Testing Laboratory
3024

Test Report No:
23A0721R-RFUSDFSV02-A

TEST REPORT (Dynamic Frequency Selection)
FCC Rules&Regulations

Product Name	DOCSIS Gateway
Brand Name	ARRIS
Model No.	G20
FCC ID	UIDG20
Applicant´s Name / Address	ARRIS 3871 Lakefield Drive Suite 300 SUWANEE Georgia United States 30024
Manufacturer's Name / Address	ARRIS 3871 Lakefield Drive Suite 300 SUWANEE Georgia United States 30024
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407 ANSI C63.10-2013
Verdict Summary	IN COMPLIANCE
Documented By	Hailey Peng Hailey Peng
Approved By	Rueyyan Lin Rueyyan Lin
Date of Receipt	Oct. 27, 2023
Date of Issue	Dec. 18, 2023
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Dec. 18, 2023

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
5	DFS: UNII Detection Bandwidth Measurement	PASS	-
6	DFS: Initial Channel Availability Check Time	PASS	-
7	DFS: Radar Burst at the Beginning of the Channel Availability Check Time	PASS	-
8	DFS: Radar Burst at the End of the Channel Availability Check Time	PASS	-
9	DFS: In-Service Monitoring for Channel Move Time (CMT)	PASS	-
9	DFS: In-Service Monitoring for Channel Closing Transmission Time (CCTT)	PASS	-
9	DFS: In-Service Monitoring for Non-Occupancy Period (NOP)	PASS	-
10	DFS: Statistical Performance Check	PASS	-
2.7	User Access Restrictions	N/A	Manufacturer attestation NOT accessible to user

Comments and Explanations
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1. General Information

1.1. EUT Description

DFS Frequency Range		5250 ~ 5350 MHz 5470 ~ 5725 MHz	
DFS Operating Frequency / Number of DFS Channels		IEEE 802.11a IEEE 802.11n/ac/ax (20 MHz)	5260 ~ 5320 MHz / 4 Channels 5500 ~ 5720 MHz / 12 Channels
		IEEE 802.11n/ac/ax (40 MHz)	5270 ~ 5310 MHz / 2 Channels 5510 ~ 5710 MHz / 6 Channels
		IEEE 802.11ac/ax (80 MHz)	5290 MHz / 1 Channel 5530 ~ 5690 MHz / 3 Channels
		IEEE 802.11ac/ax (160 MHz)	5250 MHz / 1 Channel 5570 MHz / 1 Channel
Type of Modulation		IEEE 802.11a/n	OFDM-BPSK, QPSK, 16QAM, 64QAM
		IEEE 802.11ac	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
		IEEE 802.11ax	OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Channel Control		Auto	
Channel Bandwidth		20/40/80/160 MHz	
Chip	Manufacturer	MaxLinear	
	Model No.	WAV654A1MC	

Accessories Information				
No.	Equipment Name	Brand Name	Model No.	Rating
1	Adapter 1	FRECOM	F24L15-120200SPAU	INPUT: 100-240V, 50/60Hz, 0.6A OUTPUT: 12.0V, 2.0A, 24.0W
2	Adapter 2	MOSO®	MS-V2000R120-024Q0-US	INPUT: 100-240V, 50/60Hz, 0.7A max. OUTPUT: 12.0V, 2.0A

Antenna Information				
Ant.	Brand Name	Model No.	Type	Antenna Gain (dBi)
1	Wanshih	S21WFI0072A	PIFA	2.45
2	Wanshih	S21WFI0073A	PIFA	3.13

For IEEE 802.11a/n/ac/ax Mode: (2TX, 2RX)

Both Ant. 1 and Ant. 2 can be used as transmitting/receiving antennas, and they can transmit/receive signal simultaneously.

1.2. EUT Information

EUT Power Type	From Adapter			
Operating Mode	☒	Master		
	☐	Client with radar detection		
	☐	Client without radar detection		
Communication Mode	☒	IP Based (Load Based)	☐	Frame Based
TPC Function	☒	With TPC Function	☐	Without TPC Function
Weather Band (5600 ~ 5650 MHz)	☒	With 5600 ~ 5650 MHz	☐	Without 5600 ~ 5650 MHz
Beamforming Function	☒	With beamforming	☐	Without beamforming

1.3. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

1.4. Testing Location Information

Testing Location Information		
Test Laboratory：DEKRA Testing and Certification Co., Ltd.		
	1 (TAF: 3024)	ADD: 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
	2 (TAF: 3024)	ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. TEL: +886-3-582-8001 FAX: +886-3-582-8958
Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.		

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
DFS	HC-SR10	Neil Yeh Igor Tseng	22.8~24.6 / 56~59	2023/11/15~2023/11/21

1.5. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

Test item	Uncertainty
DFS	± 0.74 dB

1.6. List of Test Equipment

HC-SR10

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal. Date	Next Cal. Date
Spectrum Analyzer	Keysight	N9030B	MY57140404	3 Hz-26.5 GHz	2023/04/24	2024/04/23
EXA Signal Analyzer	Keysight	N9010A	MY51440132	10 Hz-44 GHz	2022/12/13	2023/12/12
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	0.3-40 GHz	2023/10/25	2024/10/24

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

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	AC 120V/60Hz

2.2. Test Channel Frequencies Configuration

IEEE Std.	Test Channel Frequency
802.11ax (20 MHz)	5500 MHz
802.11ax (40 MHz)	5510 MHz
802.11ax (80 MHz)	5530 MHz
802.11ax (160 MHz)	5570 MHz

2.3. The Worst Case Measurement Configuration

Tests Item	Dynamic Frequency Selection (DFS)
Test Condition	The EUT shall be configured to operate at the highest transmitter output power setting. If more than one antenna assembly is intended for this power setting, the gain of the antenna assembly with the lowest gain shall be used.

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

2.4. Tested System Details

Instrument	Manufacturer	Type No.	Serial No	FCC ID
Laptop PC	DELL	Vostro A860	CD8BMH1	--
Laptop PC	ASUS	K45VD	0343G3110M	--
Wireless Router (Client)	ASUS	PCE-AX58BT	N/A	PD9AX200NG
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
Magic iPerf_V1.0	NextDoorDeveloper	iPerf Tool
Device Firmware Version	CBN	FA01.01.006_092523_G2X.00.07.733.DAG

2.5. 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 30 dBm. 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.

2.6. UNII Device Description

(1) The EUT operates in the following DFS band:

1. 5250 ~ 5350 MHz
2. 5470 ~ 5725 MHz

(2) Below are the available 50 ohm antenna assemblies and their corresponding gains. 3.13 dBi gain was used to set the -60.87 dBm threshold level 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%.

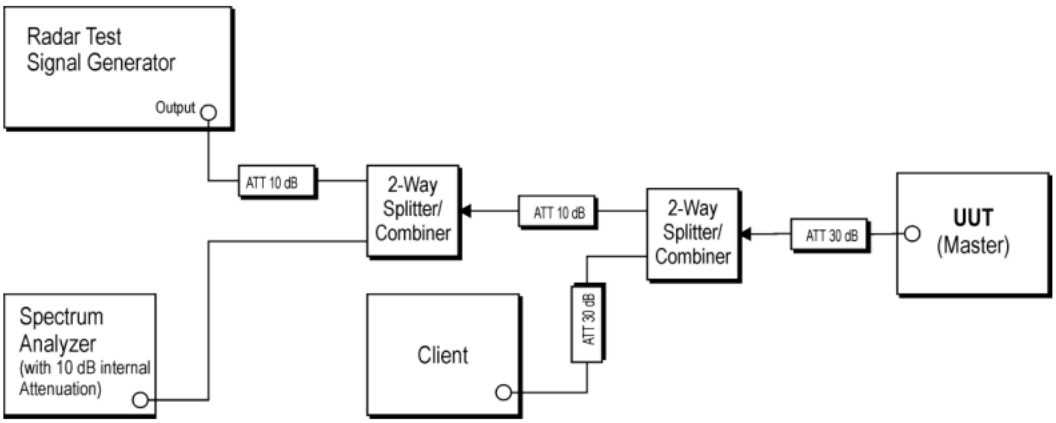
(4) For the 5250 ~ 5350 MHz and 5470 ~ 5725 MHz bands, the Master device provides, on aggregate, uniform loading of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.

2.7. User Access Restrictions

DFS controls (hardware or software) related to radar detection are NOT accessible to the user. Manufacturer statement confirming that information regarding the parameters of the detected Radar Waveforms is not available to the end user.

3. General DFS Information

3.1. Test Setup



3.2. 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 Note 1 and Note 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.

4. 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 Test B:15 unique PRI values randomly selected within the range of 518-3066μsec, with a minimum increment of 1μsec, excluding PRI values selected in Test A	$Roundup = \left\{ \left(\frac{1}{360}\right) \cdot \left(\frac{19.10^6}{\mathrm{PRI}_{\mu sec}}\right) \right\}$	60%	30
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.

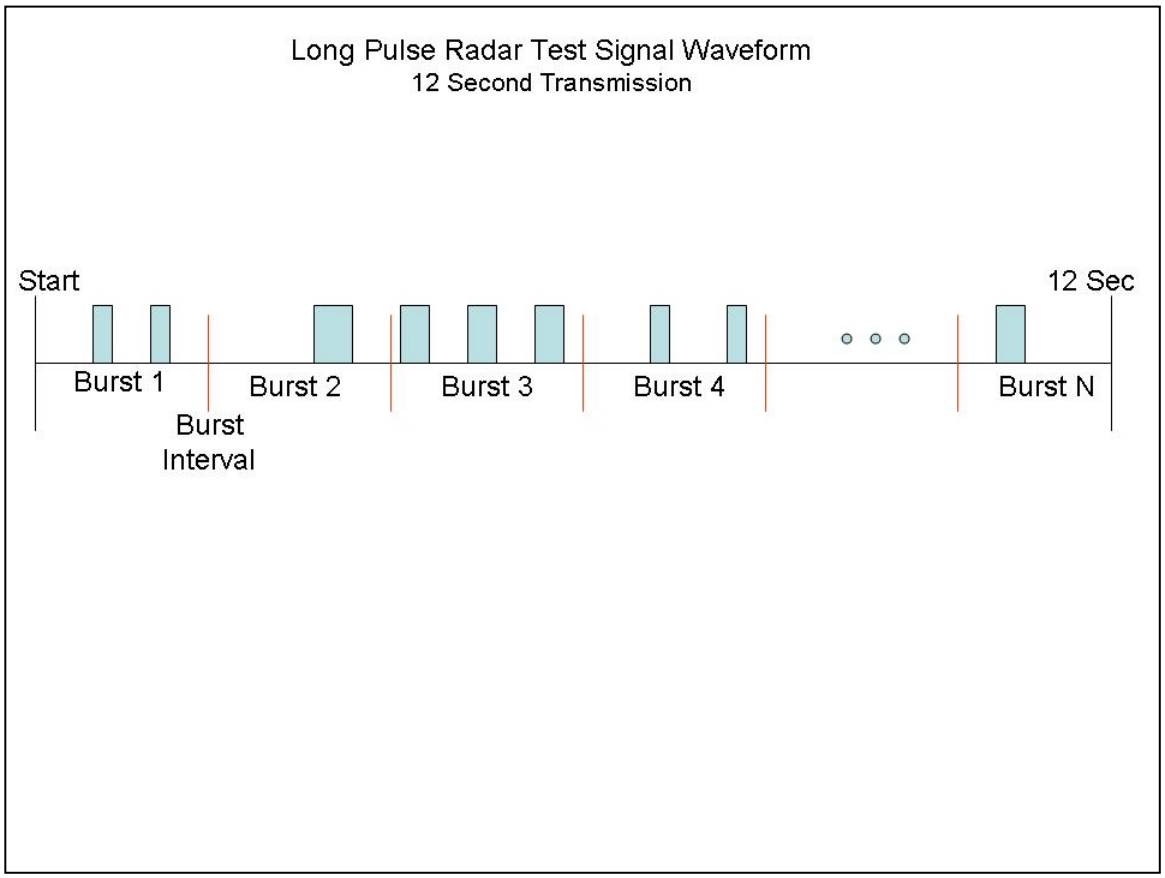
Each waveform is defined as follows:

