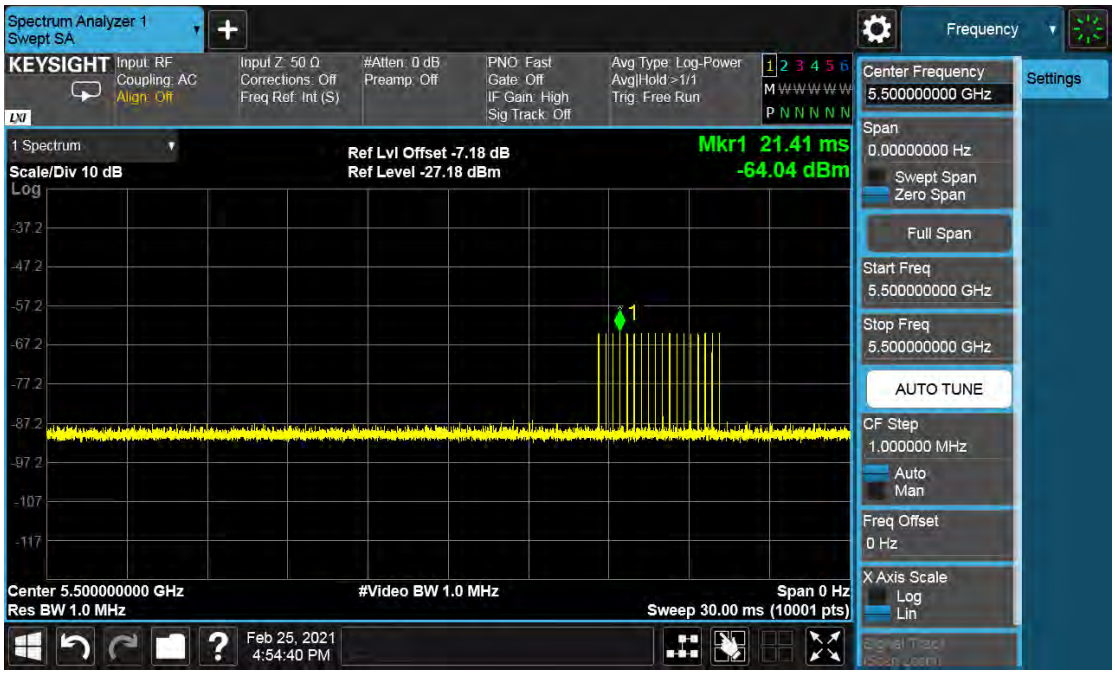
Radar Type 2

Calibration Plot (IEEE 802.11ax_20M_5500MHz)



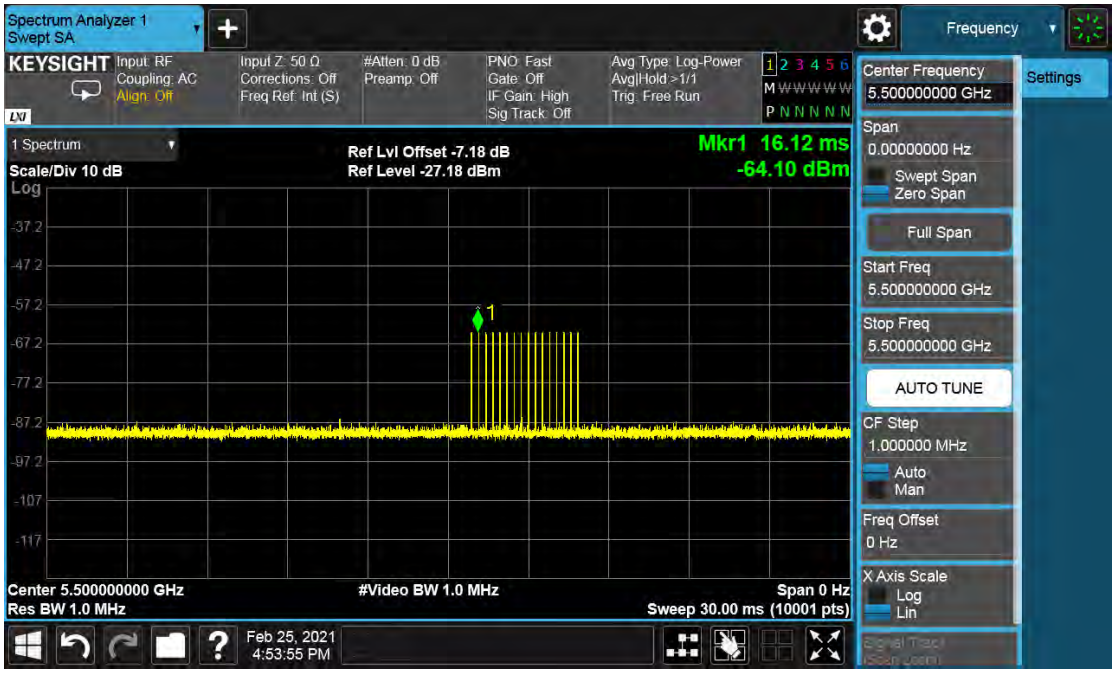
Radar Type 3

Calibration Plot (IEEE 802.11ax_20M_5500MHz)



Radar Type 4

Calibration Plot (IEEE 802.11ax_20M_5500MHz)



Radar Type 5

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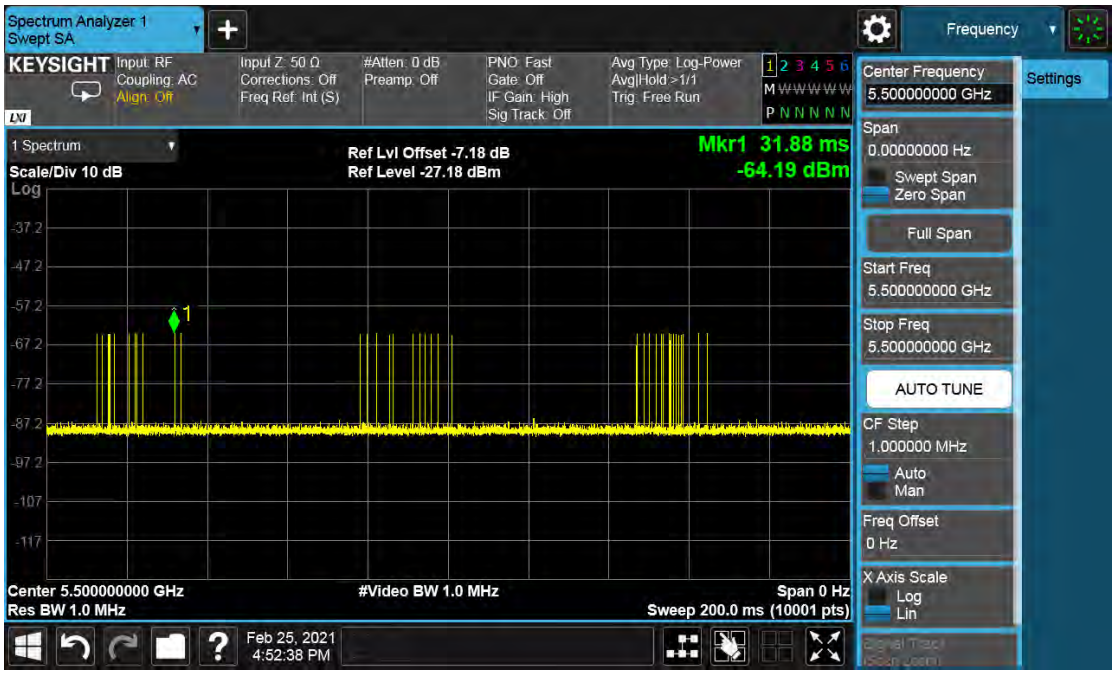
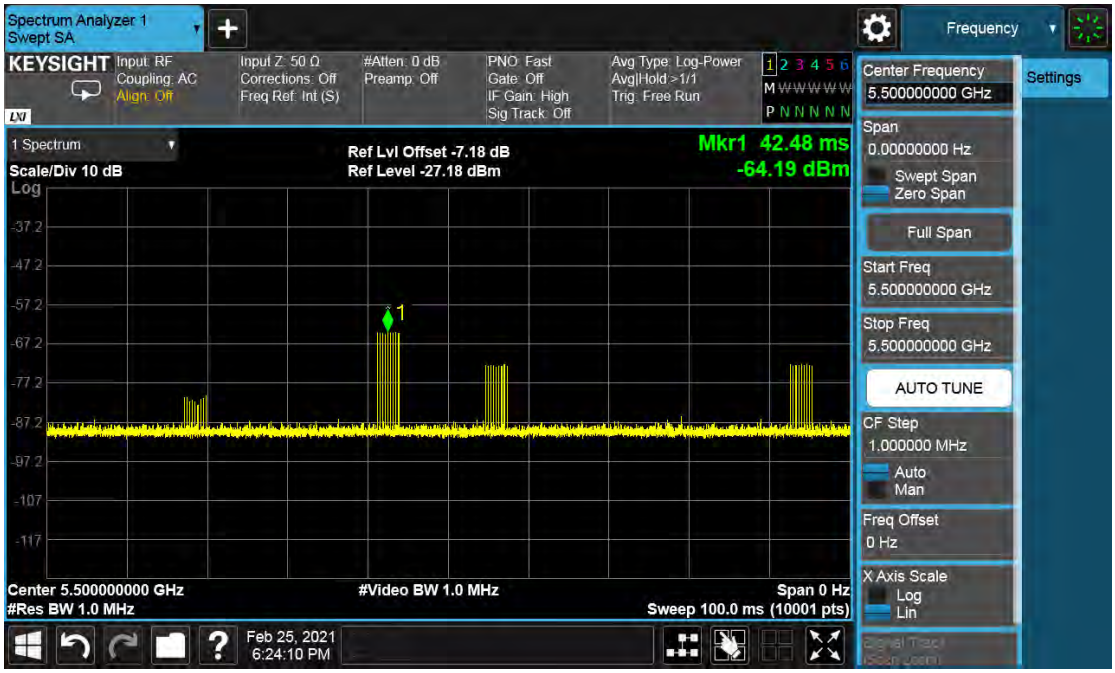


Radar Type 6

Calibration Plot (IEEE 802.11ax_20M_5500MHz)

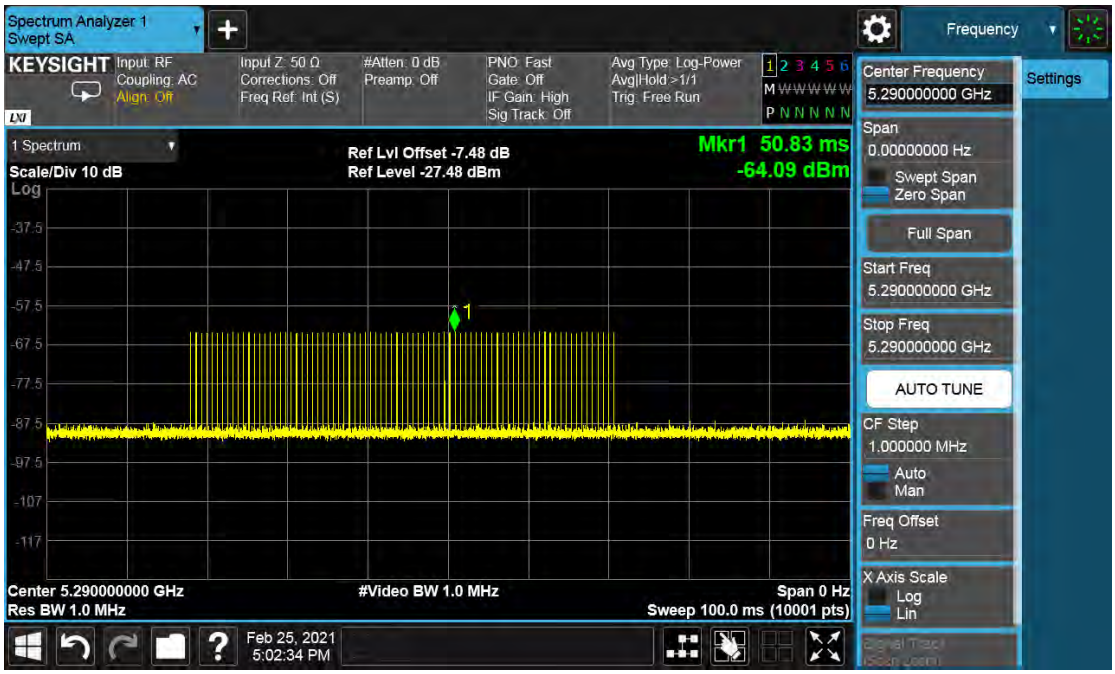


Radar Type 0

Calibration Plot (IEEE 802.11ax_80M_5290MHz)