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

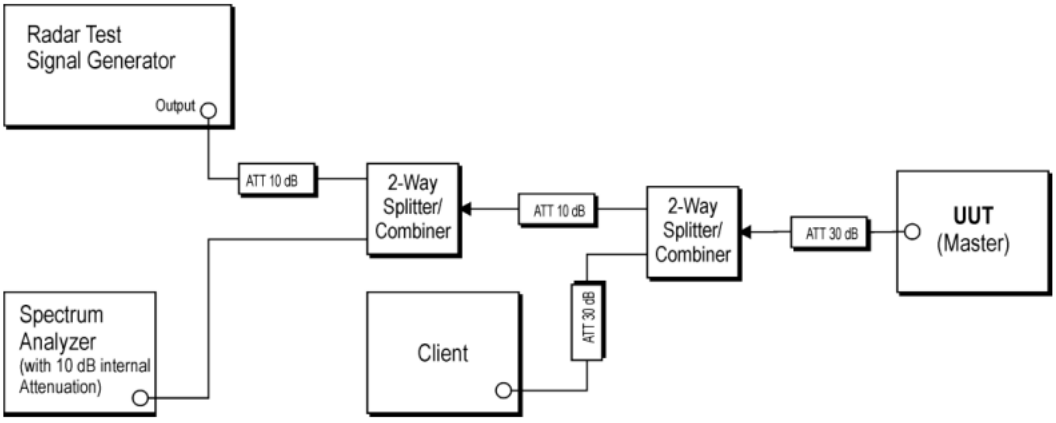
For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected[1] from the hopping sequence defined by the following algorithm:
The first frequency in a hopping sequence is selected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

4.1. 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 3MHz and 50MHz.

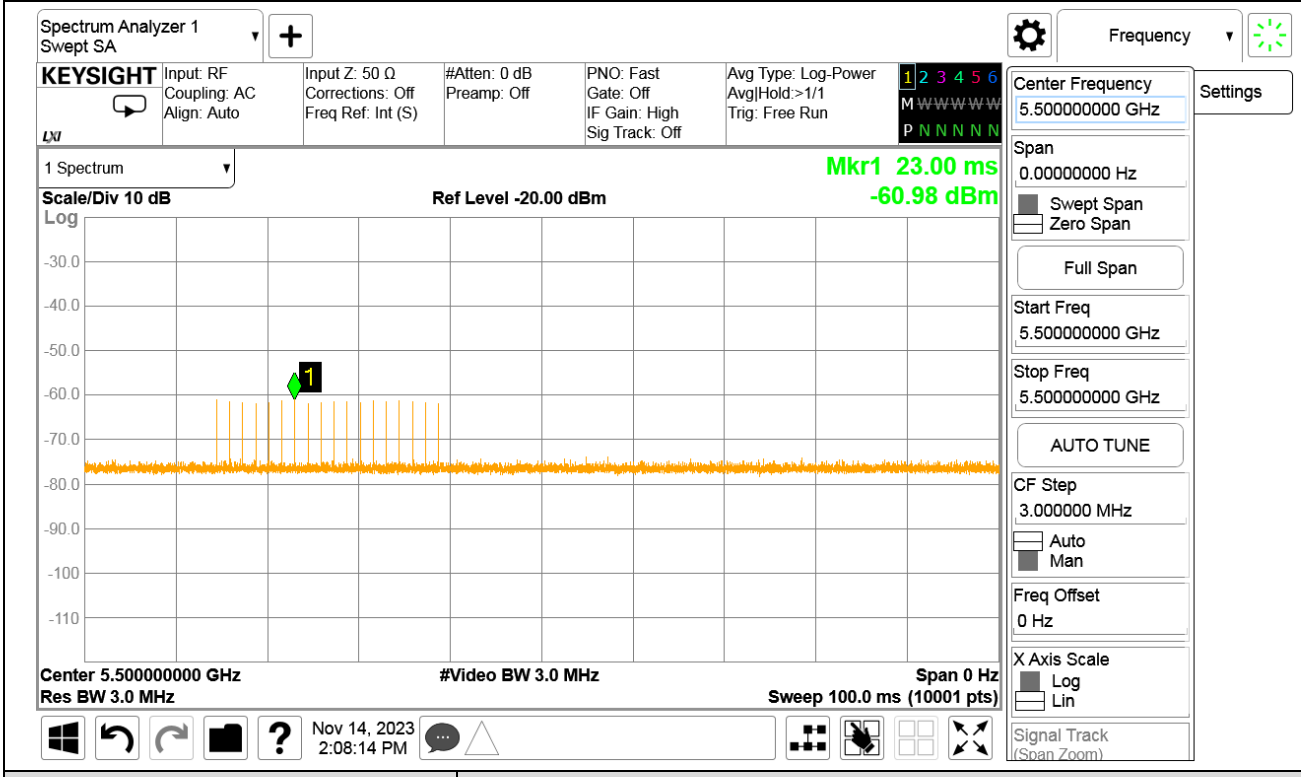
The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -64dBm due to the interference threshold level is not required.