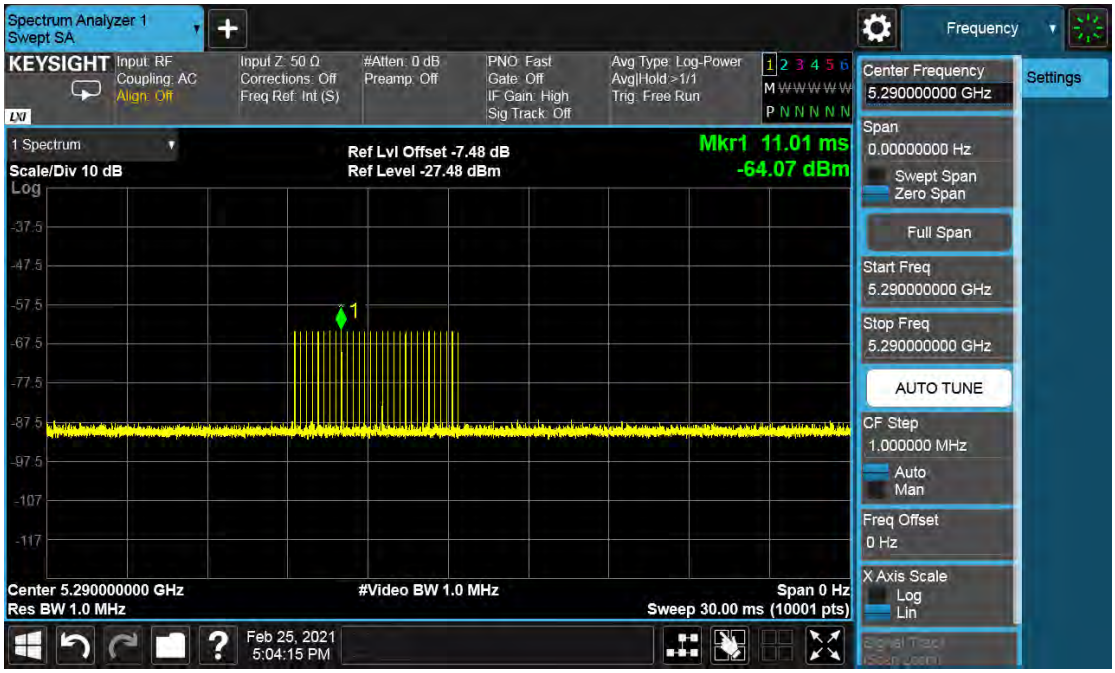
Radar Type 1

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



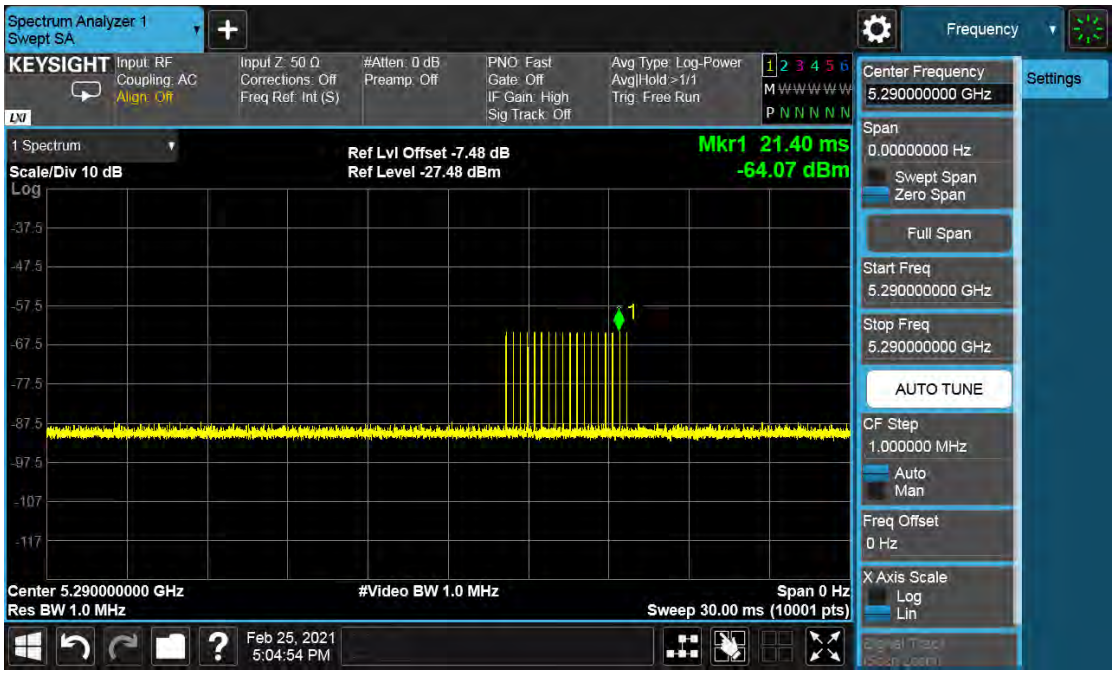
Radar Type 2

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



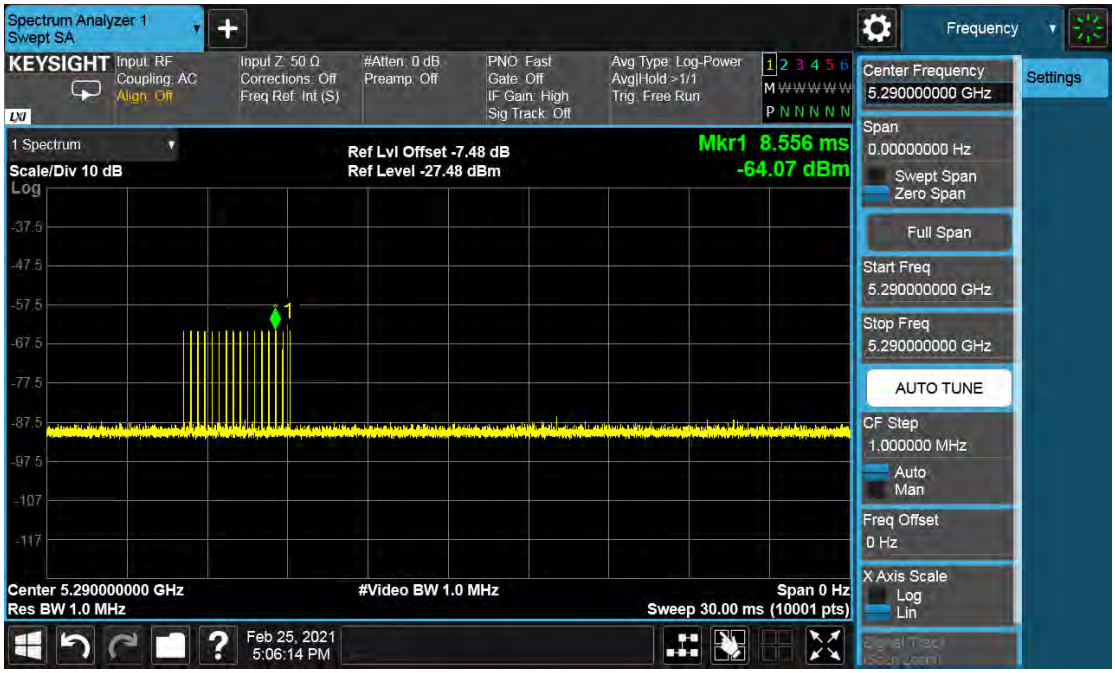
Radar Type 3

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



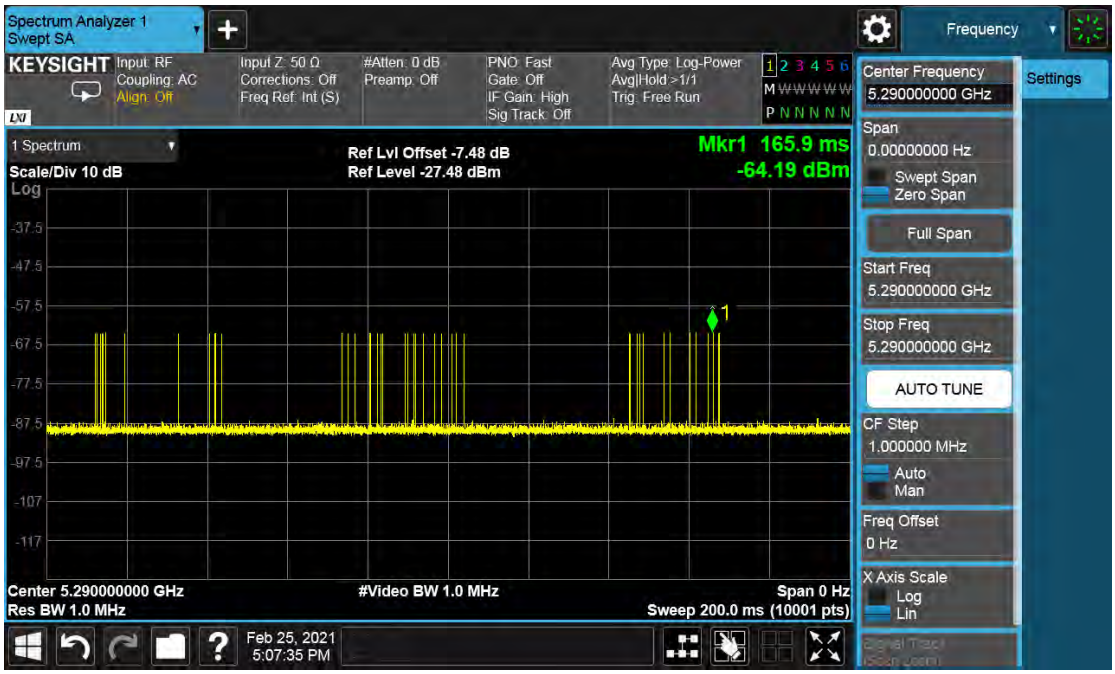
Radar Type 4

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



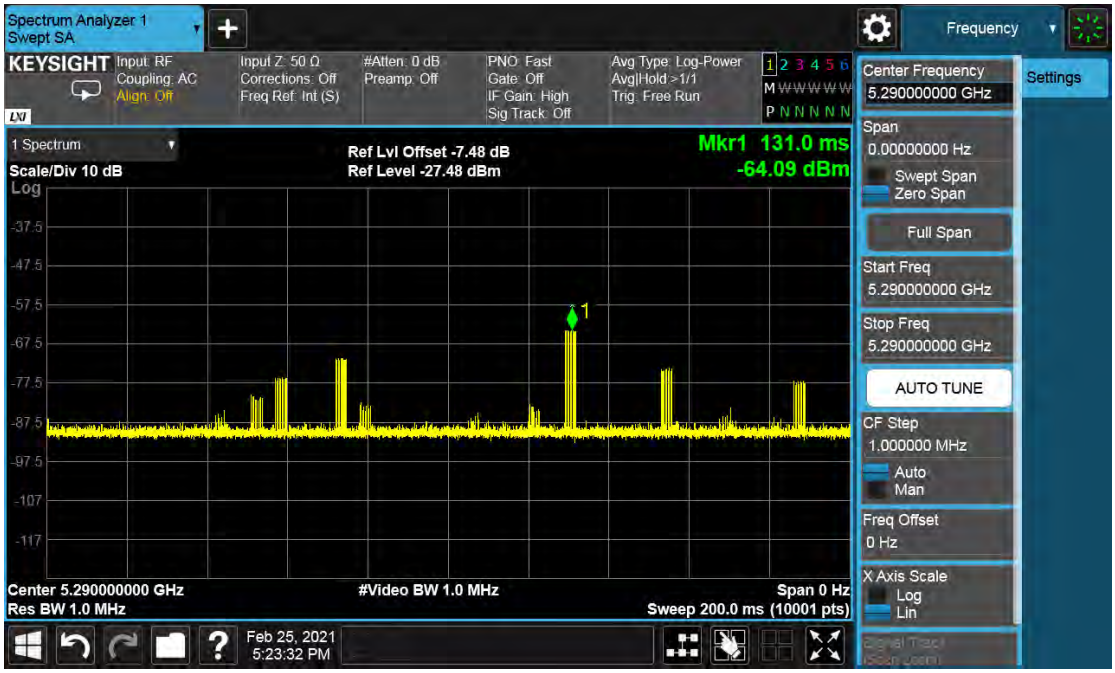
Radar Type 5

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



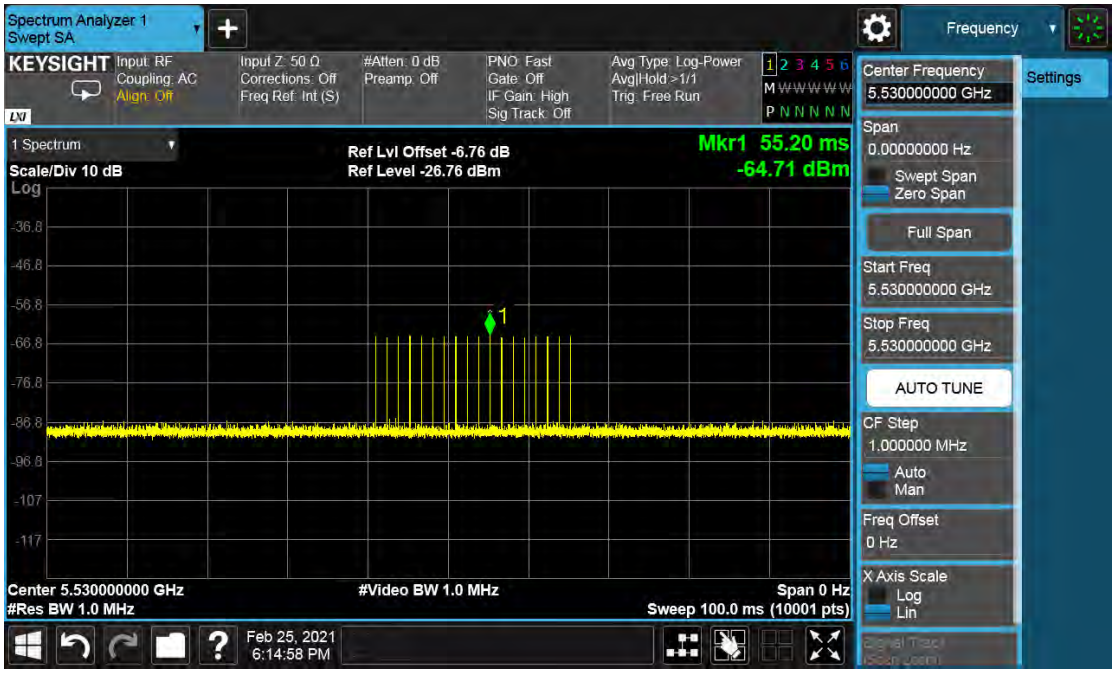
Radar Type 6

Calibration Plot (IEEE 802.11ax_80M_5290MHz)



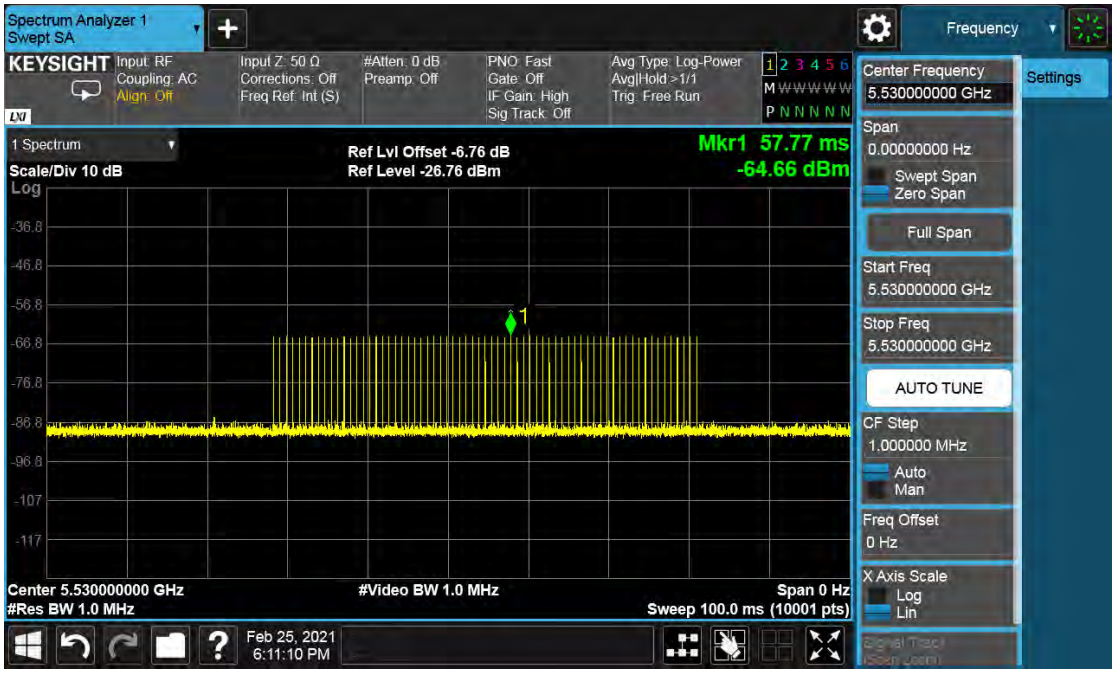
Radar Type 0

Calibration Plot (IEEE 802.11ax_80M_5530MHz)



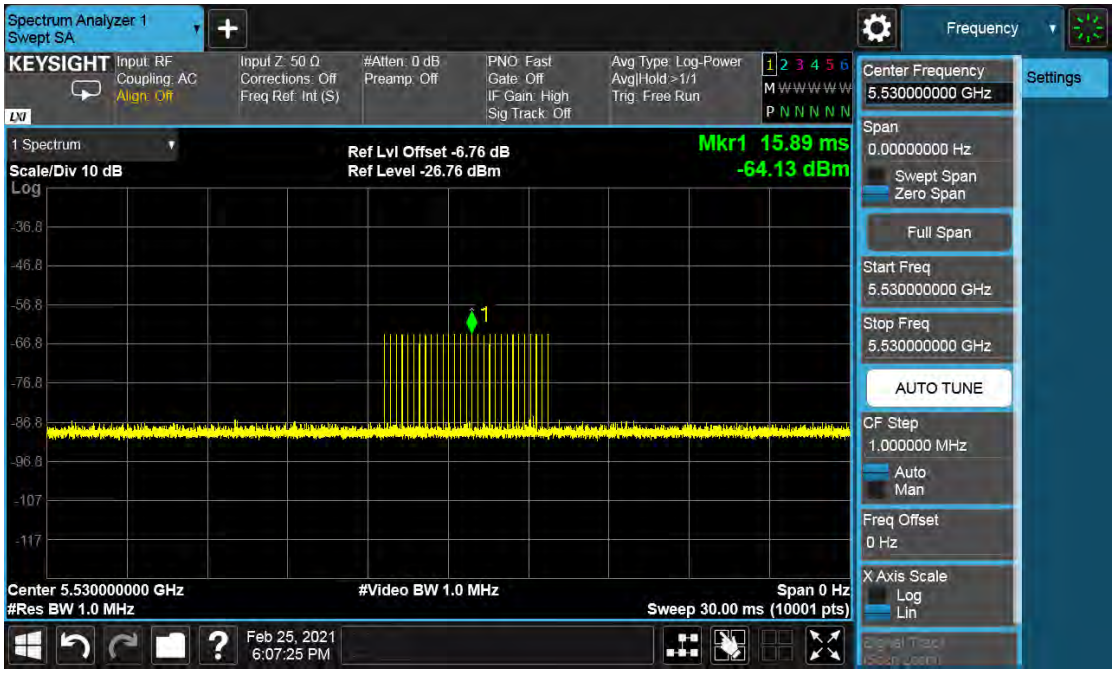
Radar Type 1

Calibration Plot (IEEE 802.11ax_80M_5530MHz)



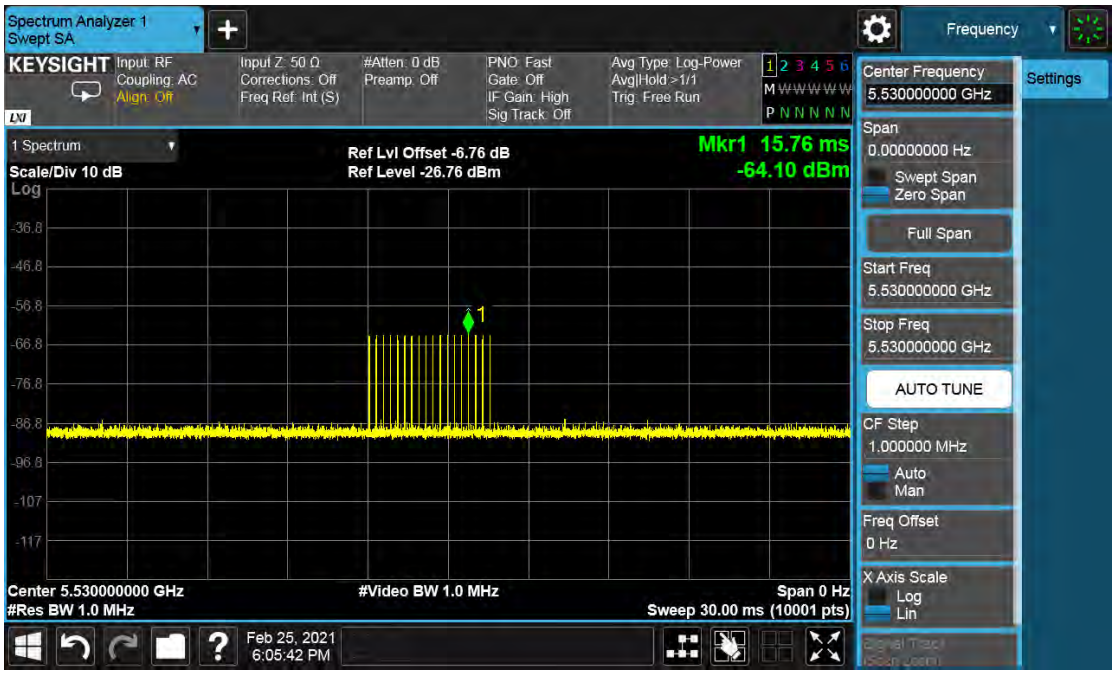
Radar Type 2

Calibration Plot (IEEE 802.11ax_80M_5530MHz)



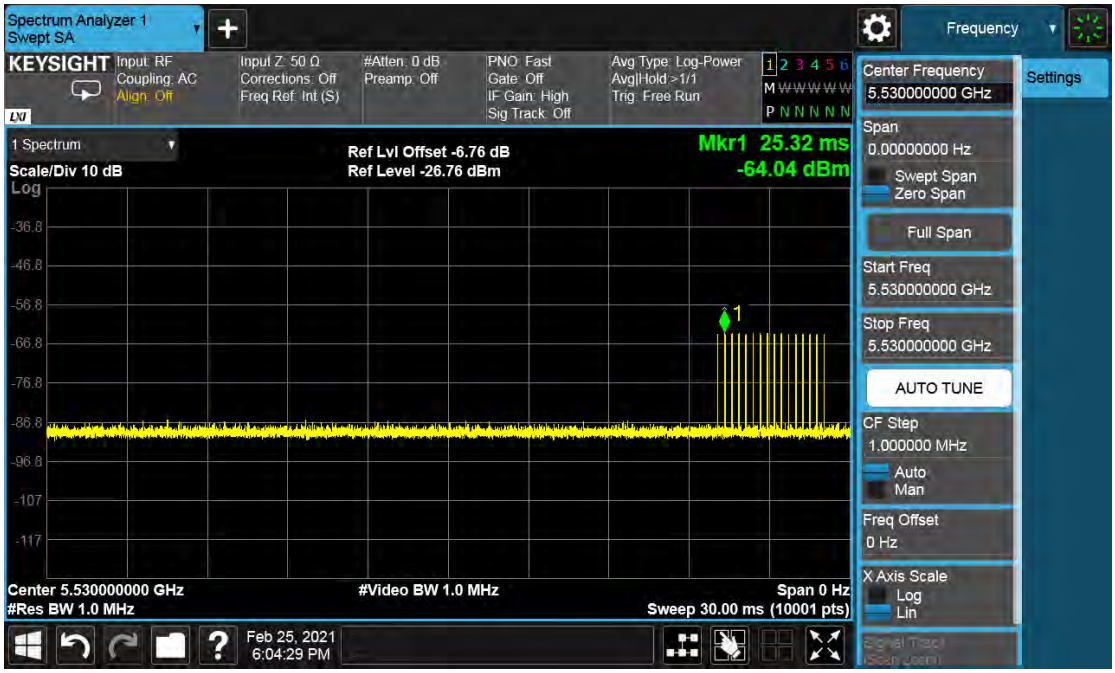
Radar Type 3

Calibration Plot (IEEE 802.11ax_80M_5530MHz)



Radar Type 4

Calibration Plot (IEEE 802.11ax_80M_5530MHz)

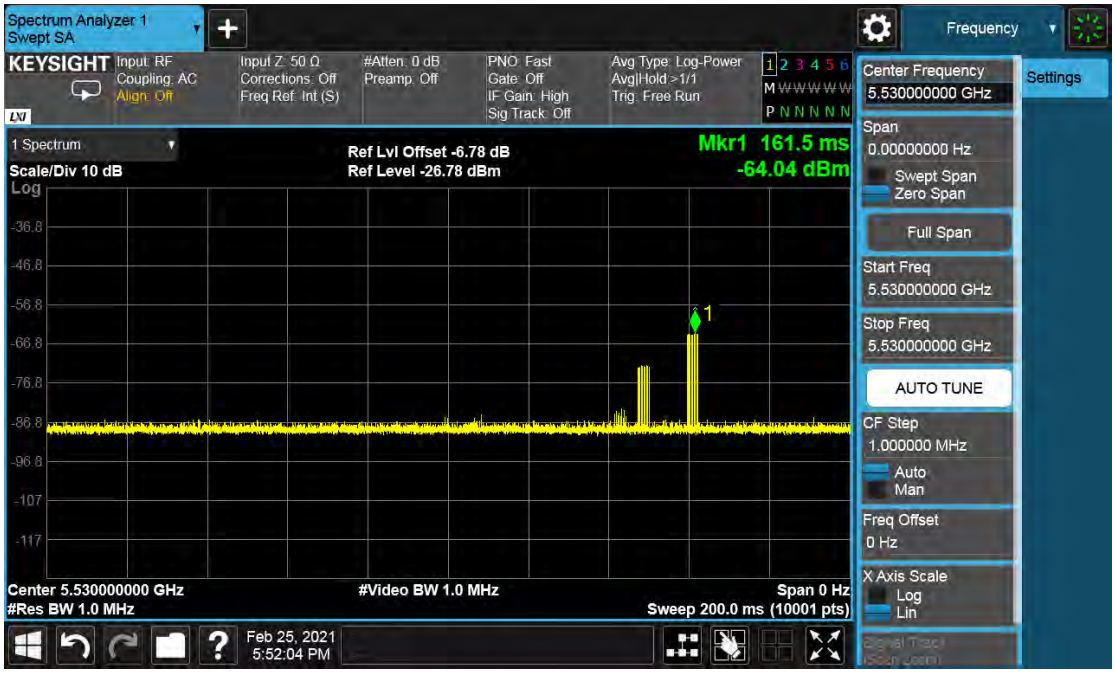


Radar Type 5

Calibration Plot (IEEE 802.11ax_80M_5530MHz)

Radar Type 6

Calibration Plot (IEEE 802.11ax_80M_5530MHz)



1.11. Master Data Traffic Plot Result

Product	Consumer Home Router		
Test Item	Master Data Traffic Plot		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/26~2021/02/28	Test Site	SR10-H
Temperature (°C)	22.6	Humidity (%RH)	63

Plot of WLAN Traffic at IEEE 802.11ax_20M_5300MHz

Channel loading	Requirement loading
17.18125%	>17%

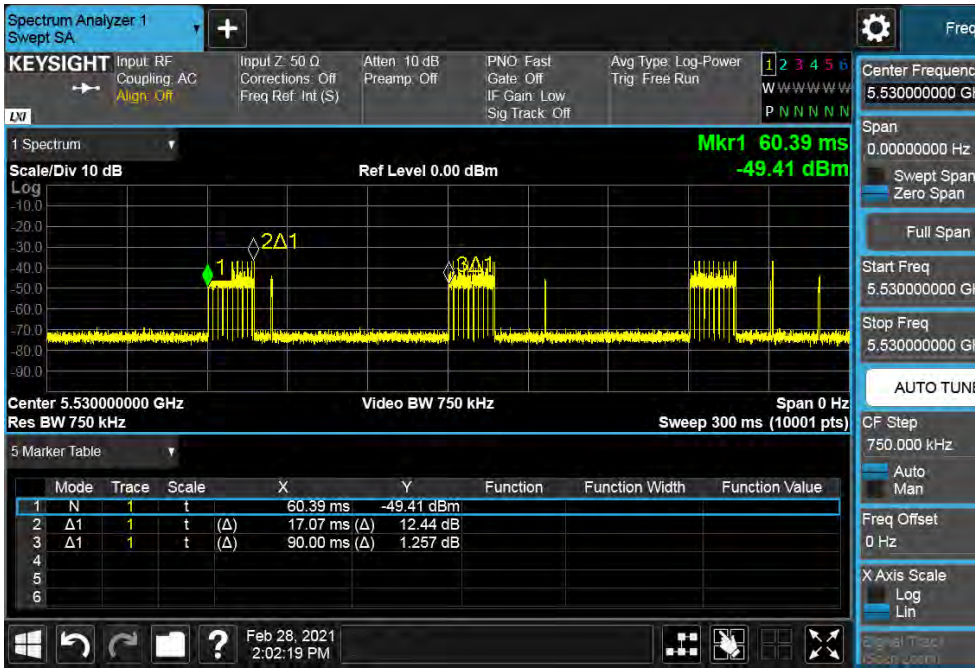
Plot of WLAN Traffic at IEEE 802.11ax_20M_5500MHz

Channel loading	Requirement loading
18.86552%	>17%

Plot of WLAN Traffic at IEEE 802.11ax_80M_5290MHz

Channel loading	Requirement loading
19.0026655%	>17%

Plot of WLAN Traffic at IEEE 802.11ax_80M_5530MHz



Channel loading	Requirement loading
18.96667%	>17%

2. UNII Detection Bandwidth

2.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR
15.407 requirements.
The generating equipment is configured as shown in the radiated Test Setup above. A single *Burst* of the short pulse radar type 0 is produced at 5300MHz and 5510 at a -63dBm level. The EUT is set up as a standalone device (no associated Client and no traffic).
A single radar Burst is generated for a minimum of 10 trials, and the response of the EUT is noted. The EUT 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 the detection rate falls below 90%. The highest frequency at which detection is greater than or equal to 90% is denoted as Fh.
The radar frequency is decreased in 1 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The lowest frequency at which detection is greater than or equal to 90% is denoted as Fl.
The U-NII Detection Bandwidth is calculated as follows:
U-NII Detection Bandwidth = $F_H - F_L$
The U-NII Detection Bandwidth must be at least 100% of the EUT transmitter 99% power, otherwise, the EUT does not comply with DFS requirements.

2.2. Test Requirement

All UNII 20/40/80MHz and 160MHz channels for this device have identical Channel bandwidths. Therefore, all DFS testing was done at 5300MHz、5500MHz、5250MHz and 5570MHz. The 99% channel bandwidth for 20MHz signals is 19.713 MHz, and the 99% channel bandwidth for 160MHz signals is 155.51MHz.

2.3. Test Result of UNII Detection Bandwidth

Product	Consumer Home Router		
Test Item	UNII Detection Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2021/03/12	Test Site	SR10-H
Temperature (°C)	22.7	Humidity (%RH)	64

IEEE 802.11ax_20M_5300MHz											
		1	2	3	4	5	6	7	8	9	10
FL	5290	v	v	v	v	v	v	v	v	v	v
	5291	v	v	v	v	v	v	v	v	v	v
	5292	v	v	v	v	v	v	v	v	v	v
	5293	v	v	v	v	v	v	v	v	v	v
	5294	v	v	v	v	v	v	v	v	v	v
	5295	v	v	v	v	v	v	v	v	v	v
	5296	v	v	v	v	v	v	v	v	v	v
	5297	v	v	v	v	v	v	v	v	v	v
	5298	v	v	v	v	v	v	v	v	v	v
	5299	v	v	v	v	v	v	v	v	v	v
	5300	v	v	v	v	v	v	v	v	v	v
	5301	v	v	v	v	v	v	v	v	v	v
	5302	v	v	v	v	v	v	v	v	v	v
	5303	v	v	v	v	v	v	v	v	v	v
	5304	v	v	v	v	v	v	v	v	v	v
	5305	v	v	v	v	v	v	v	v	v	v
	5306	v	v	v	v	v	v	v	v	v	v
	5307	v	v	v	v	v	v	v	v	v	v
	5308	v	v	v	v	v	v	v	v	v	v
	5309	v	v	v	v	v	v	v	v	v	v
FH	5310	v	v	v	v	v	v	v	v	v	v

Detection Bandwidth = FH - FL = 20MHz

EUT 99% Bandwidth = 19.161MHz

UNII Detection Bandwidth Min. Limit = MHz * 100% = 19.161MHz

IEEE 802.11ax_20M_5500MHz											
		1	2	3	4	5	6	7	8	9	10
FL	5490	v	v	v	v	v	v	v	v	v	v
	5491	v	v	v	v	v	v	v	v	v	v
	5492	v	v	v	v	v	v	v	v	v	v
	5493	v	v	v	v	v	v	v	v	v	v
	5494	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5496	v	v	v	v	v	v	v	v	v	v
	5497	v	v	v	v	v	v	v	v	v	v
	5498	v	v	v	v	v	v	v	v	v	v
	5499	v	v	v	v	v	v	v	v	v	v
	5500	v	v	v	v	v	v	v	v	v	v
	5501	v	v	v	v	v	v	v	v	v	v
	5502	v	v	v	v	v	v	v	v	v	v
	5503	v	v	v	v	v	v	v	v	v	v
	5504	v	v	v	v	v	v	v	v	v	v
	5505	v	v	v	v	v	v	v	v	v	v
	5506	v	v	v	v	v	v	v	v	v	v
	5507	v	v	v	v	v	v	v	v	v	v
	5508	v	v	v	v	v	v	v	v	v	v
	5509	v	v	v	v	v	v	v	v	v	v
FH	5510	v	v	v	v	v	v	v	v	v	v

Detection Bandwidth = FH - FL = 20MHz

EUT 99% Bandwidth = 19.103MHz

UNII Detection Bandwidth Min. Limit = MHz * 100% = 19.103MHz

IEEE 802.11ax_80M_5290MHz											
		1	2	3	4	5	6	7	8	9	10
FL	5250	v	v	v	v	v	v	v	v	v	v
	5251	v	v	v	v	v	v	v	v	v	v
	5252	v	v	v	v	v	v	v	v	v	v
	5253	v	v	v	v	v	v	v	v	v	v
	5254	v	v	v	v	v	v	v	v	v	v
	5255	v	v	v	v	v	v	v	v	v	v
	5256	v	v	v	v	v	v	v	v	v	v
	5257	v	v	v	v	v	v	v	v	v	v
	5258	v	v	v	v	v	v	v	v	v	v
	5259	v	v	v	v	v	v	v	v	v	v
	5260	v	v	v	v	v	v	v	v	v	v
	5261	v	v	v	v	v	v	v	v	v	v
	5262	v	v	v	v	v	v	v	v	v	v
	5263	v	v	v	v	v	v	v	v	v	v
	5264	v	v	v	v	v	v	v	v	v	v
	5265	v	v	v	v	v	v	v	v	v	v
	5266	v	v	v	v	v	v	v	v	v	v
	5267	v	v	v	v	v	v	v	v	v	v
	5268	v	v	v	v	v	v	v	v	v	v
	5269	v	v	v	v	v	v	v	v	v	v
	5270	v	v	v	v	v	v	v	v	v	v
	5271	v	v	v	v	v	v	v	v	v	v
	5272	v	v	v	v	v	v	v	v	v	v
	5273	v	v	v	v	v	v	v	v	v	v
	5274	v	v	v	v	v	v	v	v	v	v
	5275	v	v	v	v	v	v	v	v	v	v
	5276	v	v	v	v	v	v	v	v	v	v
	5277	v	v	v	v	v	v	v	v	v	v
	5278	v	v	v	v	v	v	v	v	v	v
	5279	v	v	v	v	v	v	v	v	v	v
	5280	v	v	v	v	v	v	v	v	v	v

IEEE 802.11ax_80M_5290MHz											
		1	2	3	4	5	6	7	8	9	10
	5281	v	v	v	v	v	v	v	v	v	v
	5282	v	v	v	v	v	v	v	v	v	v
	5283	v	v	v	v	v	v	v	v	v	v
	5284	v	v	v	v	v	v	v	v	v	v
	5285	v	v	v	v	v	v	v	v	v	v
	5286	v	v	v	v	v	v	v	v	v	v
	5287	v	v	v	v	v	v	v	v	v	v
	5288	v	v	v	v	v	v	v	v	v	v
	5289	v	v	v	v	v	v	v	v	v	v
	5290	v	v	v	v	v	v	v	v	v	v
	5291	v	v	v	v	v	v	v	v	v	v
	5292	v	v	v	v	v	v	v	v	v	v
	5293	v	v	v	v	v	v	v	v	v	v
	5294	v	v	v	v	v	v	v	v	v	v
	5295	v	v	v	v	v	v	v	v	v	v
	5296	v	v	v	v	v	v	v	v	v	v
	5297	v	v	v	v	v	v	v	v	v	v
	5298	v	v	v	v	v	v	v	v	v	v
	5299	v	v	v	v	v	v	v	v	v	v
	5300	v	v	v	v	v	v	v	v	v	v
	5301	v	v	v	v	v	v	v	v	v	v
	5302	v	v	v	v	v	v	v	v	v	v
	5303	v	v	v	v	v	v	v	v	v	v
	5304	v	v	v	v	v	v	v	v	v	v
	5305	v	v	v	v	v	v	v	v	v	v
	5306	v	v	v	v	v	v	v	v	v	v
	5307	v	v	v	v	v	v	v	v	v	v
	5308	v	v	v	v	v	v	v	v	v	v
	5309	v	v	v	v	v	v	v	v	v	v
	5310	v	v	v	v	v	v	v	v	v	v

IEEE 802.11ax_80M_5290MHz											
		1	2	3	4	5	6	7	8	9	10
	5311	v	v	v	v	v	v	v	v	v	v
	5312	v	v	v	v	v	v	v	v	v	v
	5313	v	v	v	v	v	v	v	v	v	v
	5314	v	v	v	v	v	v	v	v	v	v
	5315	v	v	v	v	v	v	v	v	v	v
	5316	v	v	v	v	v	v	v	v	v	v
	5317	v	v	v	v	v	v	v	v	v	v
	5318	v	v	v	v	v	v	v	v	v	v
	5319	v	v	v	v	v	v	v	v	v	v
	5320	v	v	v	v	v	v	v	v	v	v
	5321	v	v	v	v	v	v	v	v	v	v
	5322	v	v	v	v	v	v	v	v	v	v
	5323	v	v	v	v	v	v	v	v	v	v
	5324	v	v	v	v	v	v	v	v	v	v
	5325	v	v	v	v	v	v	v	v	v	v
	5326	v	v	v	v	v	v	v	v	v	v
	5327	v	v	v	v	v	v	v	v	v	v
	5328	v	v	v	v	v	v	v	v	v	v
	5329	v	v	v	v	v	v	v	v	v	v
FH	5330	v	v	v	v	v	v	v	v	v	v

Detection Bandwidth = FH - FL = 80MHz

EUT 99% Bandwidth = 77.270MHz

UNII Detection Bandwidth Min. Limit = MHz * 100% = 77.270MHz

IEEE 802.11ax_80M_5530MHz											
		1	2	3	4	5	6	7	8	9	10
FL	5490	v	v	v	v	v	v	v	v	v	v
	5491	v	v	v	v	v	v	v	v	v	v
	5492	v	v	v	v	v	v	v	v	v	v
	5493	v	v	v	v	v	v	v	v	v	v
	5494	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5496	v	v	v	v	v	v	v	v	v	v
	5497	v	v	v	v	v	v	v	v	v	v
	5498	v	v	v	v	v	v	v	v	v	v
	5499	v	v	v	v	v	v	v	v	v	v
	5500	v	v	v	v	v	v	v	v	v	v
	5501	v	v	v	v	v	v	v	v	v	v
	5502	v	v	v	v	v	v	v	v	v	v
	5503	v	v	v	v	v	v	v	v	v	v
	5504	v	v	v	v	v	v	v	v	v	v
	5505	v	v	v	v	v	v	v	v	v	v
	5506	v	v	v	v	v	v	v	v	v	v
	5507	v	v	v	v	v	v	v	v	v	v
	5508	v	v	v	v	v	v	v	v	v	v
	5509	v	v	v	v	v	v	v	v	v	v
	5510	v	v	v	v	v	v	v	v	v	v
	5511	v	v	v	v	v	v	v	v	v	v
	5512	v	v	v	v	v	v	v	v	v	v
	5513	v	v	v	v	v	v	v	v	v	v
	5514	v	v	v	v	v	v	v	v	v	v
	5515	v	v	v	v	v	v	v	v	v	v
	5516	v	v	v	v	v	v	v	v	v	v
	5517	v	v	v	v	v	v	v	v	v	v
	5518	v	v	v	v	v	v	v	v	v	v
	5519	v	v	v	v	v	v	v	v	v	v
	5520	v	v	v	v	v	v	v	v	v	v

IEEE 802.11ax_80M_5530MHz											
		1	2	3	4	5	6	7	8	9	10
	5521	v	v	v	v	v	v	v	v	v	v
	5522	v	v	v	v	v	v	v	v	v	v
	5523	v	v	v	v	v	v	v	v	v	v
	5524	v	v	v	v	v	v	v	v	v	v
	5525	v	v	v	v	v	v	v	v	v	v
	5526	v	v	v	v	v	v	v	v	v	v
	5527	v	v	v	v	v	v	v	v	v	v
	5528	v	v	v	v	v	v	v	v	v	v
	5529	v	v	v	v	v	v	v	v	v	v
	5530	v	v	v	v	v	v	v	v	v	v
	5531	v	v	v	v	v	v	v	v	v	v
	5532	v	v	v	v	v	v	v	v	v	v
	5533	v	v	v	v	v	v	v	v	v	v
	5534	v	v	v	v	v	v	v	v	v	v
	5535	v	v	v	v	v	v	v	v	v	v
	5536	v	v	v	v	v	v	v	v	v	v
	5537	v	v	v	v	v	v	v	v	v	v
	5538	v	v	v	v	v	v	v	v	v	v
	5539	v	v	v	v	v	v	v	v	v	v
	5540	v	v	v	v	v	v	v	v	v	v
	5541	v	v	v	v	v	v	v	v	v	v
	5542	v	v	v	v	v	v	v	v	v	v
	5543	v	v	v	v	v	v	v	v	v	v
	5544	v	v	v	v	v	v	v	v	v	v
	5545	v	v	v	v	v	v	v	v	v	v
	5546	v	v	v	v	v	v	v	v	v	v
	5547	v	v	v	v	v	v	v	v	v	v
	5548	v	v	v	v	v	v	v	v	v	v
	5549	v	v	v	v	v	v	v	v	v	v
	5550	v	v	v	v	v	v	v	v	v	v

IEEE 802.11ax_80M_5530MHz											
		1	2	3	4	5	6	7	8	9	10
	5551	v	v	v	v	v	v	v	v	v	v
	5552	v	v	v	v	v	v	v	v	v	v
	5553	v	v	v	v	v	v	v	v	v	v
	5554	v	v	v	v	v	v	v	v	v	v
	5555	v	v	v	v	v	v	v	v	v	v
	5556	v	v	v	v	v	v	v	v	v	v
	5557	v	v	v	v	v	v	v	v	v	v
	5558	v	v	v	v	v	v	v	v	v	v
	5559	v	v	v	v	v	v	v	v	v	v
	5560	v	v	v	v	v	v	v	v	v	v
	5561	v	v	v	v	v	v	v	v	v	v
	5562	v	v	v	v	v	v	v	v	v	v
	5563	v	v	v	v	v	v	v	v	v	v
	5564	v	v	v	v	v	v	v	v	v	v
	5565	v	v	v	v	v	v	v	v	v	v
	5566	v	v	v	v	v	v	v	v	v	v
	5567	v	v	v	v	v	v	v	v	v	v
	5568	v	v	v	v	v	v	v	v	v	v
	5569	v	v	v	v	v	v	v	v	v	v
FH	5570	v	v	v	v	v	v	v	v	v	v

Detection Bandwidth = FH - FL = 77MHz

EUT 99% Bandwidth = 77.191MHz

UNII Detection Bandwidth Min. Limit = MHz * 100% = 77.191MHz

3. Initial Channel Availability Check Time

3.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.
The U-NII device is powered on and instructed to operate at 5300/5510 MHz and 5530MHz.
At the same time the UUT is powered on, the spectrum analyzer is set to zero span mode with a 3 MHz resolution bandwidth at 5300/5510 MHz and 5530MHz with a 2.5minute sweep time.
The analyzer's sweep will be started the same time power is applied to the U-NII device.
The EUT 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 EUT is indicated by marker1 in the plot, Initial beacons/data transmissions are indicated by marker 1R.