Conducted Calibration Setup

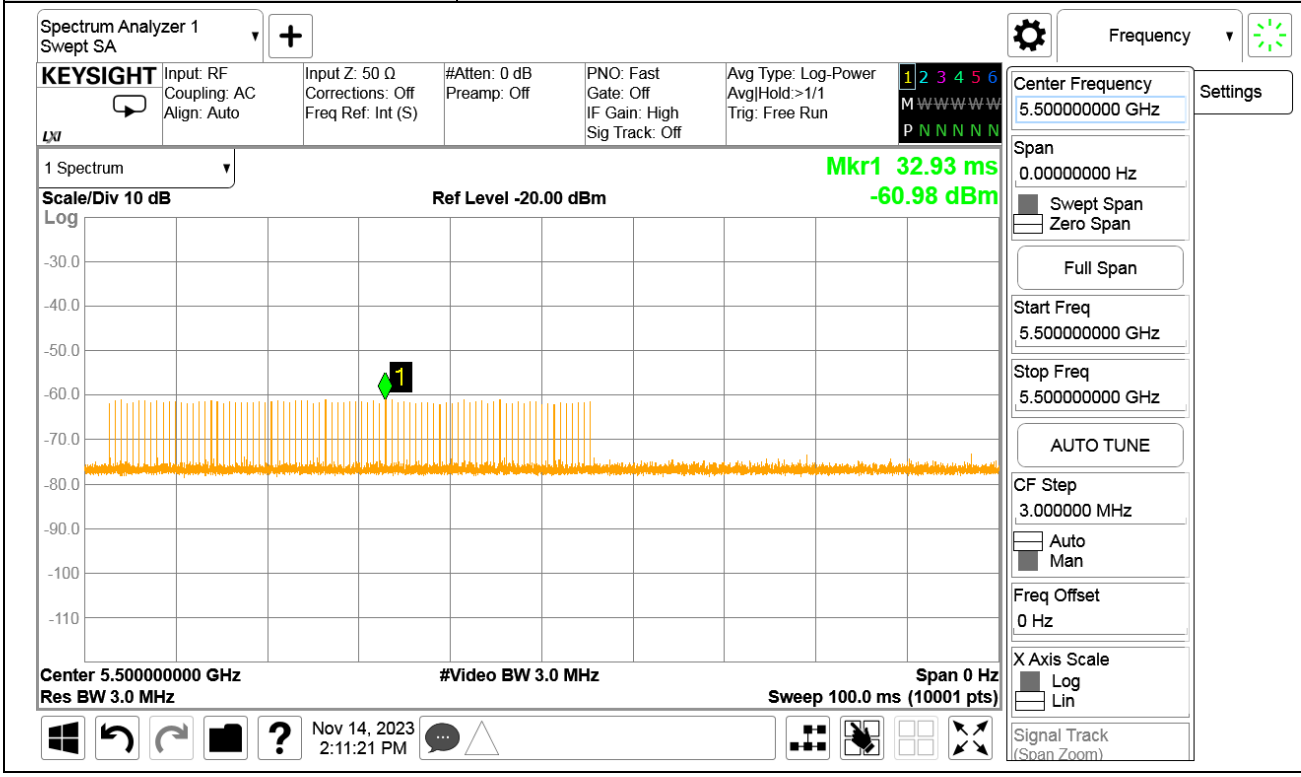


4.2. Radar Waveform Calibration Result

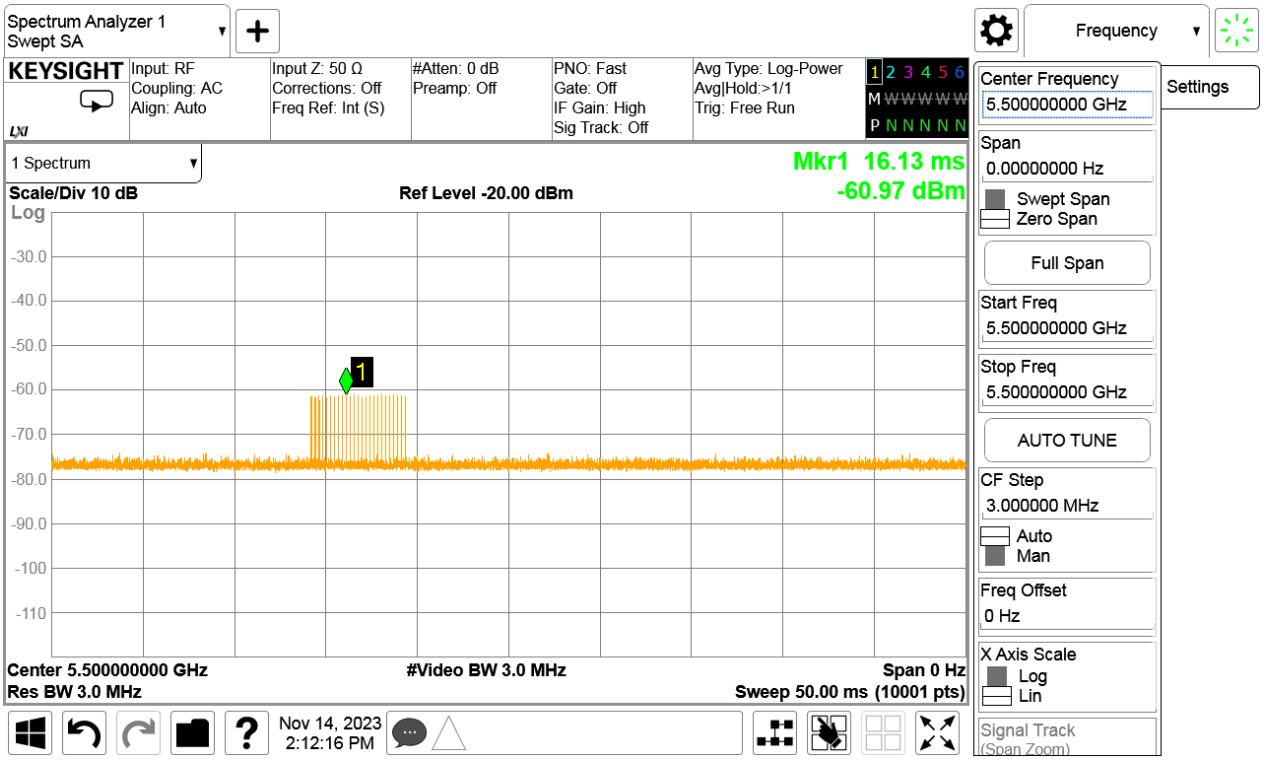
Radar Type 0	Calibration Plot - 5500 MHz



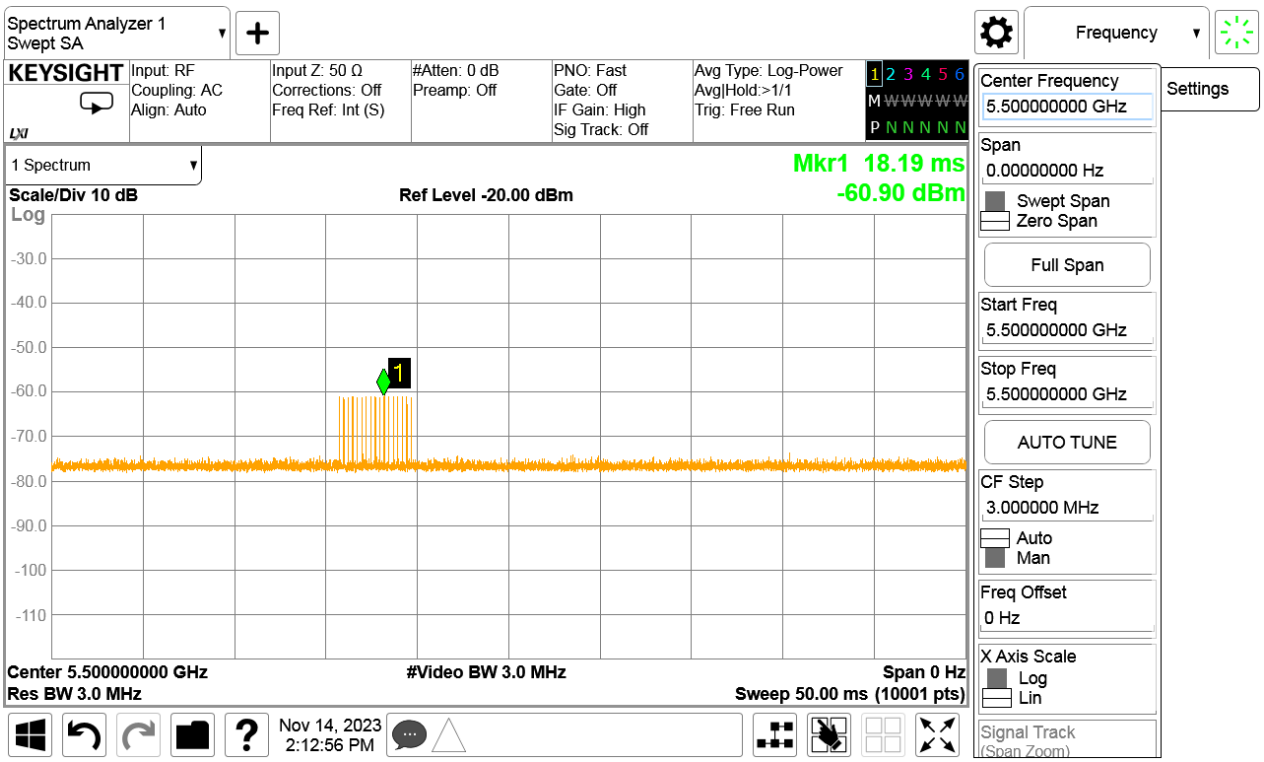
Radar Type 1	Calibration Plot - 5500 MHz



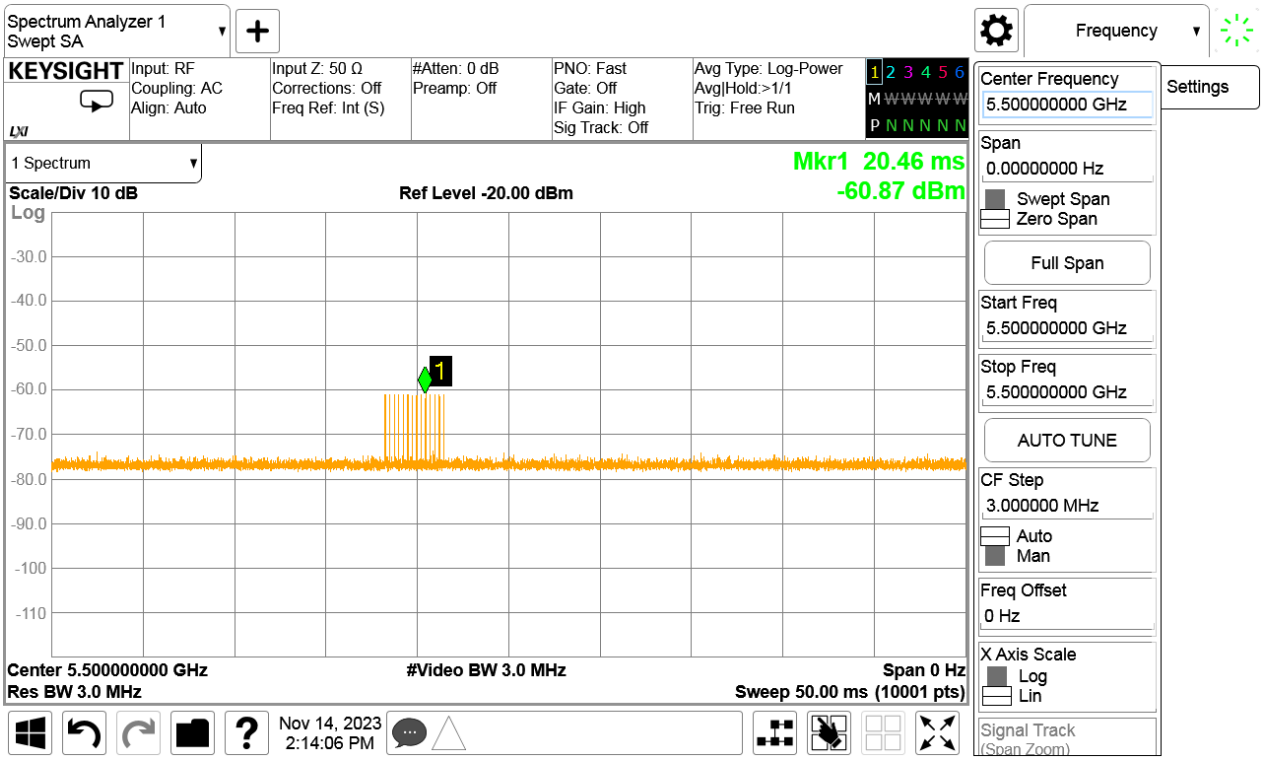
Radar Type 2	Calibration Plot - 5500 MHz



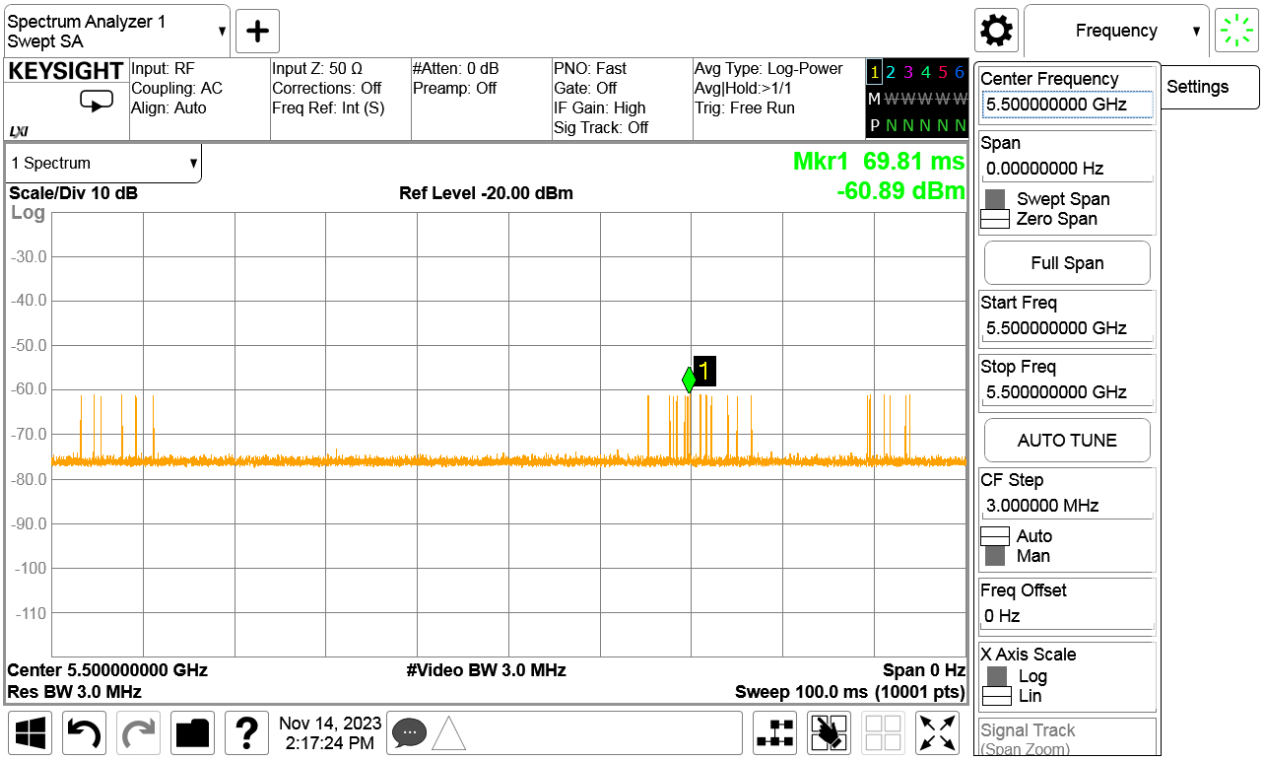
Radar Type 3	Calibration Plot - 5500 MHz



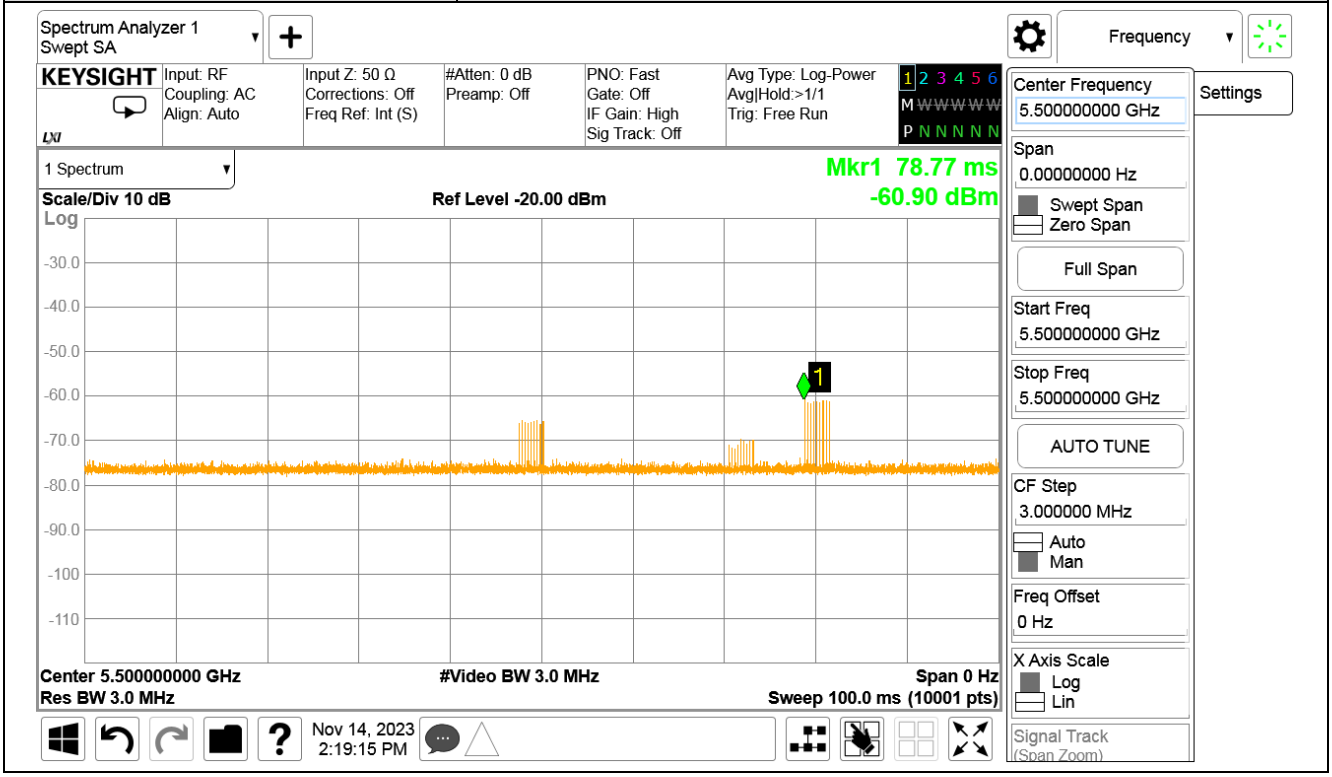
Radar Type 4	Calibration Plot - 5500 MHz



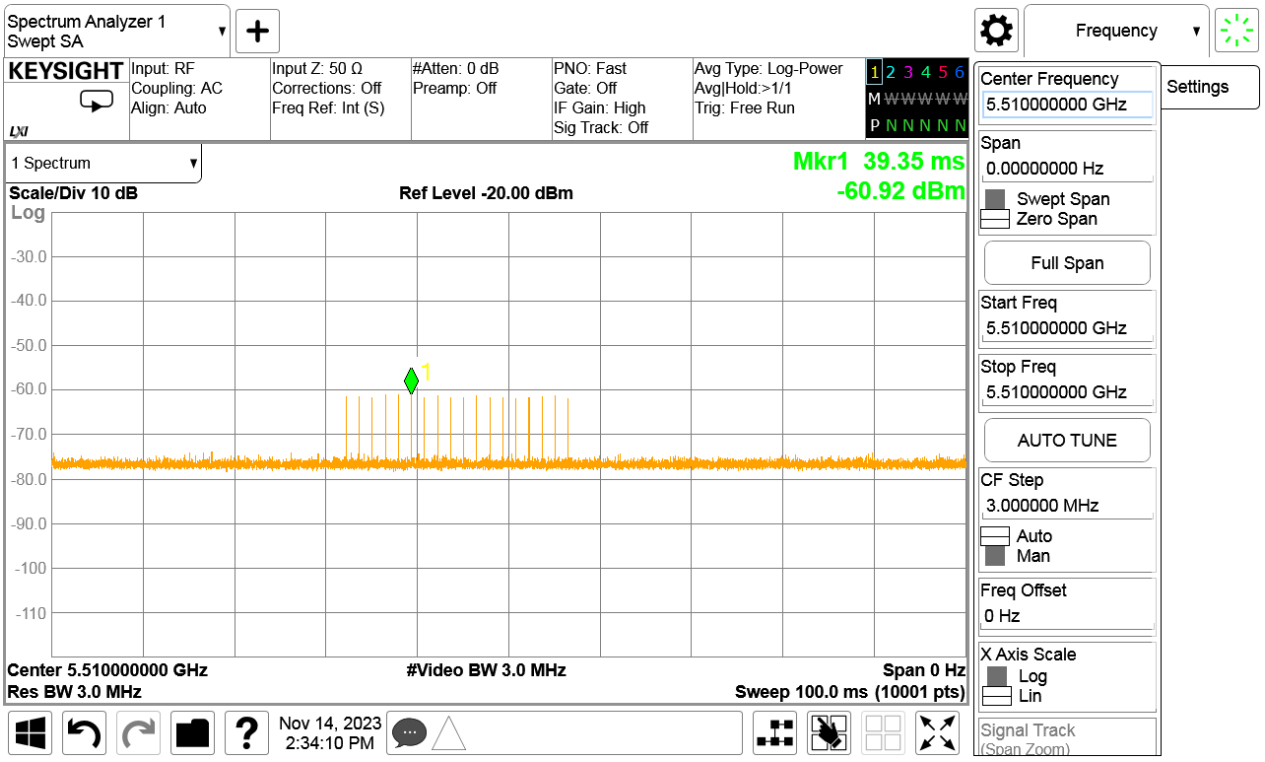
Radar Type 5	Calibration Plot - 5500 MHz



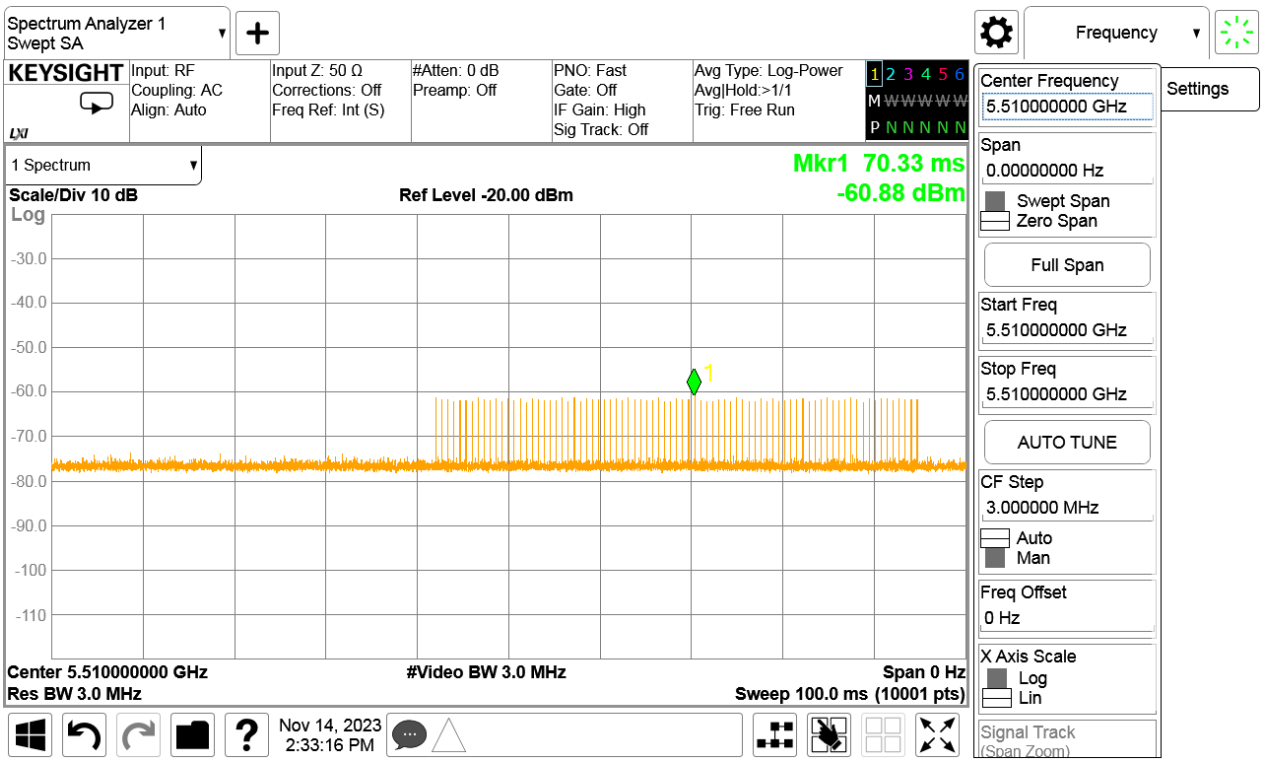
Radar Type 6	Calibration Plot - 5500 MHz