3.2. Test Requirement

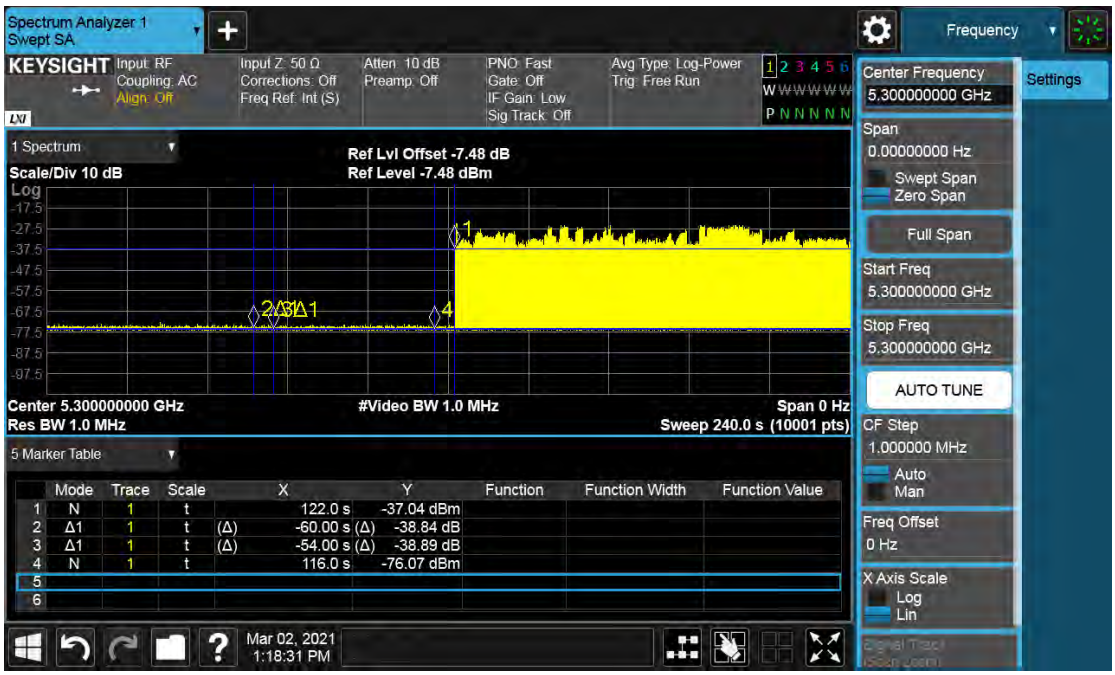
The EUT shall perform a channel availability check to ensure that there is no radar operation on the channel, after power-up sequence, receiver at least 1 minute on the intended operation frequency.

3.3. Test Result of Initial Channel Availability Check Time

Product	Consumer Home Router		
Test Item	Initial Channel Availability Check Time		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/28~2021/03/02	Test Site	SR10-H
Temperature (°C)	23.2	Humidity (%RH)	57

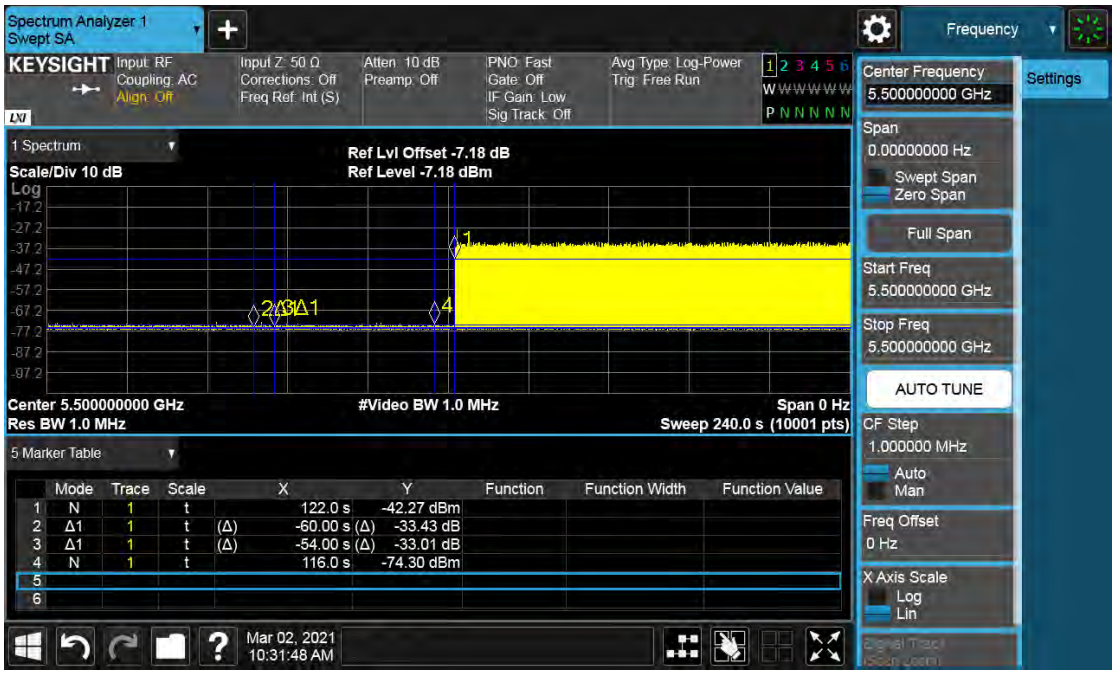
The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (62 sec). The initial power up time of the EUT is indicated by Marker 1 (122 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (122 sec)

IEEE 802.11ax_20M_5300MHz



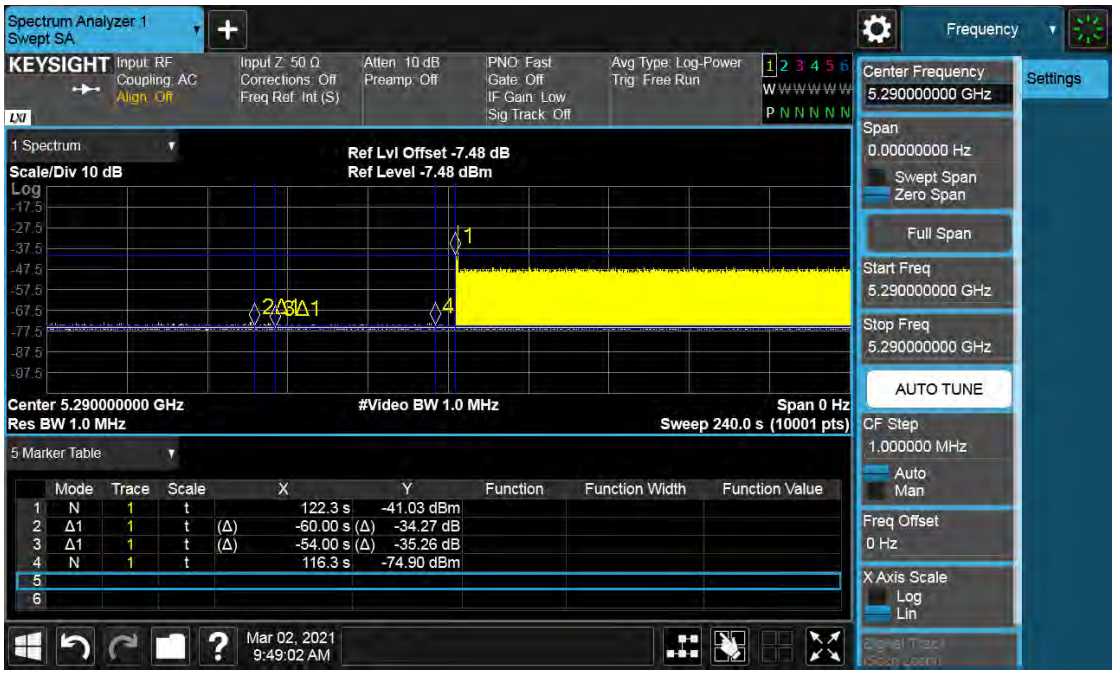
The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (62 sec). The initial power up time of the EUT is indicated by Marker 1 (122 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (122 sec)

IEEE 802.11ax_20M_5500MHz



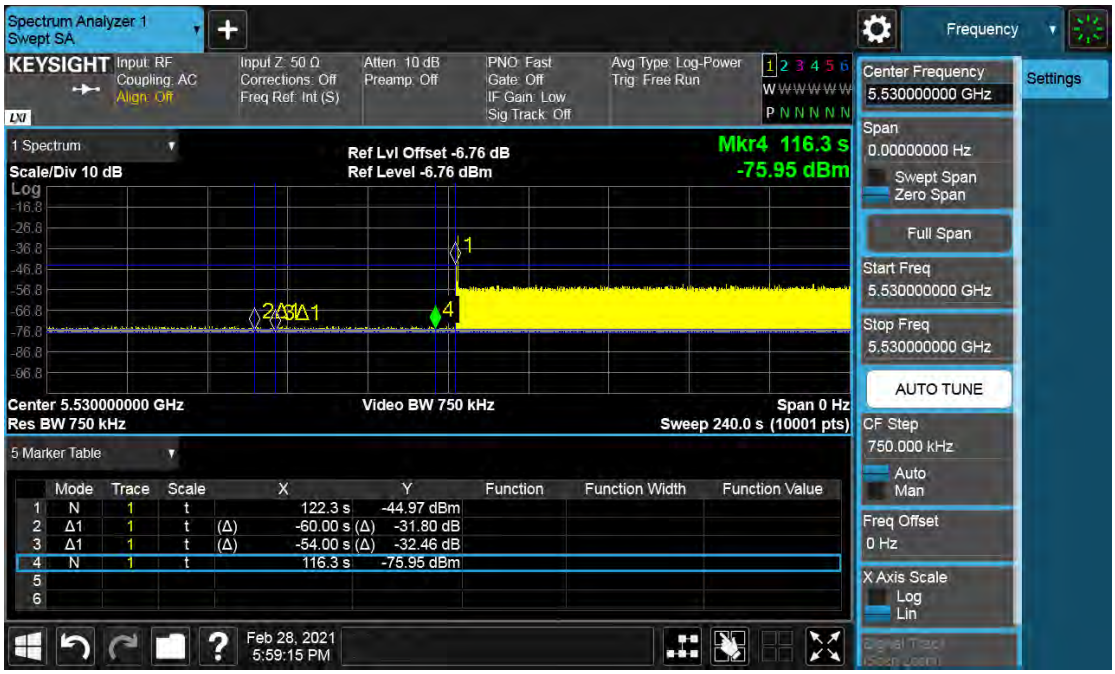
The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (62.3 sec). The initial power up time of the EUT is indicated by Marker 1 (122.3 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (122.3 sec)

IEEE 802.11ax_80M_5290MHz



The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (62.3 sec). The initial power up time of the EUT is indicated by Marker 1 (122.3 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (122.3 sec)

IEEE 802.11ax_80M_5530MHz



4. Radar Burst at the Beginning of the Channel Availability Check Time

4.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.

The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB (-63dBm) occurs at the beginning of the Channel Availability Check Time.

The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up

sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds.

A single Burst of short pulse of radar type 1 at -63dBm will commence within a 6 second window starting at T1.

Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5300MHz/5510MHz and 5630MHz will continue for 2.5 minutes after the radar Burst, Verify that during the 2.5 minute measurement window no EUT transmissions occurred at 5300MHz/5510MHz and 5630MHz.

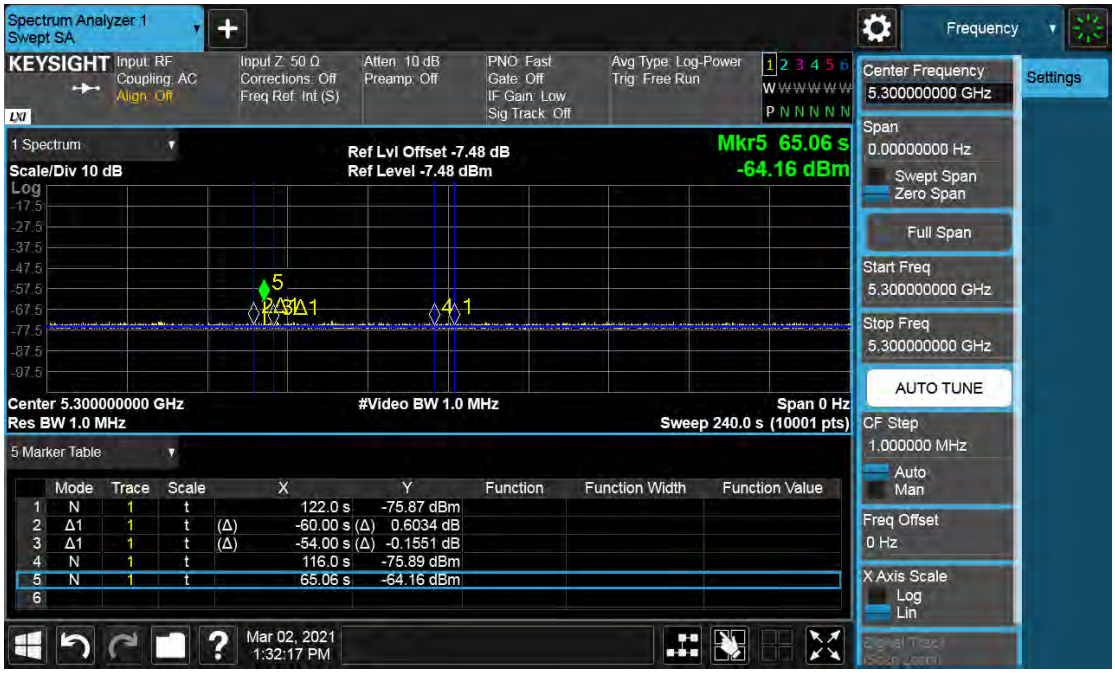
4.2. Test Requirement

In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC that channel.

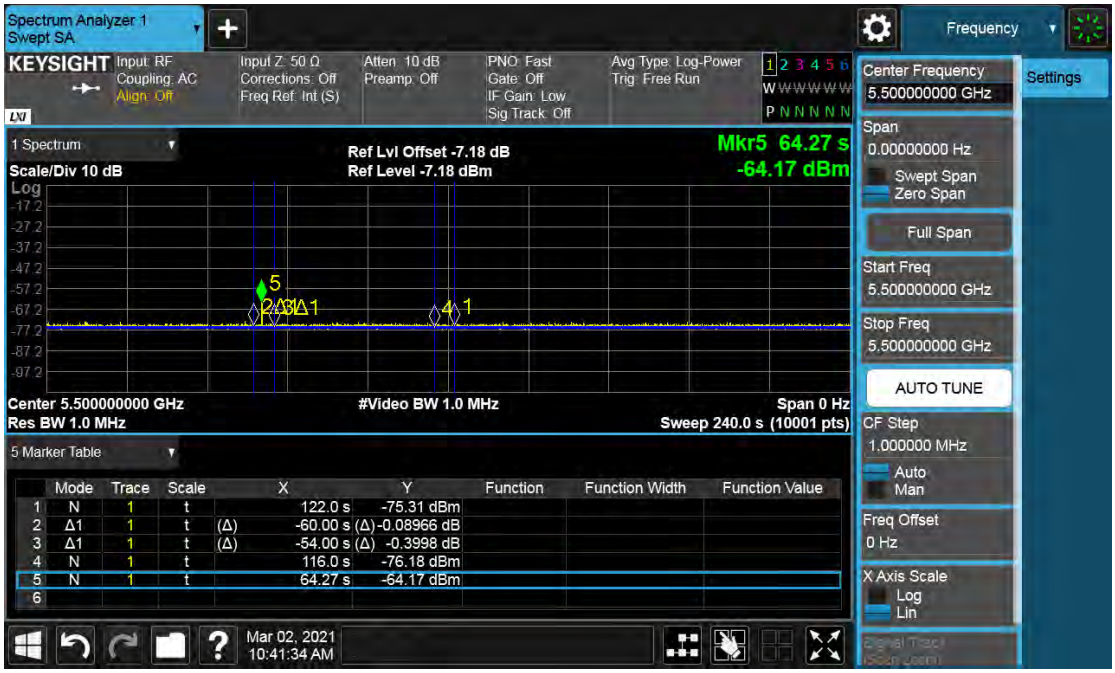
4.3. Test Result of Radar Burst at the Beginning of the Channel Availability Check Time

Product	Consumer Home Router		
Test Item	Radar Burst at the Beginning of the Channel Availability Check Time		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/28~2021/03/02	Test Site	SR10-H
Temperature (°C)	23.2	Humidity (%RH)	57

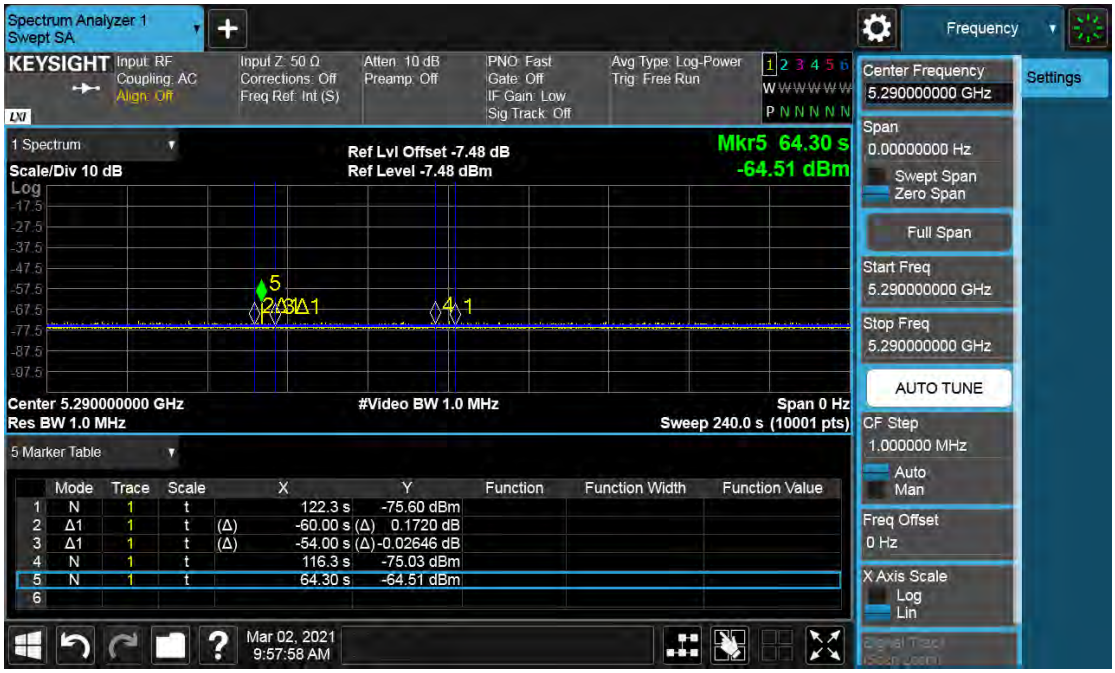
IEEE 802.11ax_20M_5300MHz



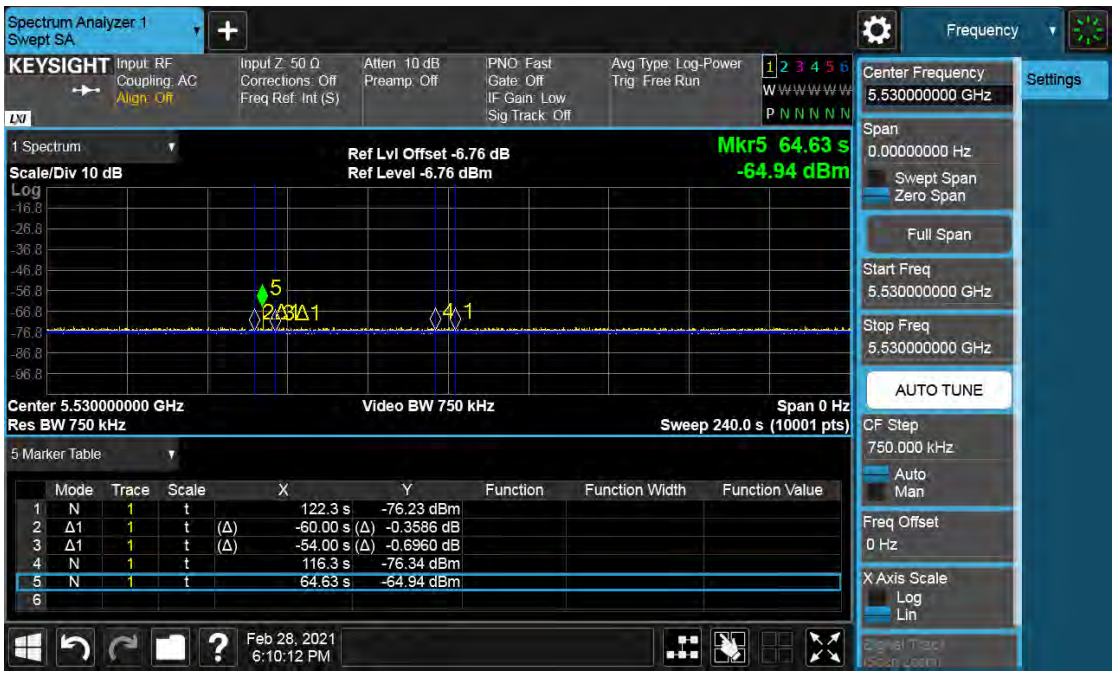
IEEE 802.11ax_20M_5500MHz



IEEE 802.11ax_80M_5290MHz



IEEE 802.11ax_80M_5530MHz



5. Radar Burst at the End of the Channel Availability Check Time

5.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.

The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB (-63dBm) 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. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of short pulse of radar type 1 at -63 dBm will commence within a 6 second window starting at T1+ 54 seconds.

Visual indication on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions at 5300MHz/5510MHz and 5630MHz 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 at 5300MHz /5510MHz and 5630MHz.

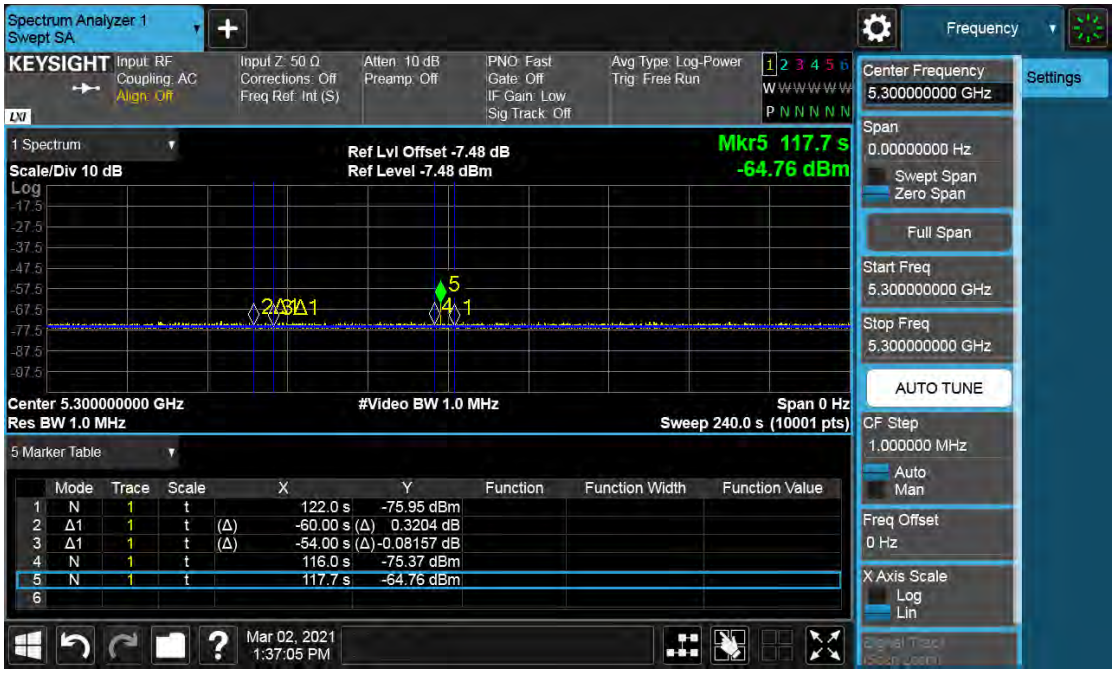
5.2. Test Requirement

In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC that channel.

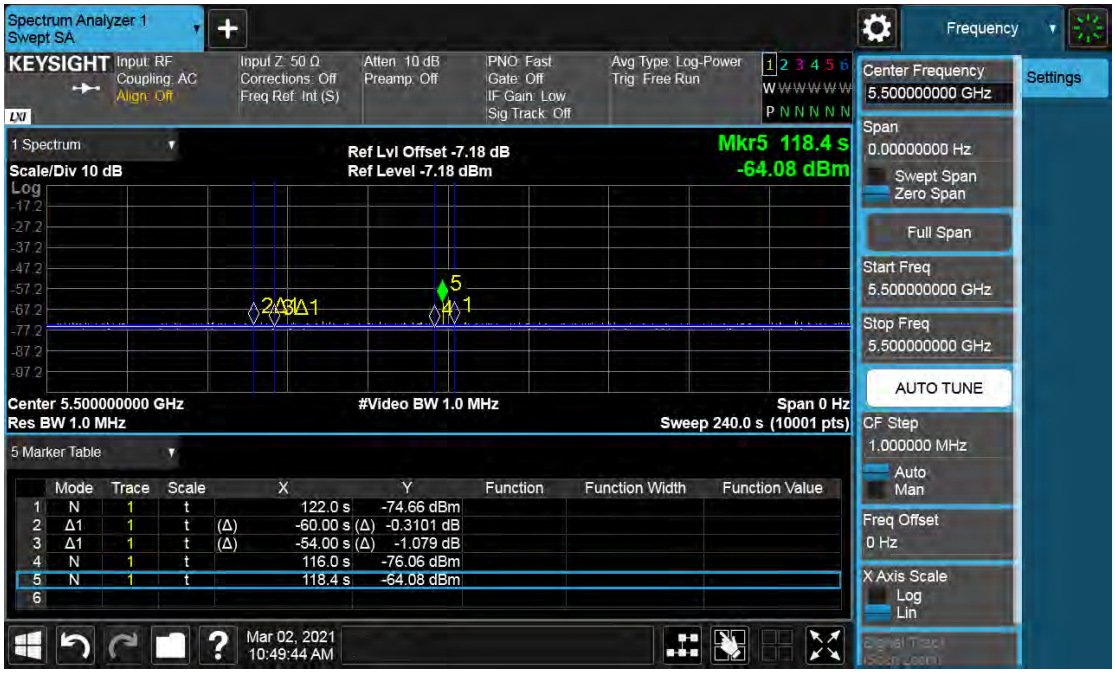
5.3. Test Result of Radar Burst at the End of the Channel Availability Check Time

Product	Consumer Home Router		
Test Item	Radar Burst at the End of the Channel Availability Check Time		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/28~2021/03/02	Test Site	SR10-H
Temperature (°C)	23.2	Humidity (%RH)	57

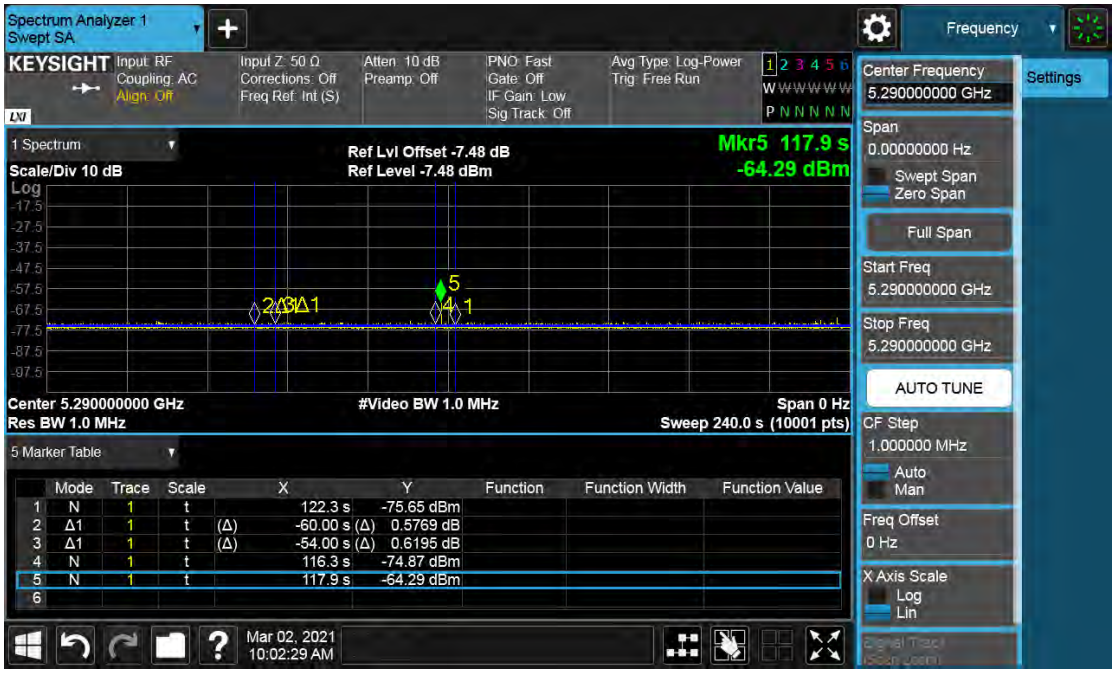
IEEE 802.11ax_20M_5300MHz



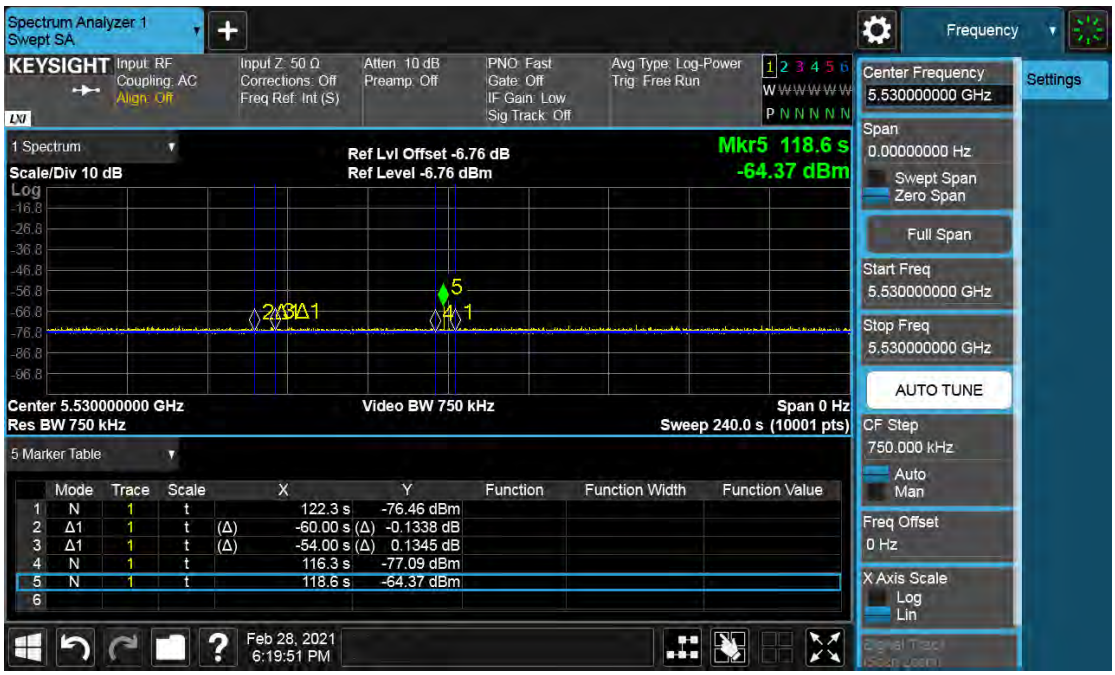
IEEE 802.11ax_20M_5500MHz



IEEE 802.11ax_80M_5290MHz



IEEE 802.11ax_80M_5530MHz



6. In-Service Monitoring for Channel Move Time and Channel Closing Transmission Time and Non-Occupancy Period

6.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.

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 (-63dBm) is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the UUT (Master) at 5300MHz/ 5510MHz and 5630MHz.

Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test.

At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types at -63dBm.

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.

Measure the UUT for more than 30 minutes following the channel close/move time to verify that the UUT does not resume any transmissions on this Channel.

6.2. Test Requirement

Parameter	Value
Channel Move Time	10 Seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period
Non-Occupancy Period	Minimum 30 minutes

6.3. Test Result of Channel Move Time and Channel Closing Transmission Time and Non-Occupancy Period

Product	Consumer Home Router		
Test Item	In-Service Monitoring		
Test Mode	Mode 1: Transmit		
Date of Test	2021/03/12	Test Site	SR10-H
Temperature (°C)	22.7	Humidity (%RH)	64

In-Service Monitoring Results at IEEE 802.11ax_20M_5300MHz

Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	20	90.00	60	Pass
Type D.4.2	20	93.33	60	Pass
Type D.4.3	20	93.33	60	Pass
Type D.4.4	20	83.33	60	Pass
Type D.4.5	20	83.33	60	Pass
Type D.4.6	20	100.00	60	Pass

IEEE 802.11ax_20M_5300MHz_C60						
	Type_1	Type_2	Type_3	Type_4	Type_5	Type_6
1	v	v	v	v	v	v
2	v	v	v	v	v	v
3	v	v	v	v	x	v
4	v	x	v	v	v	v
5	v	v	v	v	v	v
6	v	v	x	x	v	v
7	v	v	v	x	v	v
8	v	v	v	v	v	v
9	x	v	v	v	v	v
10	v	v	v	v	v	v
11	v	v	v	x	v	v
12	v	v	v	v	v	v
13	v	v	v	v	v	v
14	v	v	v	v	x	v
15	v	v	v	v	v	v
16	v	v	v	v	v	v
17	v	v	v	v	x	v
18	v	v	v	v	v	v
19	v	x	v	v	v	v
20	v	v	v	v	v	v
21	v	v	v	v	v	v
22	v	v	v	v	v	v
23	v	v	v	v	v	v
24	v	v	v	x	v	v
25	v	v	x	v	v	v
26	v	v	v	v	v	v
27	v	v	v	v	v	v
28	v	v	v	v	v	v
29	x	v	v	v	x	v
30	x	v	v	x	x	v
Number of Successful	27	28	28	25	25	30
% of Successful	90.00%	93.33%	93.33%	83.33%	83.33%	100.00%
	90.00%					

In-Service Monitoring Results at IEEE 802.11ax_20M_5500MHz

Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	20	90.00	60	Pass
Type D.4.2	20	86.67	60	Pass
Type D.4.3	20	93.33	60	Pass
Type D.4.4	20	90.00	60	Pass
Type D.4.5	20	100.00	60	Pass
Type D.4.6	20	93.33	60	Pass

IEEE 802.11ax_20M_5500MHz _C100						
	Type_1	Type_2	Type_3	Type_4	Type_5	Type_6
1	v	v	v	v	v	v
2	v	x	v	v	v	v
3	v	v	v	v	v	v
4	v	v	v	v	v	v
5	v	v	v	v	v	v
6	v	x	v	v	v	v
7	v	v	x	v	v	v
8	x	v	v	v	v	v
9	v	v	v	v	v	v
10	v	v	v	v	v	v
11	v	v	v	v	v	x
12	v	v	v	v	v	v
13	v	v	v	v	v	v
14	v	v	v	x	v	v
15	v	v	v	v	v	v
16	v	x	v	v	v	v
17	v	v	v	v	v	v
18	v	v	v	v	v	v
19	x	v	v	v	v	v
20	v	v	v	v	v	v
21	v	x	v	v	v	v
22	v	v	v	v	v	v
23	v	v	x	v	v	v
24	v	v	v	v	v	v
25	v	v	v	v	v	v
26	v	v	v	v	v	x
27	v	v	v	x	v	v
28	x	v	v	v	v	v
29	v	v	v	x	v	v
30	v	v	v	v	v	v
Number of Successful	27	26	28	27	30	28
% of Successful	90.00%	86.67%	93.33%	90.00%	100.00%	93.33%
	90.00%					

In-Service Monitoring Results at IEEE 802.11ax_80M_5290MHz

Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	20	96.67	60	Pass
Type D.4.2	20	90.00	60	Pass
Type D.4.3	20	100.00	60	Pass
Type D.4.4	20	93.33	60	Pass
Type D.4.5	20	100.00	60	Pass
Type D.4.6	20	100.00	60	Pass