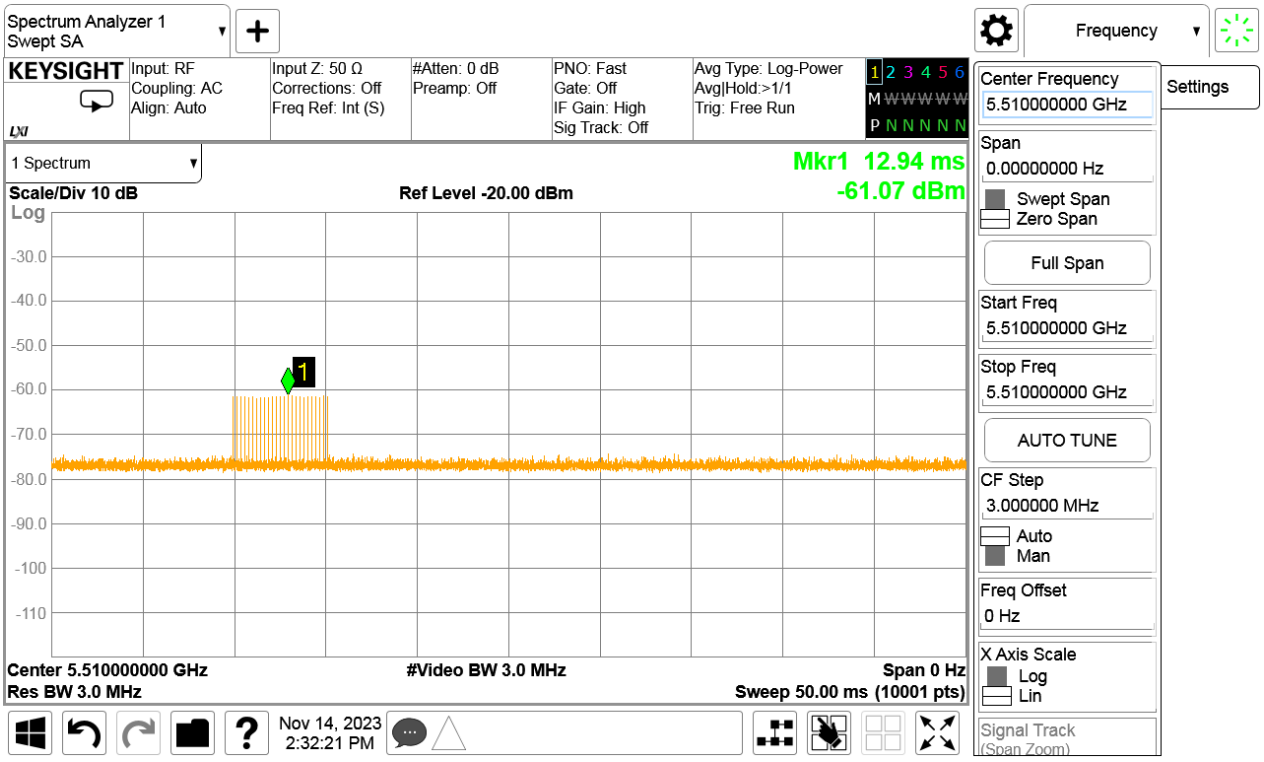
Radar Type 0	Calibration Plot - 5510 MHz



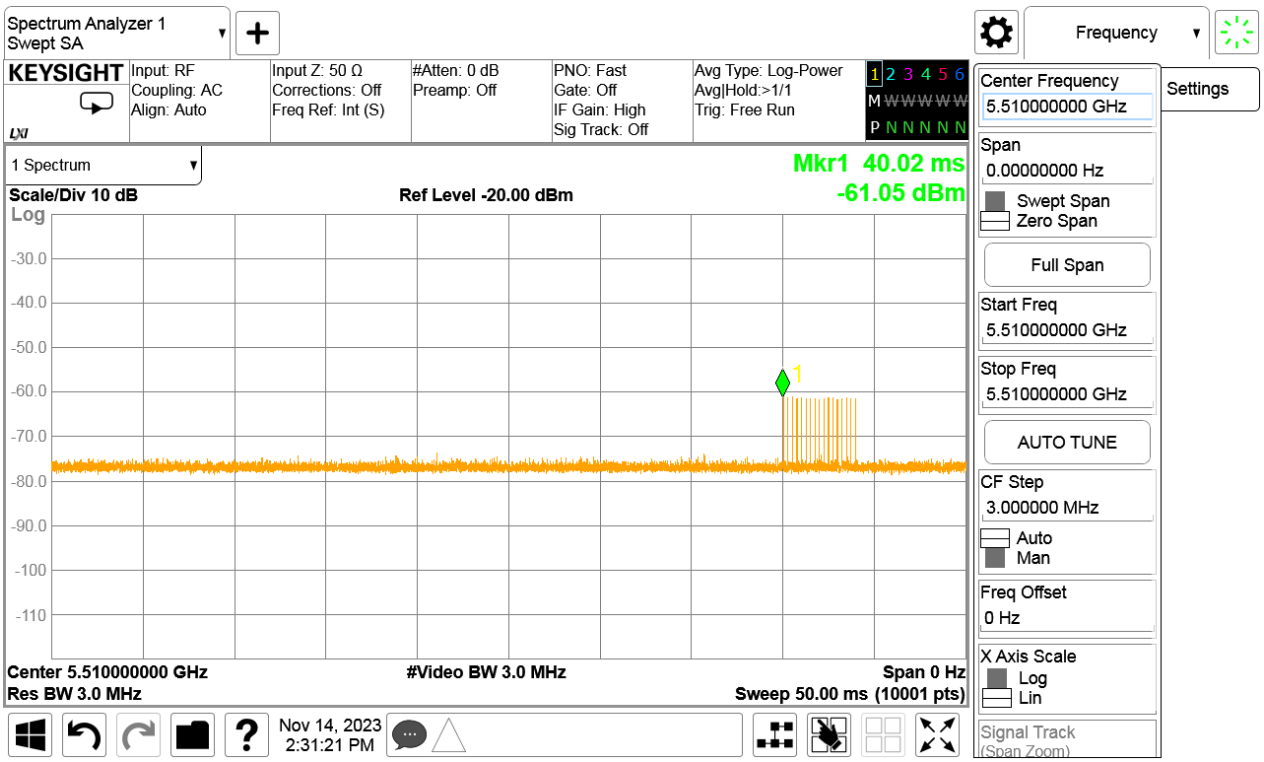
Radar Type 1	Calibration Plot - 5510 MHz



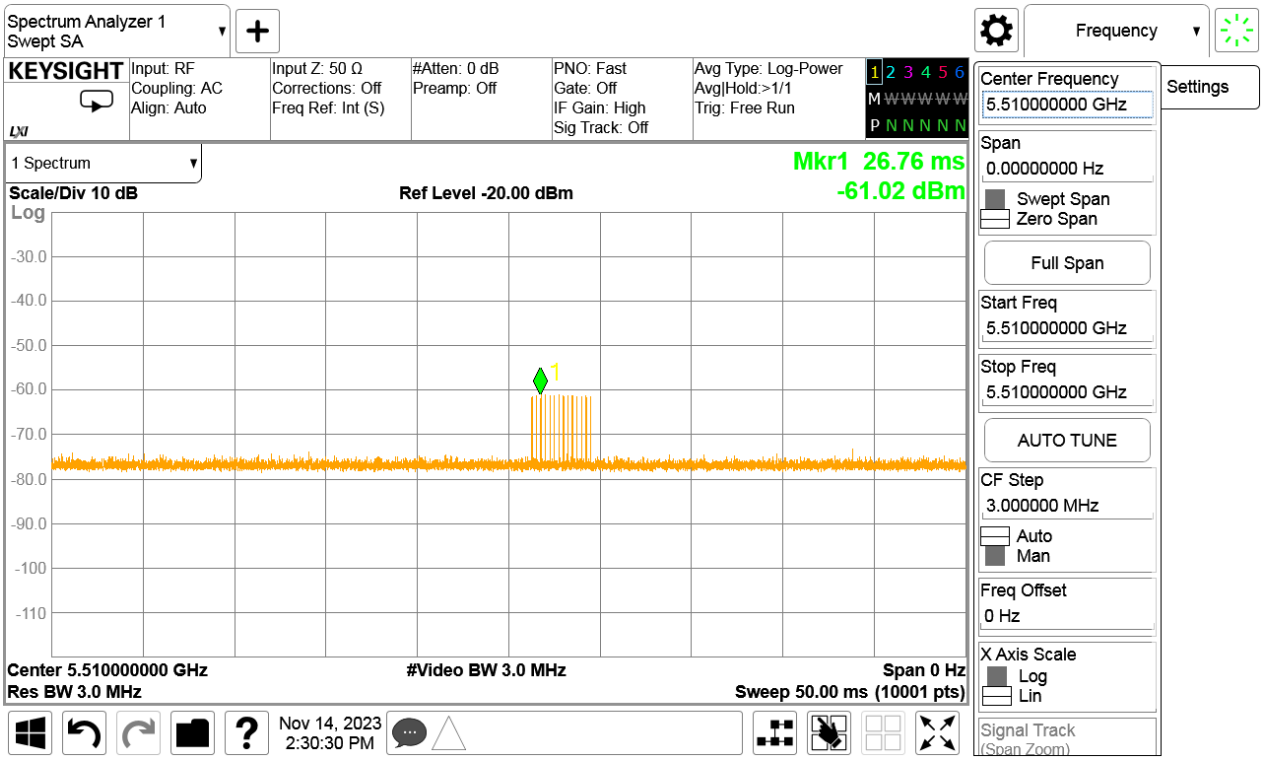
Radar Type 2	Calibration Plot - 5510 MHz