IEEE 802.11ax_80M_5290MHz_C58						
	Type_1	Type_2	Type_3	Type_4	Type_5	Type_6
1	v	v	v	v	v	v
2	v	x	v	v	v	v
3	v	v	v	v	v	v
4	v	v	v	v	v	v
5	v	v	v	v	v	v
6	v	v	v	v	v	v
7	v	v	v	v	v	v
8	v	v	v	v	v	v
9	x	v	v	v	v	v
10	v	v	v	v	v	v
11	v	v	v	v	v	v
12	v	v	v	x	v	v
13	v	v	v	v	v	v
14	v	x	v	v	v	v
15	v	v	v	v	v	v
16	v	v	v	v	v	v
17	v	v	v	v	v	v
18	v	v	v	v	v	v
19	v	v	v	v	v	v
20	v	v	v	x	v	v
21	v	v	v	v	v	v
22	v	v	v	v	v	v
23	v	v	v	v	v	v
24	v	v	v	v	v	v
25	v	x	v	v	v	v
26	v	v	v	v	v	v
27	v	v	v	v	v	v
28	v	v	v	v	v	v
29	v	v	v	v	v	v
30	v	v	v	v	v	v
Number of Successful	29	27	30	28	30	30
% of Successful	96.67%	90.00%	100.00%	93.33%	100.00%	100.00%
	95.00%					

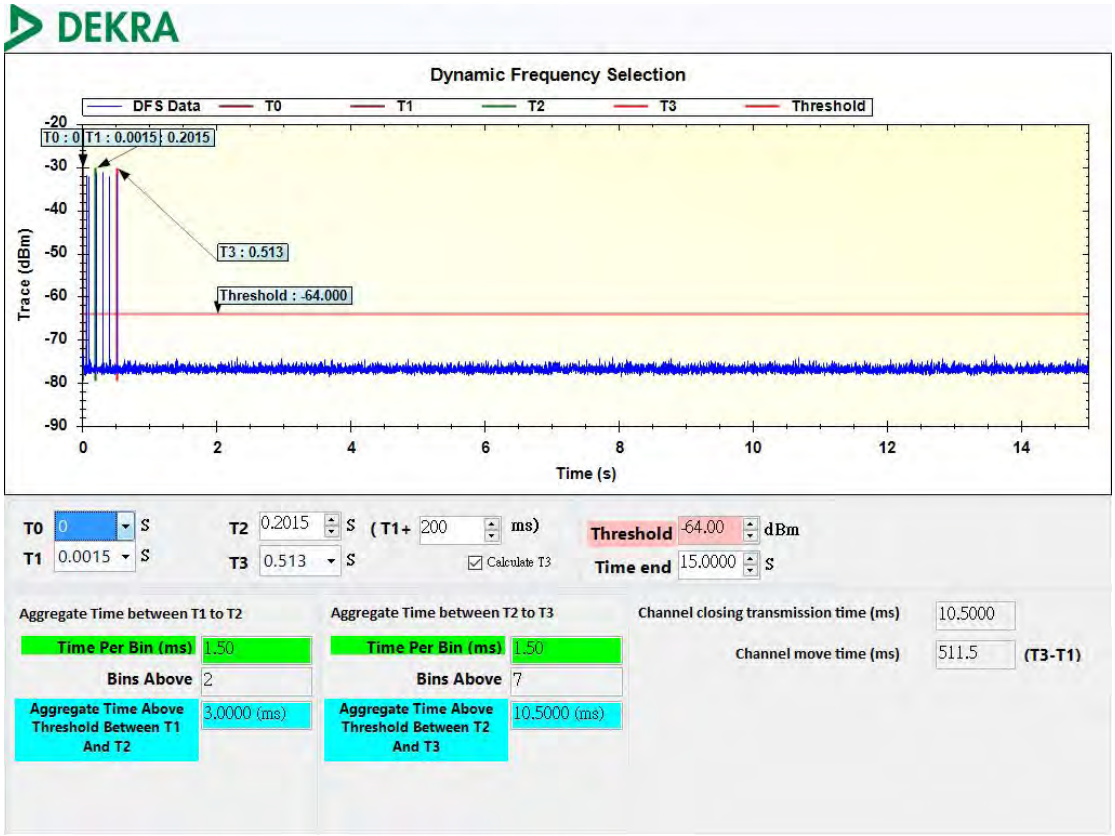
In-Service Monitoring Results at IEEE 802.11ax_80M_5530MHz

Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Pass/Fail
Type D.4.1	20	96.67	60	Pass
Type D.4.2	20	86.67	60	Pass
Type D.4.3	20	93.33	60	Pass
Type D.4.4	20	96.67	60	Pass
Type D.4.5	20	100.00	60	Pass
Type D.4.6	20	96.67	60	Pass

IEEE 802.11ax_80M_5530MHz_C106						
	Type_1	Type_2	Type_3	Type_4	Type_5	Type_6
1	v	v	v	v	v	v
2	v	v	v	v	v	v
3	v	v	v	v	v	v
4	v	v	v	v	v	v
5	v	v	v	v	v	v
6	v	x	v	v	v	v
7	v	v	v	v	v	v
8	v	x	v	v	v	v
9	x	v	v	v	v	v
10	v	v	v	x	v	v
11	v	v	v	v	v	v
12	v	v	v	v	v	v
13	v	v	x	v	v	v
14	v	v	x	v	v	v
15	v	v	v	v	v	v
16	v	v	v	v	v	v
17	v	x	v	v	v	v
18	v	v	v	v	v	v
19	v	v	v	v	v	v
20	v	v	v	v	v	v
21	v	v	v	v	v	v
22	v	v	v	v	v	v
23	v	v	v	v	v	v
24	v	v	v	v	v	v
25	v	v	v	v	v	v
26	v	v	v	v	v	v
27	v	v	v	v	v	v
28	v	x	v	v	v	v
29	v	v	v	v	v	v
30	v	v	v	v	v	x
Number of Successful	29	26	28	29	30	29
% of Successful	96.67%	86.67%	93.33%	96.67%	100.00%	96.67%
	93.33%					

Product	Consumer Home Router		
Test Item	Channel Closing Transmission Time		
Test Mode	Mode 1: Transmit		
Date of Test	2021/02/28~2021/03/02	Test Site	SR10-H
Temperature (°C)	23.2	Humidity (%RH)	57

Channel Closing Transmission Time at IEEE 802.11ax_20M_5300MHz



Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.5115	10
Channel Closing Transmission	0.0105	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period

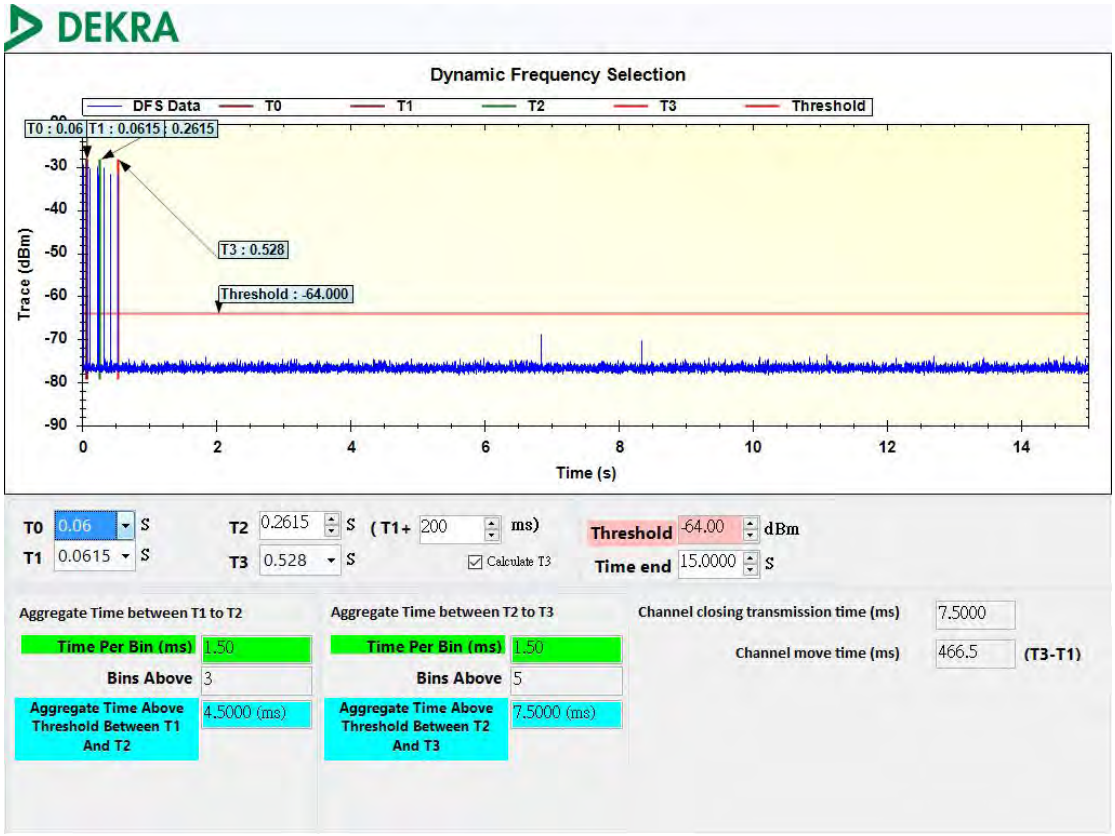
The results showed that after radar signal injected the channel move time was less than 10 seconds and channel transmission closing time less than 200 milliseconds and an aggregate of no more than 60 milliseconds.

Non-Occupancy Period at IEEE 802.11ax_20M_5300MHz

Test Item	Test Result (Minutes)	Limit (Minutes)
Non-Occupancy Period	>30	>30

*No EUT transmissions were observed on the test channel during 30 minutes observation time.

Channel Closing Transmission Time at IEEE 802.11ax_20M_5500MHz



Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.4665	10
Channel Closing Transmission	0.0075	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period

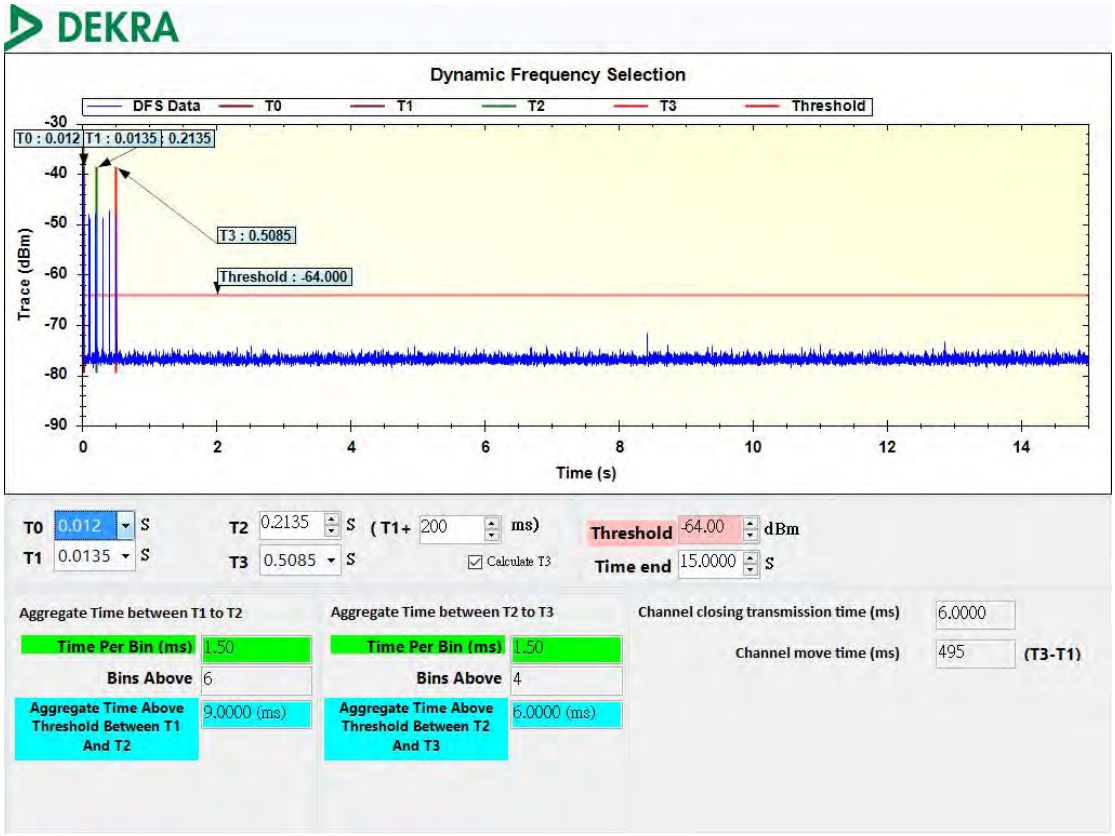
The results showed that after radar signal injected the channel move time was less than 10 seconds and channel transmission closing time less than 200 milliseconds and an aggregate of no more than 60 milliseconds.

Non-Occupancy Period at IEEE 802.11ax_20M_5500MHz

Test Item	Test Result (Minutes)	Limit (Minutes)
Non-Occupancy Period	>30	>30

*No EUT transmissions were observed on the test channel during 30 minutes observation time.

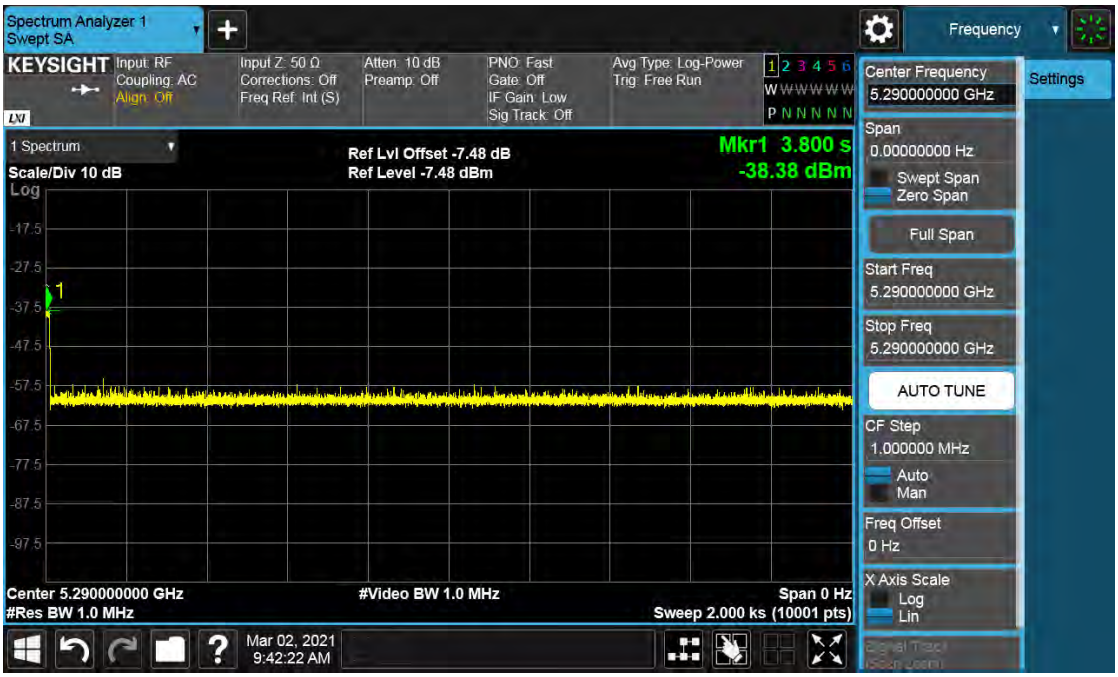
Channel Closing Transmission Time at IEEE 802.11ax_80M_5290MHz



Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.495	10
Channel Closing Transmission	0.0006	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period

The results showed that after radar signal injected the channel move time was less than 10 seconds and channel transmission closing time less than 200 milliseconds and an aggregate of no more than 60 milliseconds.

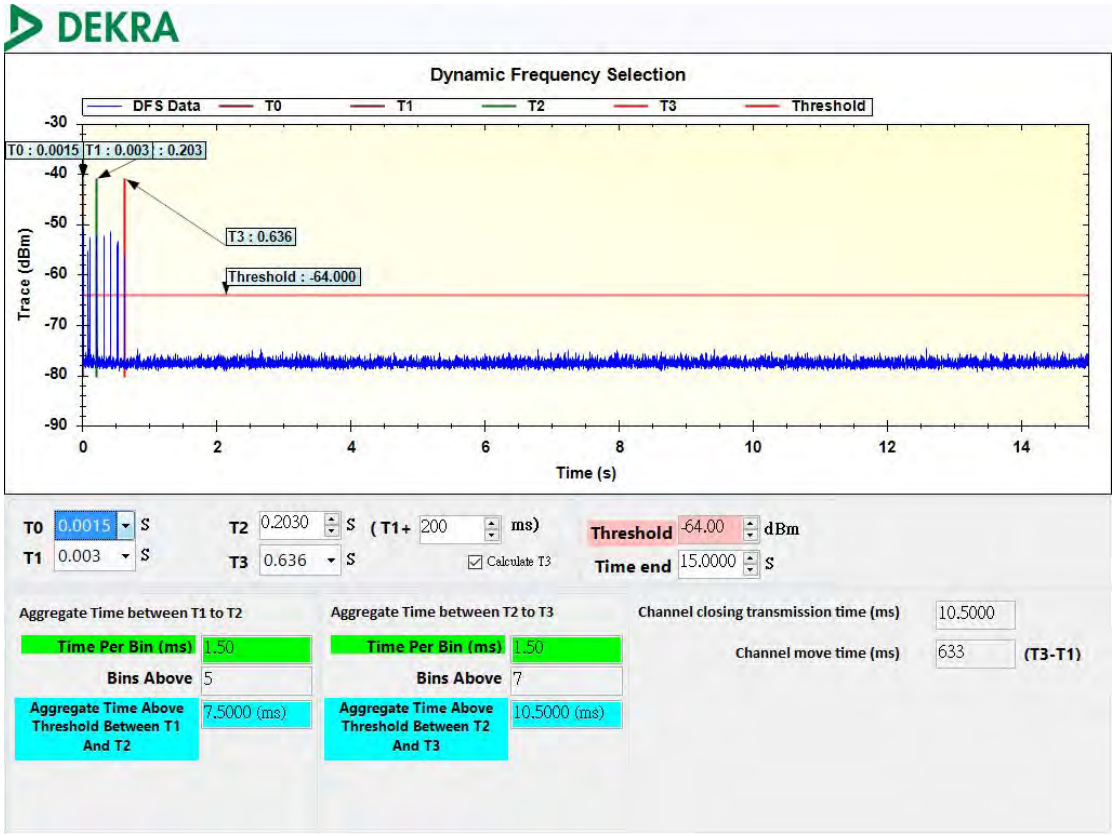
Non-Occupancy Period at IEEE 802.11ax_80M_5290MHz



Test Item	Test Result (Minutes)	Limit (Minutes)
Non-Occupancy Period	>30	>30

*No EUT transmissions were observed on the test channel during 30 minutes observation time.

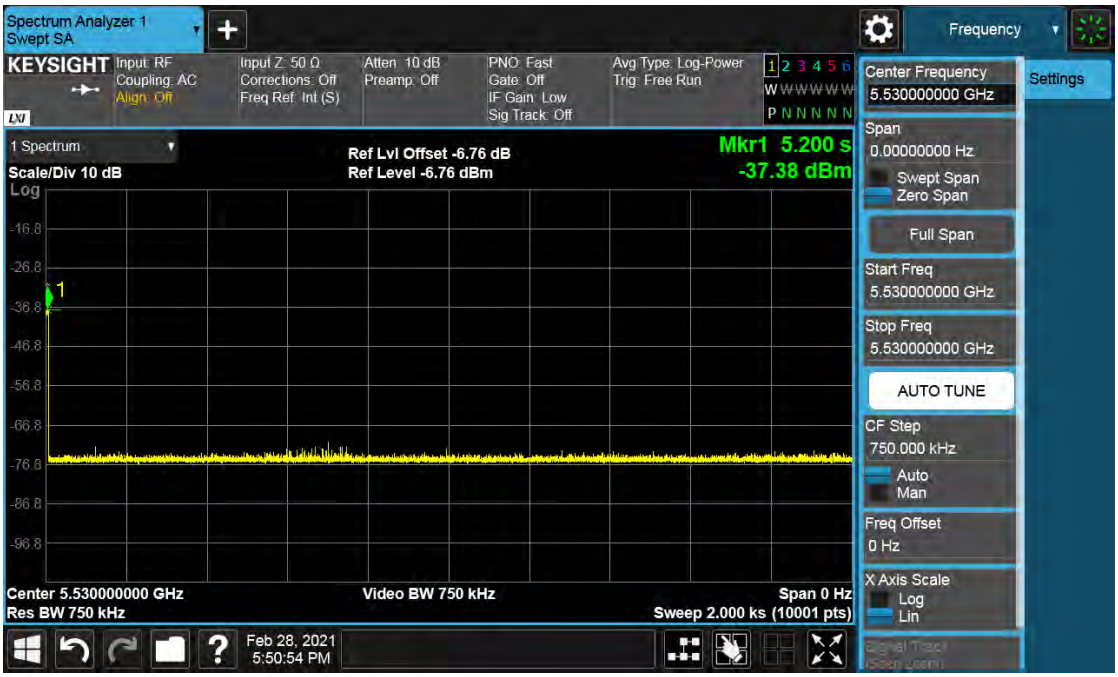
Channel Closing Transmission Time at IEEE 802.11ax_80M_5530MHz



Test Item	Test Result (Sec)	Limit (Sec)
Channel Move Time	0.633	10
Channel Closing Transmission	0.0105	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period

The results showed that after radar signal injected the channel move time was less than 10 seconds and channel transmission closing time less than 200 milliseconds and an aggregate of no more than 60 milliseconds.

Non-Occupancy Period at IEEE 802.11ax_80M_5530MHz



Test Item	Test Result (Minutes)	Limit (Minutes)
Non-Occupancy Period	>30	>30

*No EUT transmissions were observed on the test channel during 30 minutes observation time.

7. Statistical Performance Check

7.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02 for compliance to FCC 47CFR 15.407 requirements.

The steps below define the procedure to determine the minimum percentage of detection when a radar burst with a level equal to the DFS Detection Threshold + 1dB (-63dBm) is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the UUT (Master) at5300MHz 、5510MHz and 5630MHz.

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 -63dbm. 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.

7.2. Test Requirement

The minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. 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.

Minimum percentage of successful detections

Radar Type	Minimum Percentage of Successful Detection	Minimum Number of Trials
1	60%	30
2	60%	30
3	60%	30
4	60%	30
Aggregate (Radar Types 1-4)	80%	120
5	80%	30
6	70%	30

The percentage of successful detection is calculated by:

$$\frac{TotalWaveformDetections}{TotalWaveformTrials} \times 100$$ =Probability of Detection Radar Waveform

In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows:

$$\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4}$$

7.3. Test Result of Statistical Performance Check

Product	Consumer Home Router		
Test Item	Statistical Performance Check		
Test Mode	Mode 1: Transmit (IEEE 802.11ax_20M_5300MHz)		
Date of Test	2021/03/17	Test Site	SR10-H
Temperature (°C)	23.5	Humidity (%RH)	61

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 1	1	658	81	53298
1	Type 1	1	798	67	53466
2	Type 1	1	738	72	53136
3	Type 1	1	938	57	53466
4	Type 1	1	558	95	53010
5	Type 1	1	518	102	52836
6	Type 1	1	3066	18	55188
7	Type 1	1	878	61	53558
8	Type 1	1	718	74	53132
9	Type 1	1	678	78	52884
10	Type 1	1	918	58	53244
11	Type 1	1	898	59	52982
12	Type 1	1	638	83	52954
13	Type 1	1	618	86	53148
14	Type 1	1	598	89	53222
15	Type 1	1	1182	45	53190
16	Type 1	1	909	59	53631
17	Type 1	1	530	100	53000
18	Type 1	1	1946	28	54488
19	Type 1	1	2259	24	54216
20	Type 1	1	2009	27	54243
21	Type 1	1	865	62	53630
22	Type 1	1	2218	24	53232
23	Type 1	1	1480	36	53280
24	Type 1	1	2523	21	52983
25	Type 1	1	2876	19	54644
26	Type 1	1	2496	22	54912
27	Type 1	1	3046	18	54828
28	Type 1	1	2057	26	53482
29	Type 1	1	2719	20	54380

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 2	4.8	218	29	6322
1	Type 2	2.1	206	24	4944
2	Type 2	1.9	201	24	4824
3	Type 2	3.4	226	27	6102
4	Type 2	4.1	192	28	5376
5	Type 2	4.4	221	28	6188
6	Type 2	4.1	172	28	4816
7	Type 2	3.5	150	27	4050
8	Type 2	3.6	186	27	5022
9	Type 2	4.7	154	29	4466
10	Type 2	1.3	194	23	4462
11	Type 2	1	166	23	3818
12	Type 2	3.6	212	27	5724
13	Type 2	3	228	26	5928
14	Type 2	4	211	28	5908
15	Type 2	4.7	151	29	4379
16	Type 2	1.1	179	23	4117
17	Type 2	2.7	175	25	4375
18	Type 2	1.5	165	24	3960
19	Type 2	1.6	167	24	4008
20	Type 2	4.8	173	29	5017
21	Type 2	3.7	189	27	5103
22	Type 2	5	185	29	5365
23	Type 2	4.7	215	29	6235
24	Type 2	3.8	159	27	4293
25	Type 2	2.3	170	25	4250
26	Type 2	4.8	168	29	4872
27	Type 2	1.9	213	24	5112
28	Type 2	1.3	190	23	4370
29	Type 2	1.5	205	23	4715

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 3	9.8	265	18	4770
1	Type 3	7.1	240	16	3840
2	Type 3	6.9	299	16	4784
3	Type 3	8.4	262	17	4454
4	Type 3	9.1	446	18	8028
5	Type 3	9.4	223	18	4014
6	Type 3	9.1	224	18	4032
7	Type 3	8.5	493	17	8381
8	Type 3	8.6	443	17	7531
9	Type 3	9.7	403	18	7254
10	Type 3	6.3	471	16	7536
11	Type 3	6	248	16	3968
12	Type 3	8.6	454	17	7718
13	Type 3	8	227	17	3859
14	Type 3	9	448	18	8064
15	Type 3	9.7	300	18	5400
16	Type 3	6.1	400	16	6400
17	Type 3	7.7	467	17	7939
18	Type 3	6.5	222	16	3552
19	Type 3	6.6	252	16	4032
20	Type 3	9.8	412	18	7416
21	Type 3	8.7	294	18	5292
22	Type 3	10	413	18	7434
23	Type 3	9.7	386	18	6948
24	Type 3	8.8	317	18	5706
25	Type 3	7.3	472	17	8024
26	Type 3	9.8	258	18	4644
27	Type 3	6.9	250	16	4000
28	Type 3	6.3	447	16	7152
29	Type 3	6.5	314	16	5024

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 4	19.4	265	16	4240
1	Type 4	13.4	240	13	3120
2	Type 4	13.1	299	13	3887
3	Type 4	16.4	262	15	3930
4	Type 4	18	446	15	6690
5	Type 4	18.5	223	16	3568
6	Type 4	17.9	224	15	3360
7	Type 4	16.5	493	15	7395
8	Type 4	16.8	443	15	6645
9	Type 4	19.2	403	16	6448
10	Type 4	11.7	471	12	5652
11	Type 4	11.1	248	12	2976
12	Type 4	16.9	454	15	6810
13	Type 4	15.4	227	14	3178
14	Type 4	17.7	448	15	6720
15	Type 4	19.3	300	16	4800
16	Type 4	11.3	400	12	4800
17	Type 4	14.8	467	14	6538
18	Type 4	12.3	222	12	2664
19	Type 4	12.3	252	12	3024
20	Type 4	19.4	412	16	6592
21	Type 4	17	294	15	4410
22	Type 4	19.9	413	16	6608
23	Type 4	19.2	386	16	6176
24	Type 4	17.4	317	15	4755
25	Type 4	14	472	13	6136
26	Type 4	19.4	258	16	4128
27	Type 4	13.2	250	13	3250
28	Type 4	11.7	447	12	5364
29	Type 4	12.2	314	12	3768

Trinl Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	20	0.6	12	5.3
1	Type 5	11	1.0909091	12	5.3
2	Type 5	11	1.0909091	12	5.3
3	Type 5	15	0.8	12	5.3
4	Type 5	18	0.6666667	12	5.3
5	Type 5	18	0.6666667	12	5.3
6	Type 5	17	0.7058824	12	5.3
7	Type 5	15	0.8	12	5.3
8	Type 5	16	0.75	12	5.3
9	Type 5	19	0.6315789	12	5.3
10	Type 5	9	1.3333333	12	5.292
11	Type 5	8	1.5	12	5.292
12	Type 5	16	0.75	12	5.296
13	Type 5	14	0.8571429	12	5.295
14	Type 5	17	0.7058824	12	5.296
15	Type 5	19	0.6315789	12	5.298
16	Type 5	8	1.5	12	5.292
17	Type 5	13	0.9230769	12	5.294
18	Type 5	9	1.3333333	12	5.293
19	Type 5	9	1.3333333	12	5.293
20	Type 5	20	0.6	12	5.302
21	Type 5	16	0.75	12	5.304
22	Type 5	20	0.6	12	5.302
23	Type 5	19	0.6315789	12	5.302
24	Type 5	17	0.7058824	12	5.304
25	Type 5	12	1	12	5.306
26	Type 5	20	0.6	12	5.302
27	Type 5	11	1.0909091	12	5.307
28	Type 5	9	1.3333333	12	5.308
29	Type 5	9	1.3333333	12	5.307

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Pulses per Hop	Hopping Rate (KHz)	Hopping Sequence Length (ms)	Visible Frequency Number
0	Type 6	1	333.3	9	0.3333	300	4
1	Type 6	1	333.3	9	0.3333	300	5
2	Type 6	1	333.3	9	0.3333	300	5
3	Type 6	1	333.3	9	0.3333	300	3
4	Type 6	1	333.3	9	0.3333	300	1
5	Type 6	1	333.3	9	0.3333	300	4
6	Type 6	1	333.3	9	0.3333	300	3
7	Type 6	1	333.3	9	0.3333	300	6
8	Type 6	1	333.3	9	0.3333	300	7
9	Type 6	1	333.3	9	0.3333	300	3
10	Type 6	1	333.3	9	0.3333	300	6
11	Type 6	1	333.3	9	0.3333	300	3
12	Type 6	1	333.3	9	0.3333	300	4
13	Type 6	1	333.3	9	0.3333	300	2
14	Type 6	1	333.3	9	0.3333	300	3
15	Type 6	1	333.3	9	0.3333	300	5
16	Type 6	1	333.3	9	0.3333	300	5
17	Type 6	1	333.3	9	0.3333	300	5
18	Type 6	1	333.3	9	0.3333	300	4
19	Type 6	1	333.3	9	0.3333	300	5
20	Type 6	1	333.3	9	0.3333	300	3
21	Type 6	1	333.3	9	0.3333	300	6
22	Type 6	1	333.3	9	0.3333	300	2
23	Type 6	1	333.3	9	0.3333	300	4
24	Type 6	1	333.3	9	0.3333	300	5
25	Type 6	1	333.3	9	0.3333	300	2
26	Type 6	1	333.3	9	0.3333	300	5
27	Type 6	1	333.3	9	0.3333	300	7
28	Type 6	1	333.3	9	0.3333	300	5
29	Type 6	1	333.3	9	0.3333	300	2

Product	Consumer Home Router		
Test Item	Statistical Performance Check		
Test Mode	Mode 1: Transmit (IEEE 802.11ax_20M_5500MHz)		
Date of Test	2021/03/17	Test Site	SR10-H
Temperature (°C)	23.5	Humidity (%RH)	61

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 1	1	658	81	53298
1	Type 1	1	798	67	53466
2	Type 1	1	738	72	53136
3	Type 1	1	938	57	53466
4	Type 1	1	558	95	53010
5	Type 1	1	518	102	52836
6	Type 1	1	3066	18	55188
7	Type 1	1	878	61	53558
8	Type 1	1	718	74	53132
9	Type 1	1	678	78	52884
10	Type 1	1	918	58	53244
11	Type 1	1	898	59	52982
12	Type 1	1	638	83	52954
13	Type 1	1	618	86	53148
14	Type 1	1	598	89	53222
15	Type 1	1	1182	45	53190
16	Type 1	1	909	59	53631
17	Type 1	1	530	100	53000
18	Type 1	1	1946	28	54488
19	Type 1	1	2259	24	54216
20	Type 1	1	2009	27	54243
21	Type 1	1	865	62	53630
22	Type 1	1	2218	24	53232
23	Type 1	1	1480	36	53280
24	Type 1	1	2523	21	52983
25	Type 1	1	2876	19	54644
26	Type 1	1	2496	22	54912
27	Type 1	1	3046	18	54828
28	Type 1	1	2057	26	53482
29	Type 1	1	2719	20	54380

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 2	4.8	218	29	6322
1	Type 2	2.1	206	24	4944
2	Type 2	1.9	201	24	4824
3	Type 2	3.4	226	27	6102
4	Type 2	4.1	192	28	5376
5	Type 2	4.4	221	28	6188
6	Type 2	4.1	172	28	4816
7	Type 2	3.5	150	27	4050
8	Type 2	3.6	186	27	5022
9	Type 2	4.7	154	29	4466
10	Type 2	1.3	194	23	4462
11	Type 2	1	166	23	3818
12	Type 2	3.6	212	27	5724
13	Type 2	3	228	26	5928
14	Type 2	4	211	28	5908
15	Type 2	4.7	151	29	4379
16	Type 2	1.1	179	23	4117
17	Type 2	2.7	175	25	4375
18	Type 2	1.5	165	24	3960
19	Type 2	1.6	167	24	4008
20	Type 2	4.8	173	29	5017
21	Type 2	3.7	189	27	5103
22	Type 2	5	185	29	5365
23	Type 2	4.7	215	29	6235
24	Type 2	3.8	159	27	4293
25	Type 2	2.3	170	25	4250
26	Type 2	4.8	168	29	4872
27	Type 2	1.9	213	24	5112
28	Type 2	1.3	190	23	4370
29	Type 2	1.5	205	23	4715

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 3	9.8	265	18	4770
1	Type 3	7.1	240	16	3840
2	Type 3	6.9	299	16	4784
3	Type 3	8.4	262	17	4454
4	Type 3	9.1	446	18	8028
5	Type 3	9.4	223	18	4014
6	Type 3	9.1	224	18	4032
7	Type 3	8.5	493	17	8381
8	Type 3	8.6	443	17	7531
9	Type 3	9.7	403	18	7254
10	Type 3	6.3	471	16	7536
11	Type 3	6	248	16	3968
12	Type 3	8.6	454	17	7718
13	Type 3	8	227	17	3859
14	Type 3	9	448	18	8064
15	Type 3	9.7	300	18	5400
16	Type 3	6.1	400	16	6400
17	Type 3	7.7	467	17	7939
18	Type 3	6.5	222	16	3552
19	Type 3	6.6	252	16	4032
20	Type 3	9.8	412	18	7416
21	Type 3	8.7	294	18	5292
22	Type 3	10	413	18	7434
23	Type 3	9.7	386	18	6948
24	Type 3	8.8	317	18	5706
25	Type 3	7.3	472	17	8024
26	Type 3	9.8	258	18	4644
27	Type 3	6.9	250	16	4000
28	Type 3	6.3	447	16	7152
29	Type 3	6.5	314	16	5024

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 4	19.4	265	16	4240
1	Type 4	13.4	240	13	3120
2	Type 4	13.1	299	13	3887
3	Type 4	16.4	262	15	3930
4	Type 4	18	446	15	6690
5	Type 4	18.5	223	16	3568
6	Type 4	17.9	224	15	3360
7	Type 4	16.5	493	15	7395
8	Type 4	16.8	443	15	6645
9	Type 4	19.2	403	16	6448
10	Type 4	11.7	471	12	5652
11	Type 4	11.1	248	12	2976
12	Type 4	16.9	454	15	6810
13	Type 4	15.4	227	14	3178
14	Type 4	17.7	448	15	6720
15	Type 4	19.3	300	16	4800
16	Type 4	11.3	400	12	4800
17	Type 4	14.8	467	14	6538
18	Type 4	12.3	222	12	2664
19	Type 4	12.3	252	12	3024
20	Type 4	19.4	412	16	6592
21	Type 4	17	294	15	4410
22	Type 4	19.9	413	16	6608
23	Type 4	19.2	386	16	6176
24	Type 4	17.4	317	15	4755
25	Type 4	14	472	13	6136
26	Type 4	19.4	258	16	4128
27	Type 4	13.2	250	13	3250
28	Type 4	11.7	447	12	5364
29	Type 4	12.2	314	12	3768

Trinl Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	20	0.6	12	5.5
1	Type 5	11	1.0909091	12	5.5
2	Type 5	11	1.0909091	12	5.5
3	Type 5	15	0.8	12	5.5
4	Type 5	18	0.6666667	12	5.5
5	Type 5	18	0.6666667	12	5.5
6	Type 5	17	0.7058824	12	5.5
7	Type 5	15	0.8	12	5.5
8	Type 5	16	0.75	12	5.5
9	Type 5	19	0.6315789	12	5.5
10	Type 5	9	1.3333333	12	5.492
11	Type 5	8	1.5	12	5.492
12	Type 5	16	0.75	12	5.496
13	Type 5	14	0.8571429	12	5.495
14	Type 5	17	0.7058824	12	5.496
15	Type 5	19	0.6315789	12	5.498
16	Type 5	8	1.5	12	5.492
17	Type 5	13	0.9230769	12	5.494
18	Type 5	9	1.3333333	12	5.493
19	Type 5	9	1.3333333	12	5.493
20	Type 5	20	0.6	12	5.502
21	Type 5	16	0.75	12	5.504
22	Type 5	20	0.6	12	5.502
23	Type 5	19	0.6315789	12	5.502
24	Type 5	17	0.7058824	12	5.504
25	Type 5	12	1	12	5.506
26	Type 5	20	0.6	12	5.502
27	Type 5	11	1.0909091	12	5.507
28	Type 5	9	1.3333333	12	5.508
29	Type 5	9	1.3333333	12	5.507