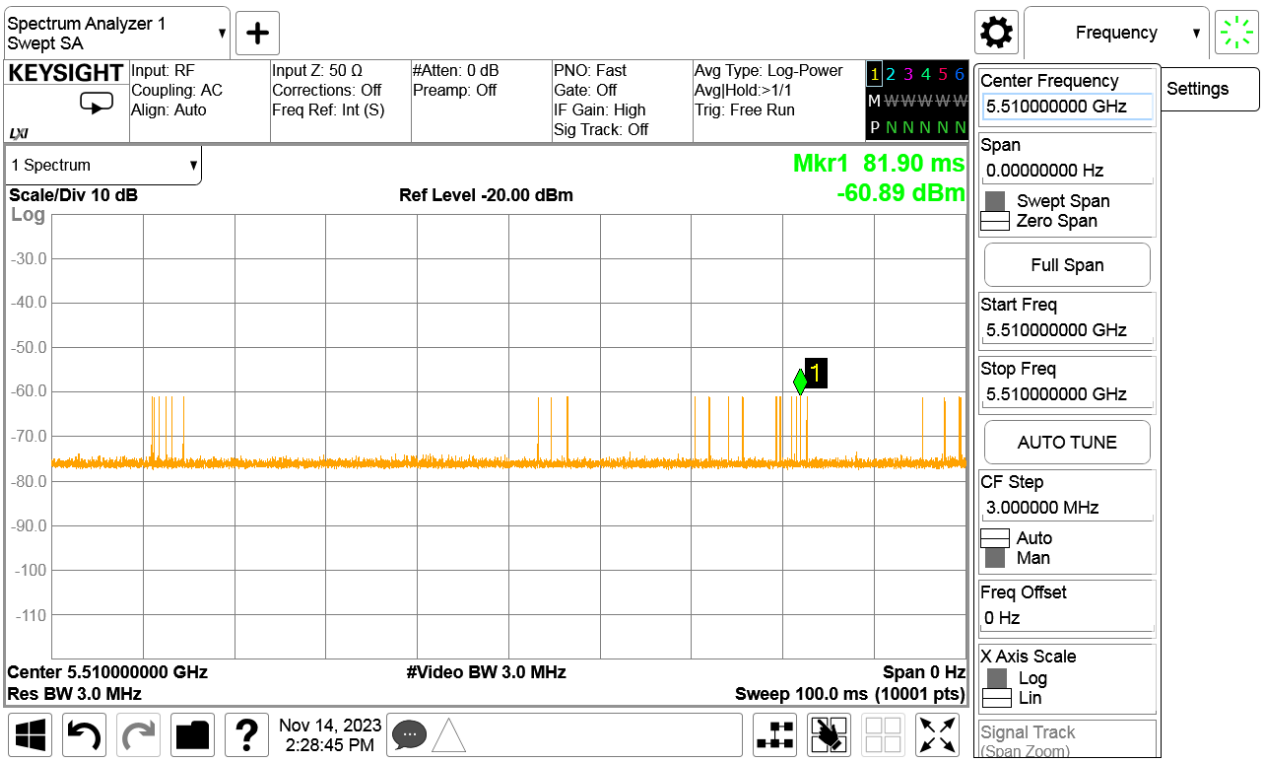
Radar Type 3	Calibration Plot - 5510 MHz



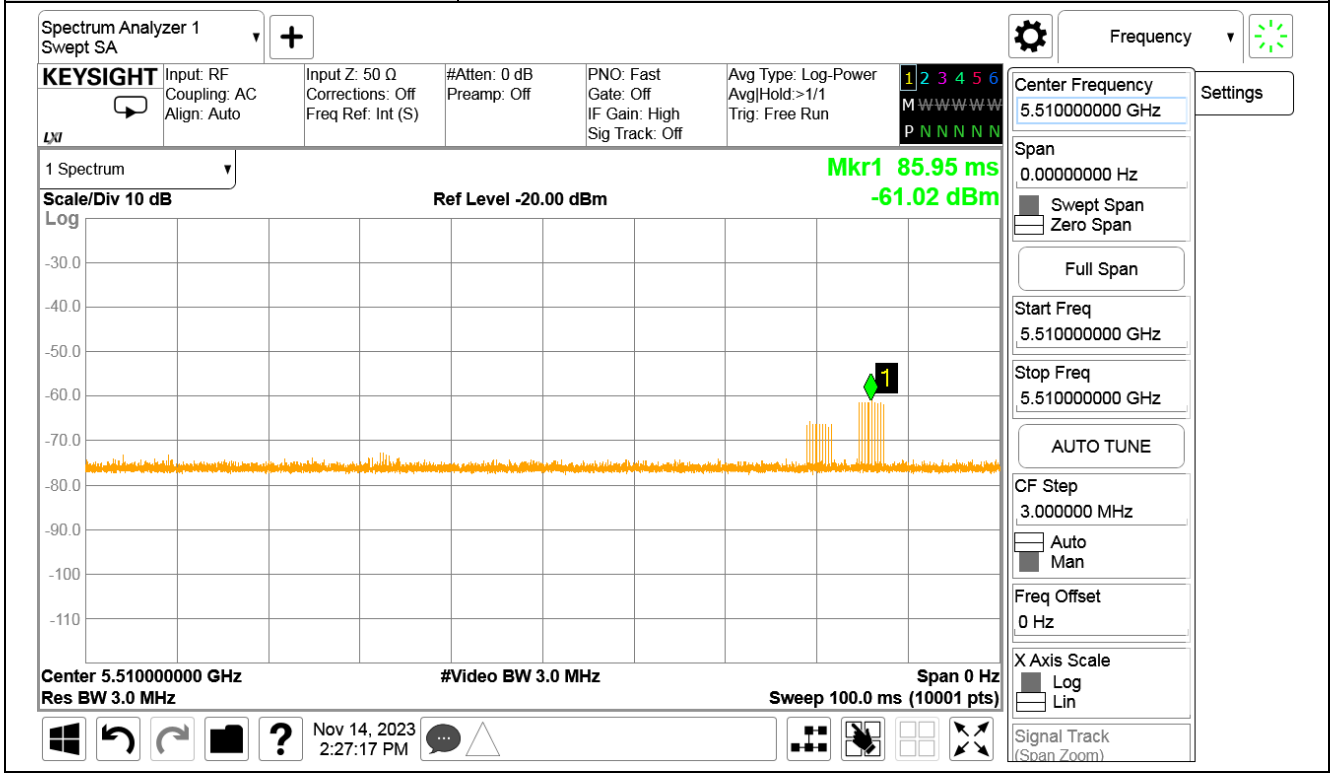
Radar Type 4	Calibration Plot - 5510 MHz



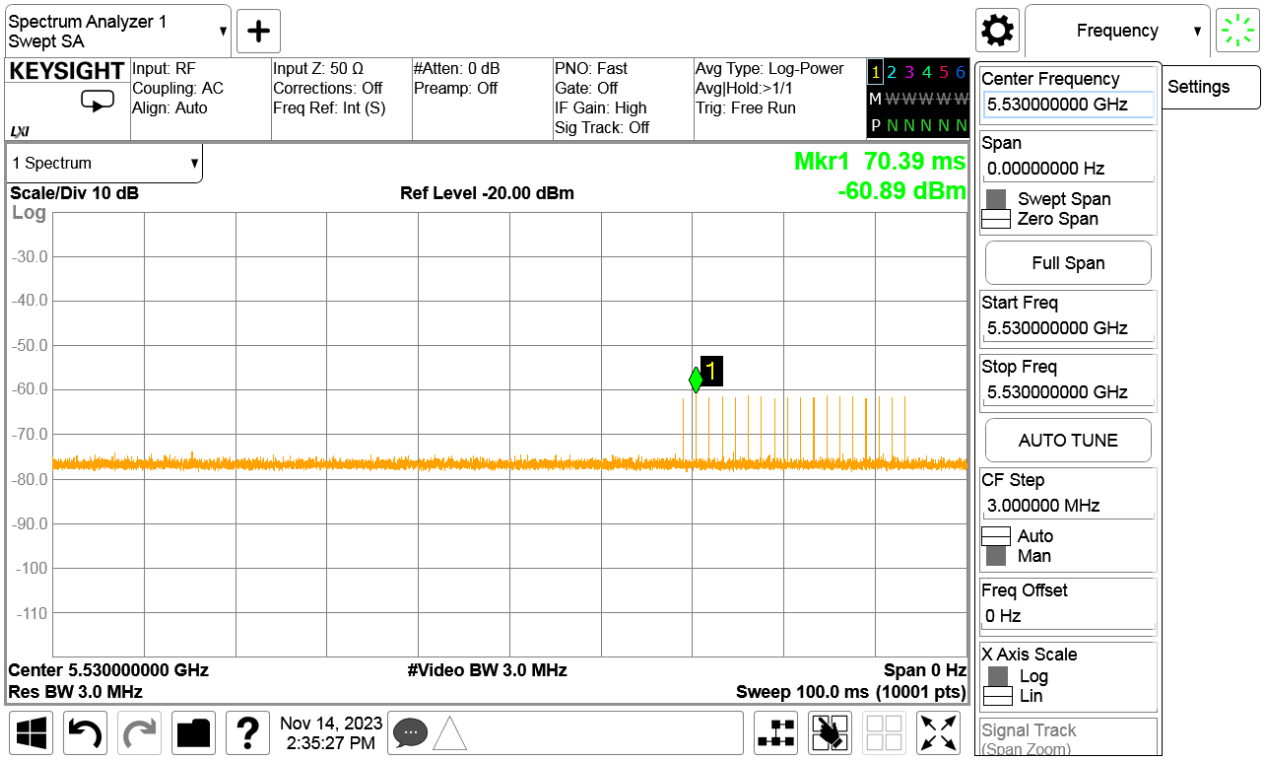
Radar Type 5	Calibration Plot - 5510 MHz