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Pulses per Hop	Hopping Rate (KHz)	Hopping Sequence Length (ms)	Visible Frequency Number
0	Type 6	1	333.3	9	0.3333	300	3
1	Type 6	1	333.3	9	0.3333	300	5
2	Type 6	1	333.3	9	0.3333	300	1
3	Type 6	1	333.3	9	0.3333	300	5
4	Type 6	1	333.3	9	0.3333	300	1
5	Type 6	1	333.3	9	0.3333	300	6
6	Type 6	1	333.3	9	0.3333	300	3
7	Type 6	1	333.3	9	0.3333	300	2
8	Type 6	1	333.3	9	0.3333	300	3
9	Type 6	1	333.3	9	0.3333	300	6
10	Type 6	1	333.3	9	0.3333	300	2
11	Type 6	1	333.3	9	0.3333	300	7
12	Type 6	1	333.3	9	0.3333	300	7
13	Type 6	1	333.3	9	0.3333	300	8
14	Type 6	1	333.3	9	0.3333	300	7
15	Type 6	1	333.3	9	0.3333	300	4
16	Type 6	1	333.3	9	0.3333	300	5
17	Type 6	1	333.3	9	0.3333	300	7
18	Type 6	1	333.3	9	0.3333	300	5
19	Type 6	1	333.3	9	0.3333	300	7
20	Type 6	1	333.3	9	0.3333	300	4
21	Type 6	1	333.3	9	0.3333	300	3
22	Type 6	1	333.3	9	0.3333	300	7
23	Type 6	1	333.3	9	0.3333	300	2
24	Type 6	1	333.3	9	0.3333	300	3
25	Type 6	1	333.3	9	0.3333	300	3
26	Type 6	1	333.3	9	0.3333	300	5
27	Type 6	1	333.3	9	0.3333	300	3
28	Type 6	1	333.3	9	0.3333	300	3
29	Type 6	1	333.3	9	0.3333	300	2

Product	Consumer Home Router		
Test Item	Statistical Performance Check		
Test Mode	Mode 1: Transmit (IEEE 802.11ax_80M_5290MHz)		
Date of Test	2021/03/17	Test Site	SR10-H
Temperature (°C)	23.5	Humidity (%RH)	61

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 1	1	658	81	53298
1	Type 1	1	798	67	53466
2	Type 1	1	738	72	53136
3	Type 1	1	938	57	53466
4	Type 1	1	558	95	53010
5	Type 1	1	518	102	52836
6	Type 1	1	3066	18	55188
7	Type 1	1	878	61	53558
8	Type 1	1	718	74	53132
9	Type 1	1	678	78	52884
10	Type 1	1	918	58	53244
11	Type 1	1	898	59	52982
12	Type 1	1	638	83	52954
13	Type 1	1	618	86	53148
14	Type 1	1	598	89	53222
15	Type 1	1	1182	45	53190
16	Type 1	1	909	59	53631
17	Type 1	1	530	100	53000
18	Type 1	1	1946	28	54488
19	Type 1	1	2259	24	54216
20	Type 1	1	2009	27	54243
21	Type 1	1	865	62	53630
22	Type 1	1	2218	24	53232
23	Type 1	1	1480	36	53280
24	Type 1	1	2523	21	52983
25	Type 1	1	2876	19	54644
26	Type 1	1	2496	22	54912
27	Type 1	1	3046	18	54828
28	Type 1	1	2057	26	53482
29	Type 1	1	2719	20	54380

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 2	4.8	218	29	6322
1	Type 2	2.1	206	24	4944
2	Type 2	1.9	201	24	4824
3	Type 2	3.4	226	27	6102
4	Type 2	4.1	192	28	5376
5	Type 2	4.4	221	28	6188
6	Type 2	4.1	172	28	4816
7	Type 2	3.5	150	27	4050
8	Type 2	3.6	186	27	5022
9	Type 2	4.7	154	29	4466
10	Type 2	1.3	194	23	4462
11	Type 2	1	166	23	3818
12	Type 2	3.6	212	27	5724
13	Type 2	3	228	26	5928
14	Type 2	4	211	28	5908
15	Type 2	4.7	151	29	4379
16	Type 2	1.1	179	23	4117
17	Type 2	2.7	175	25	4375
18	Type 2	1.5	165	24	3960
19	Type 2	1.6	167	24	4008
20	Type 2	4.8	173	29	5017
21	Type 2	3.7	189	27	5103
22	Type 2	5	185	29	5365
23	Type 2	4.7	215	29	6235
24	Type 2	3.8	159	27	4293
25	Type 2	2.3	170	25	4250
26	Type 2	4.8	168	29	4872
27	Type 2	1.9	213	24	5112
28	Type 2	1.3	190	23	4370
29	Type 2	1.5	205	23	4715

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 3	9.8	265	18	4770
1	Type 3	7.1	240	16	3840
2	Type 3	6.9	299	16	4784
3	Type 3	8.4	262	17	4454
4	Type 3	9.1	446	18	8028
5	Type 3	9.4	223	18	4014
6	Type 3	9.1	224	18	4032
7	Type 3	8.5	493	17	8381
8	Type 3	8.6	443	17	7531
9	Type 3	9.7	403	18	7254
10	Type 3	6.3	471	16	7536
11	Type 3	6	248	16	3968
12	Type 3	8.6	454	17	7718
13	Type 3	8	227	17	3859
14	Type 3	9	448	18	8064
15	Type 3	9.7	300	18	5400
16	Type 3	6.1	400	16	6400
17	Type 3	7.7	467	17	7939
18	Type 3	6.5	222	16	3552
19	Type 3	6.6	252	16	4032
20	Type 3	9.8	412	18	7416
21	Type 3	8.7	294	18	5292
22	Type 3	10	413	18	7434
23	Type 3	9.7	386	18	6948
24	Type 3	8.8	317	18	5706
25	Type 3	7.3	472	17	8024
26	Type 3	9.8	258	18	4644
27	Type 3	6.9	250	16	4000
28	Type 3	6.3	447	16	7152
29	Type 3	6.5	314	16	5024

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 4	19.4	265	16	4240
1	Type 4	13.4	240	13	3120
2	Type 4	13.1	299	13	3887
3	Type 4	16.4	262	15	3930
4	Type 4	18	446	15	6690
5	Type 4	18.5	223	16	3568
6	Type 4	17.9	224	15	3360
7	Type 4	16.5	493	15	7395
8	Type 4	16.8	443	15	6645
9	Type 4	19.2	403	16	6448
10	Type 4	11.7	471	12	5652
11	Type 4	11.1	248	12	2976
12	Type 4	16.9	454	15	6810
13	Type 4	15.4	227	14	3178
14	Type 4	17.7	448	15	6720
15	Type 4	19.3	300	16	4800
16	Type 4	11.3	400	12	4800
17	Type 4	14.8	467	14	6538
18	Type 4	12.3	222	12	2664
19	Type 4	12.3	252	12	3024
20	Type 4	19.4	412	16	6592
21	Type 4	17	294	15	4410
22	Type 4	19.9	413	16	6608
23	Type 4	19.2	386	16	6176
24	Type 4	17.4	317	15	4755
25	Type 4	14	472	13	6136
26	Type 4	19.4	258	16	4128
27	Type 4	13.2	250	13	3250
28	Type 4	11.7	447	12	5364
29	Type 4	12.2	314	12	3768

Trinl Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	20	0.6	12	5.29
1	Type 5	11	1.0909091	12	5.29
2	Type 5	11	1.0909091	12	5.29
3	Type 5	15	0.8	12	5.29
4	Type 5	18	0.6666667	12	5.29
5	Type 5	18	0.6666667	12	5.29
6	Type 5	17	0.7058824	12	5.29
7	Type 5	15	0.8	12	5.29
8	Type 5	16	0.75	12	5.29
9	Type 5	19	0.6315789	12	5.29
10	Type 5	9	1.3333333	12	5.254
11	Type 5	8	1.5	12	5.254
12	Type 5	16	0.75	12	5.258
13	Type 5	14	0.8571429	12	5.256
14	Type 5	17	0.7058824	12	5.258
15	Type 5	19	0.6315789	12	5.259
16	Type 5	8	1.5	12	5.254
17	Type 5	13	0.9230769	12	5.256
18	Type 5	9	1.3333333	12	5.254
19	Type 5	9	1.3333333	12	5.254
20	Type 5	20	0.6	12	5.321
21	Type 5	16	0.75	12	5.322
22	Type 5	20	0.6	12	5.32
23	Type 5	19	0.6315789	12	5.321
24	Type 5	17	0.7058824	12	5.322
25	Type 5	12	1	12	5.324
26	Type 5	20	0.6	12	5.321
27	Type 5	11	1.0909091	12	5.325
28	Type 5	9	1.3333333	12	5.326
29	Type 5	9	1.3333333	12	5.326

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Pulses per Hop	Hopping Rate (KHz)	Hopping Sequence Length (ms)	Visible Frequency Number
0	Type 6	1	333.3	9	0.3333	300	15
1	Type 6	1	333.3	9	0.3333	300	20
2	Type 6	1	333.3	9	0.3333	300	23
3	Type 6	1	333.3	9	0.3333	300	15
4	Type 6	1	333.3	9	0.3333	300	14
5	Type 6	1	333.3	9	0.3333	300	14
6	Type 6	1	333.3	9	0.3333	300	16
7	Type 6	1	333.3	9	0.3333	300	16
8	Type 6	1	333.3	9	0.3333	300	14
9	Type 6	1	333.3	9	0.3333	300	20
10	Type 6	1	333.3	9	0.3333	300	13
11	Type 6	1	333.3	9	0.3333	300	10
12	Type 6	1	333.3	9	0.3333	300	13
13	Type 6	1	333.3	9	0.3333	300	13
14	Type 6	1	333.3	9	0.3333	300	14
15	Type 6	1	333.3	9	0.3333	300	15
16	Type 6	1	333.3	9	0.3333	300	22
17	Type 6	1	333.3	9	0.3333	300	15
18	Type 6	1	333.3	9	0.3333	300	15
19	Type 6	1	333.3	9	0.3333	300	15
20	Type 6	1	333.3	9	0.3333	300	18
21	Type 6	1	333.3	9	0.3333	300	16
22	Type 6	1	333.3	9	0.3333	300	10
23	Type 6	1	333.3	9	0.3333	300	10
24	Type 6	1	333.3	9	0.3333	300	19
25	Type 6	1	333.3	9	0.3333	300	13
26	Type 6	1	333.3	9	0.3333	300	24
27	Type 6	1	333.3	9	0.3333	300	17
28	Type 6	1	333.3	9	0.3333	300	18
29	Type 6	1	333.3	9	0.3333	300	12

Product	Consumer Home Router		
Test Item	Statistical Performance Check		
Test Mode	Mode 1: Transmit (IEEE 802.11ax_80M_5530MHz)		
Date of Test	2021/03/17	Test Site	SR10-H
Temperature (°C)	23.5	Humidity (%RH)	61

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 1	1	658	81	53298
1	Type 1	1	798	67	53466
2	Type 1	1	738	72	53136
3	Type 1	1	938	57	53466
4	Type 1	1	558	95	53010
5	Type 1	1	518	102	52836
6	Type 1	1	3066	18	55188
7	Type 1	1	878	61	53558
8	Type 1	1	718	74	53132
9	Type 1	1	678	78	52884
10	Type 1	1	918	58	53244
11	Type 1	1	898	59	52982
12	Type 1	1	638	83	52954
13	Type 1	1	618	86	53148
14	Type 1	1	598	89	53222
15	Type 1	1	1182	45	53190
16	Type 1	1	909	59	53631
17	Type 1	1	530	100	53000
18	Type 1	1	1946	28	54488
19	Type 1	1	2259	24	54216
20	Type 1	1	2009	27	54243
21	Type 1	1	865	62	53630
22	Type 1	1	2218	24	53232
23	Type 1	1	1480	36	53280
24	Type 1	1	2523	21	52983
25	Type 1	1	2876	19	54644
26	Type 1	1	2496	22	54912
27	Type 1	1	3046	18	54828
28	Type 1	1	2057	26	53482
29	Type 1	1	2719	20	54380

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 2	4.8	218	29	6322
1	Type 2	2.1	206	24	4944
2	Type 2	1.9	201	24	4824
3	Type 2	3.4	226	27	6102
4	Type 2	4.1	192	28	5376
5	Type 2	4.4	221	28	6188
6	Type 2	4.1	172	28	4816
7	Type 2	3.5	150	27	4050
8	Type 2	3.6	186	27	5022
9	Type 2	4.7	154	29	4466
10	Type 2	1.3	194	23	4462
11	Type 2	1	166	23	3818
12	Type 2	3.6	212	27	5724
13	Type 2	3	228	26	5928
14	Type 2	4	211	28	5908
15	Type 2	4.7	151	29	4379
16	Type 2	1.1	179	23	4117
17	Type 2	2.7	175	25	4375
18	Type 2	1.5	165	24	3960
19	Type 2	1.6	167	24	4008
20	Type 2	4.8	173	29	5017
21	Type 2	3.7	189	27	5103
22	Type 2	5	185	29	5365
23	Type 2	4.7	215	29	6235
24	Type 2	3.8	159	27	4293
25	Type 2	2.3	170	25	4250
26	Type 2	4.8	168	29	4872
27	Type 2	1.9	213	24	5112
28	Type 2	1.3	190	23	4370
29	Type 2	1.5	205	23	4715

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 3	9.8	265	18	4770
1	Type 3	7.1	240	16	3840
2	Type 3	6.9	299	16	4784
3	Type 3	8.4	262	17	4454
4	Type 3	9.1	446	18	8028
5	Type 3	9.4	223	18	4014
6	Type 3	9.1	224	18	4032
7	Type 3	8.5	493	17	8381
8	Type 3	8.6	443	17	7531
9	Type 3	9.7	403	18	7254
10	Type 3	6.3	471	16	7536
11	Type 3	6	248	16	3968
12	Type 3	8.6	454	17	7718
13	Type 3	8	227	17	3859
14	Type 3	9	448	18	8064
15	Type 3	9.7	300	18	5400
16	Type 3	6.1	400	16	6400
17	Type 3	7.7	467	17	7939
18	Type 3	6.5	222	16	3552
19	Type 3	6.6	252	16	4032
20	Type 3	9.8	412	18	7416
21	Type 3	8.7	294	18	5292
22	Type 3	10	413	18	7434
23	Type 3	9.7	386	18	6948
24	Type 3	8.8	317	18	5706
25	Type 3	7.3	472	17	8024
26	Type 3	9.8	258	18	4644
27	Type 3	6.9	250	16	4000
28	Type 3	6.3	447	16	7152
29	Type 3	6.5	314	16	5024

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Number of Pulses	Waveform Length(us)
0	Type 4	19.4	265	16	4240
1	Type 4	13.4	240	13	3120
2	Type 4	13.1	299	13	3887
3	Type 4	16.4	262	15	3930
4	Type 4	18	446	15	6690
5	Type 4	18.5	223	16	3568
6	Type 4	17.9	224	15	3360
7	Type 4	16.5	493	15	7395
8	Type 4	16.8	443	15	6645
9	Type 4	19.2	403	16	6448
10	Type 4	11.7	471	12	5652
11	Type 4	11.1	248	12	2976
12	Type 4	16.9	454	15	6810
13	Type 4	15.4	227	14	3178
14	Type 4	17.7	448	15	6720
15	Type 4	19.3	300	16	4800
16	Type 4	11.3	400	12	4800
17	Type 4	14.8	467	14	6538
18	Type 4	12.3	222	12	2664
19	Type 4	12.3	252	12	3024
20	Type 4	19.4	412	16	6592
21	Type 4	17	294	15	4410
22	Type 4	19.9	413	16	6608
23	Type 4	19.2	386	16	6176
24	Type 4	17.4	317	15	4755
25	Type 4	14	472	13	6136
26	Type 4	19.4	258	16	4128
27	Type 4	13.2	250	13	3250
28	Type 4	11.7	447	12	5364
29	Type 4	12.2	314	12	3768

Trinl Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	20	0.6	12	5.53
1	Type 5	11	1.0909091	12	5.53
2	Type 5	11	1.0909091	12	5.53
3	Type 5	15	0.8	12	5.53
4	Type 5	18	0.6666667	12	5.53
5	Type 5	18	0.6666667	12	5.53
6	Type 5	17	0.7058824	12	5.53
7	Type 5	15	0.8	12	5.53
8	Type 5	16	0.75	12	5.53
9	Type 5	19	0.6315789	12	5.53
10	Type 5	9	1.3333333	12	5.494
11	Type 5	8	1.5	12	5.494
12	Type 5	16	0.75	12	5.498
13	Type 5	14	0.8571429	12	5.496
14	Type 5	17	0.7058824	12	5.498
15	Type 5	19	0.6315789	12	5.499
16	Type 5	8	1.5	12	5.494
17	Type 5	13	0.9230769	12	5.496
18	Type 5	9	1.3333333	12	5.494
19	Type 5	9	1.3333333	12	5.494
20	Type 5	20	0.6	12	5.561
21	Type 5	16	0.75	12	5.562
22	Type 5	20	0.6	12	5.56
23	Type 5	19	0.6315789	12	5.561
24	Type 5	17	0.7058824	12	5.562
25	Type 5	12	1	12	5.564
26	Type 5	20	0.6	12	5.561
27	Type 5	11	1.0909091	12	5.565
28	Type 5	9	1.3333333	12	5.566
29	Type 5	9	1.3333333	12	5.566

Trinl Id	Radar Type	Pulse Width (us)	PRI(us)	Pulses per Hop	Hopping Rate (KHz)	Hopping Sequence Length (ms)	Visible Frequency Number
0	Type 6	1	333.3	9	0.3333	300	11
1	Type 6	1	333.3	9	0.3333	300	16
2	Type 6	1	333.3	9	0.3333	300	12
3	Type 6	1	333.3	9	0.3333	300	18
4	Type 6	1	333.3	9	0.3333	300	19
5	Type 6	1	333.3	9	0.3333	300	21
6	Type 6	1	333.3	9	0.3333	300	18
7	Type 6	1	333.3	9	0.3333	300	19
8	Type 6	1	333.3	9	0.3333	300	16
9	Type 6	1	333.3	9	0.3333	300	20
10	Type 6	1	333.3	9	0.3333	300	15
11	Type 6	1	333.3	9	0.3333	300	19
12	Type 6	1	333.3	9	0.3333	300	27
13	Type 6	1	333.3	9	0.3333	300	22
14	Type 6	1	333.3	9	0.3333	300	14
15	Type 6	1	333.3	9	0.3333	300	17
16	Type 6	1	333.3	9	0.3333	300	14
17	Type 6	1	333.3	9	0.3333	300	21
18	Type 6	1	333.3	9	0.3333	300	22
19	Type 6	1	333.3	9	0.3333	300	12
20	Type 6	1	333.3	9	0.3333	300	18
21	Type 6	1	333.3	9	0.3333	300	15
22	Type 6	1	333.3	9	0.3333	300	21
23	Type 6	1	333.3	9	0.3333	300	16
24	Type 6	1	333.3	9	0.3333	300	19
25	Type 6	1	333.3	9	0.3333	300	20
26	Type 6	1	333.3	9	0.3333	300	16
27	Type 6	1	333.3	9	0.3333	300	14
28	Type 6	1	333.3	9	0.3333	300	17
29	Type 6	1	333.3	9	0.3333	300	9