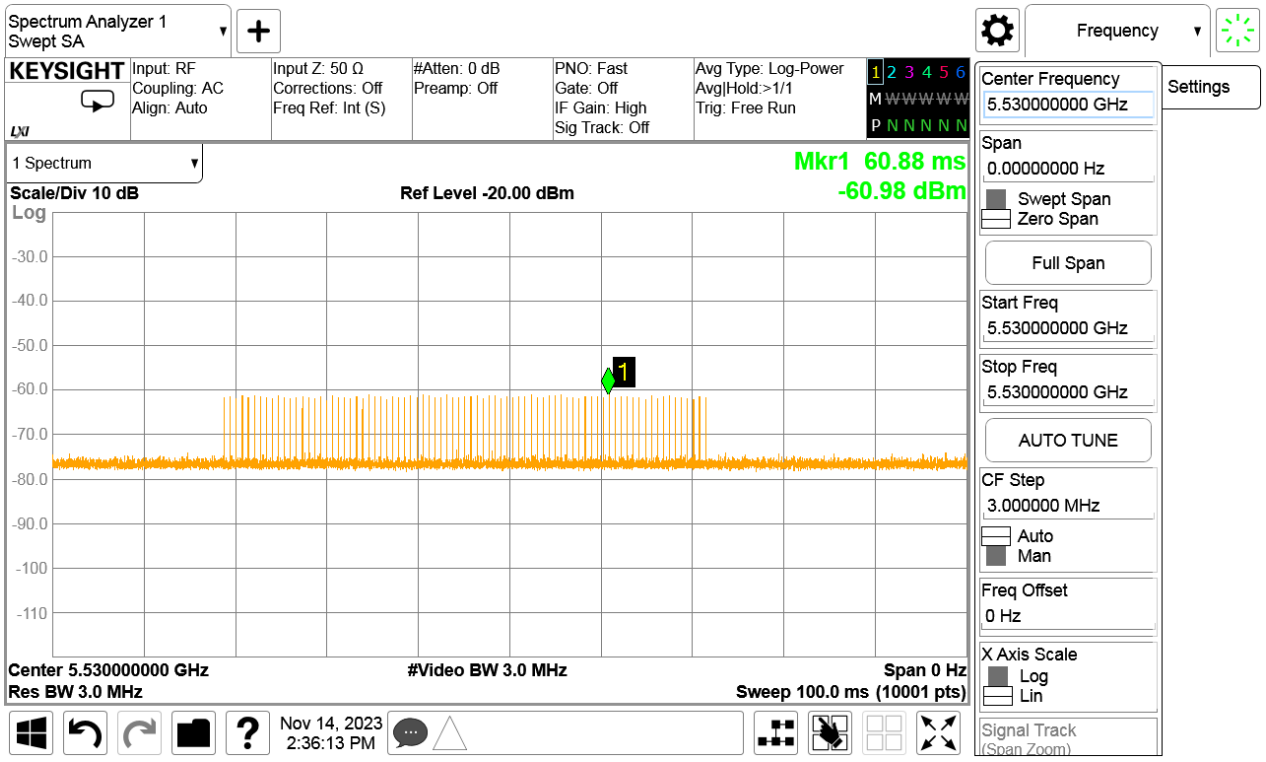
Radar Type 6	Calibration Plot - 5510 MHz



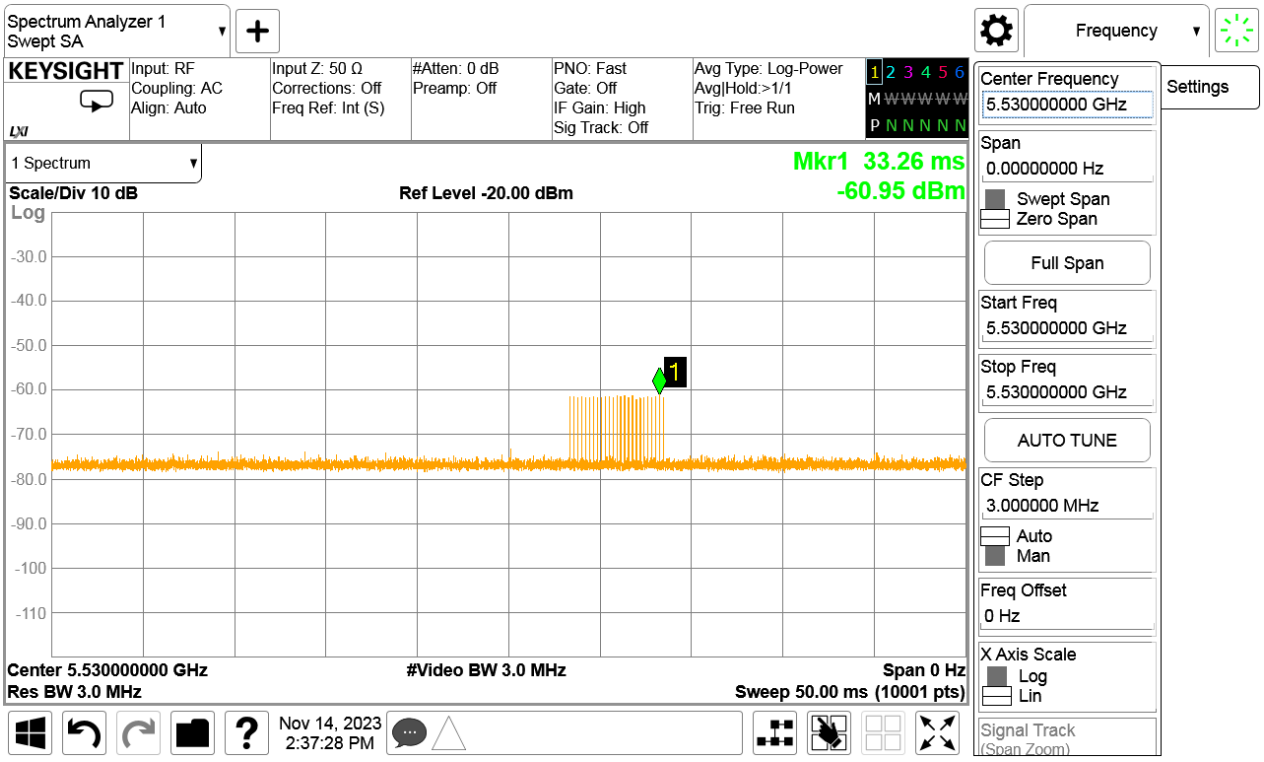
Radar Type 0	Calibration Plot - 5530 MHz



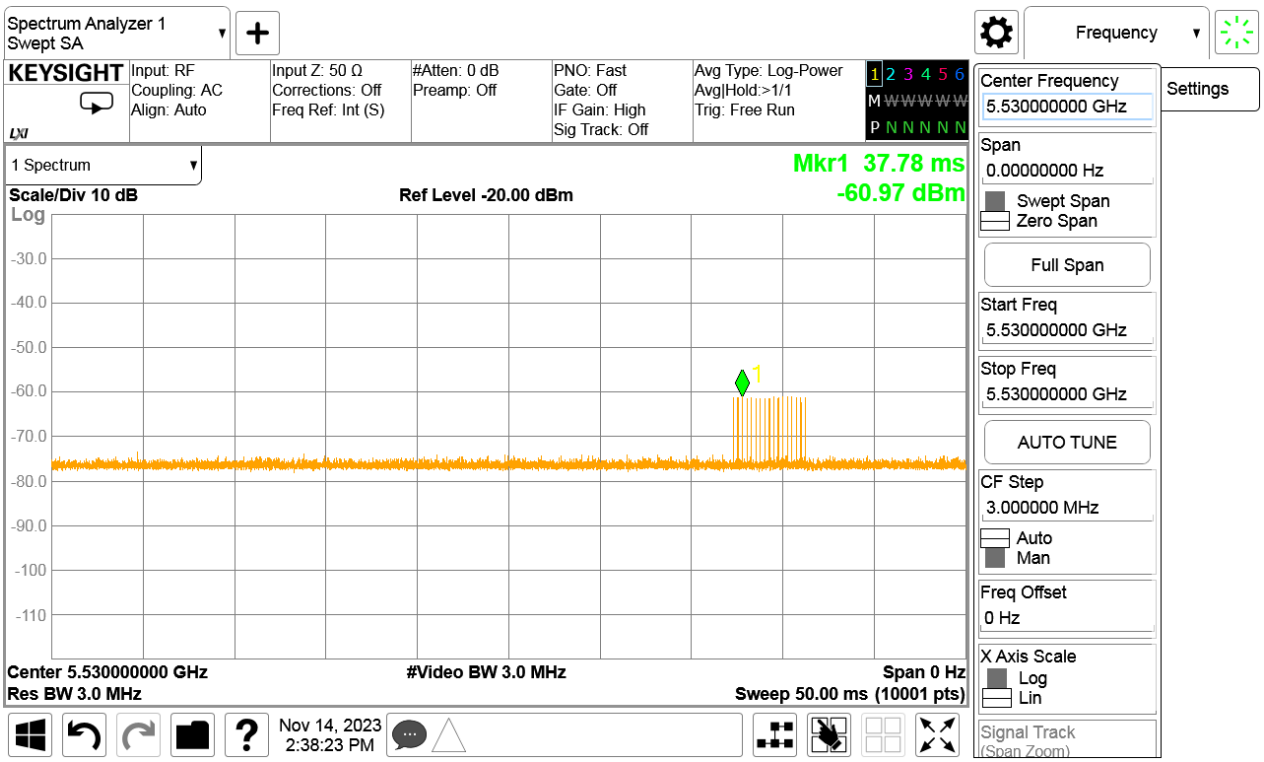
Radar Type 1	Calibration Plot - 5530 MHz



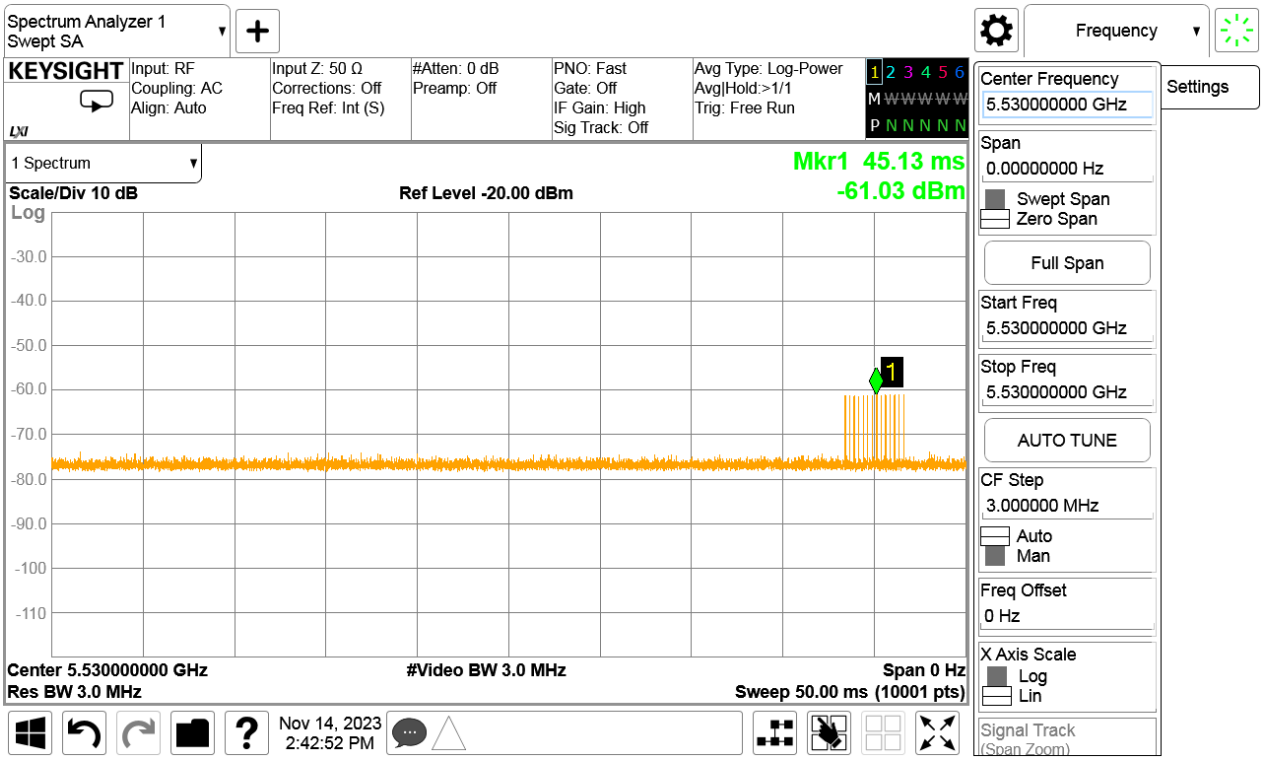
Radar Type 2	Calibration Plot - 5530 MHz



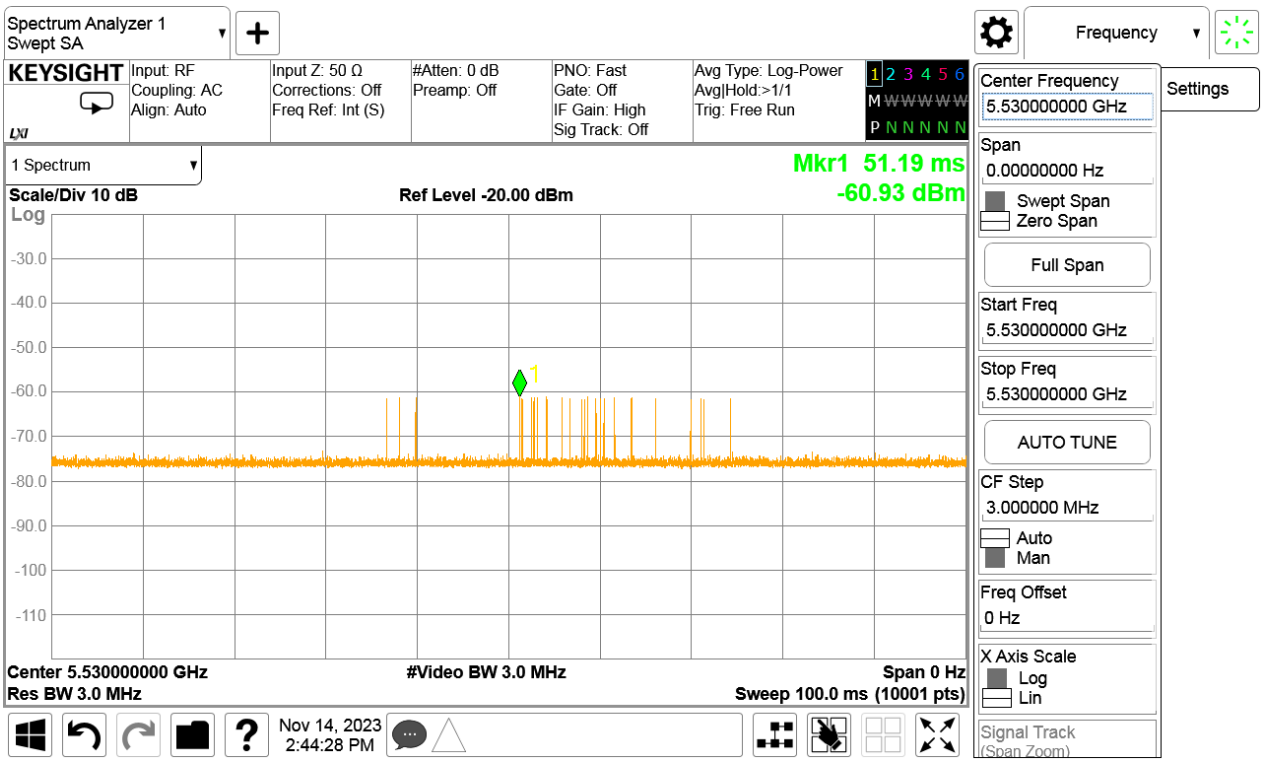
Radar Type 3	Calibration Plot - 5530 MHz



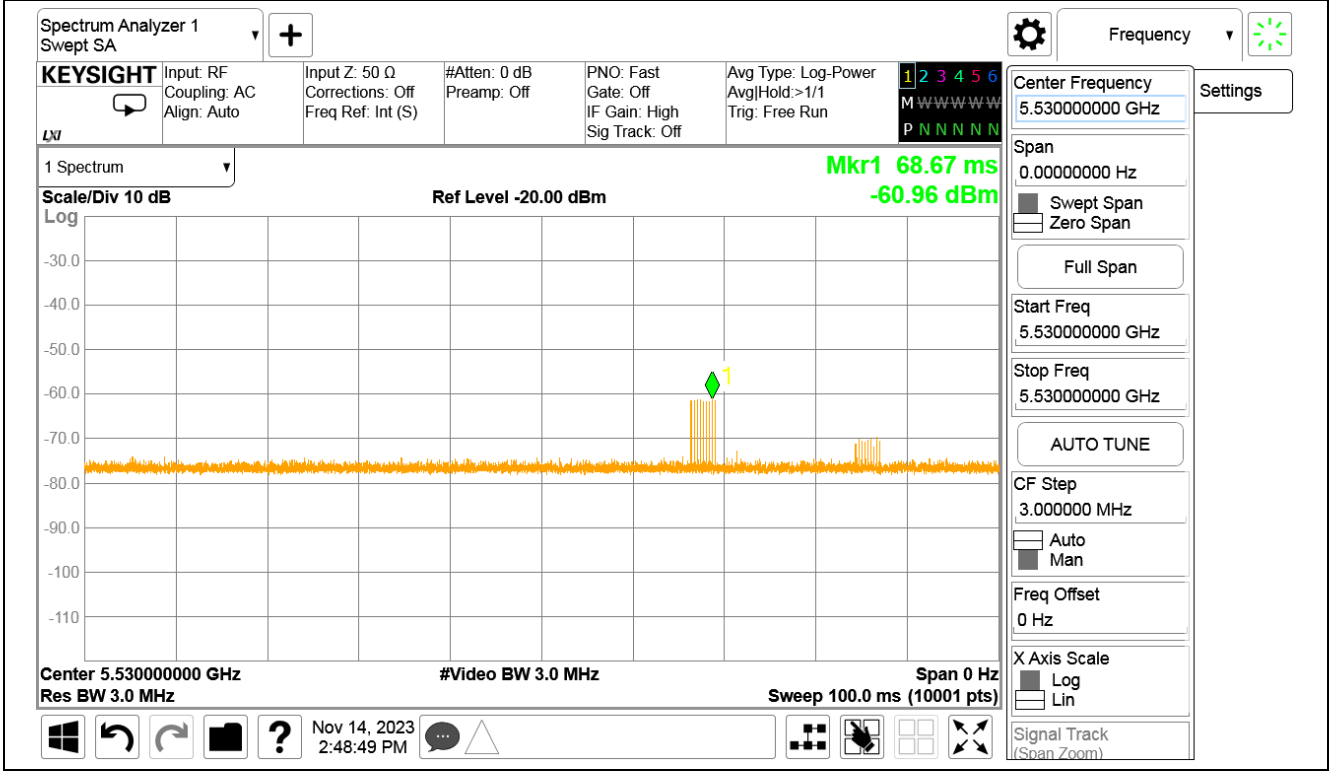
Radar Type 4	Calibration Plot - 5530 MHz



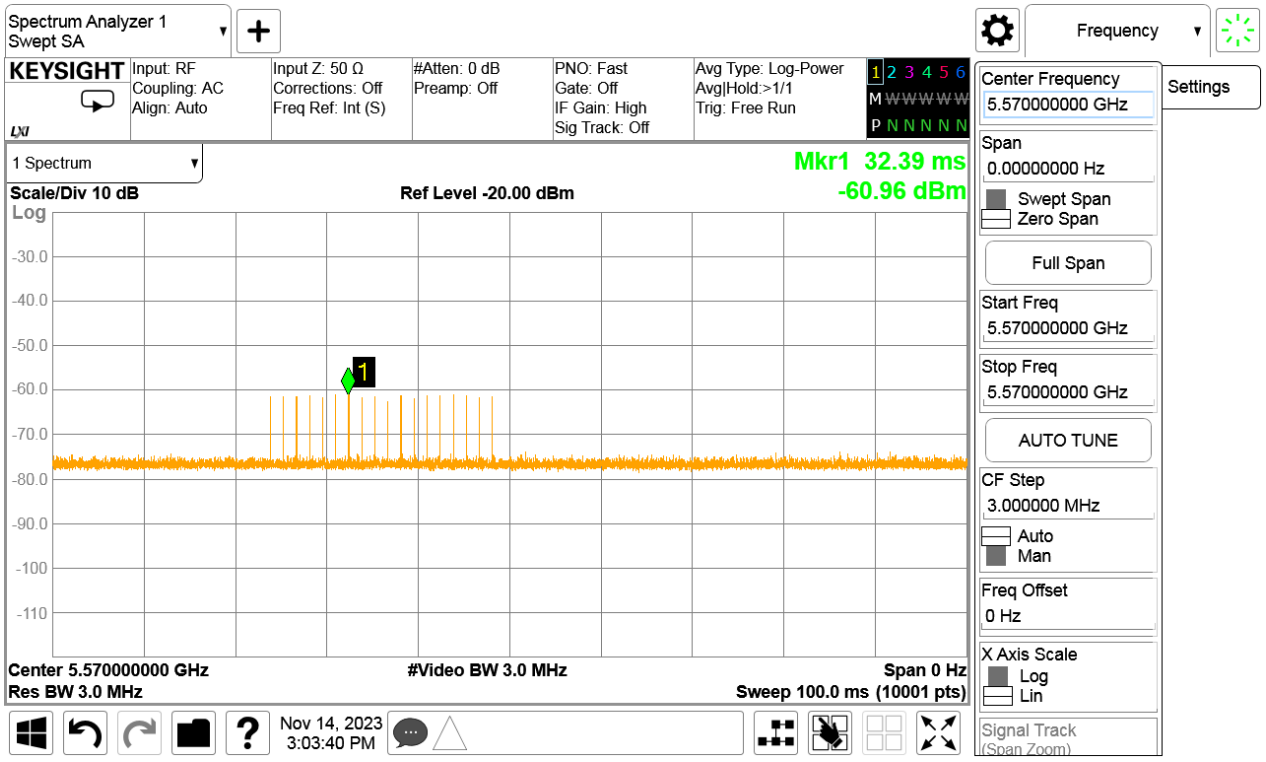
Radar Type 5	Calibration Plot - 5530 MHz



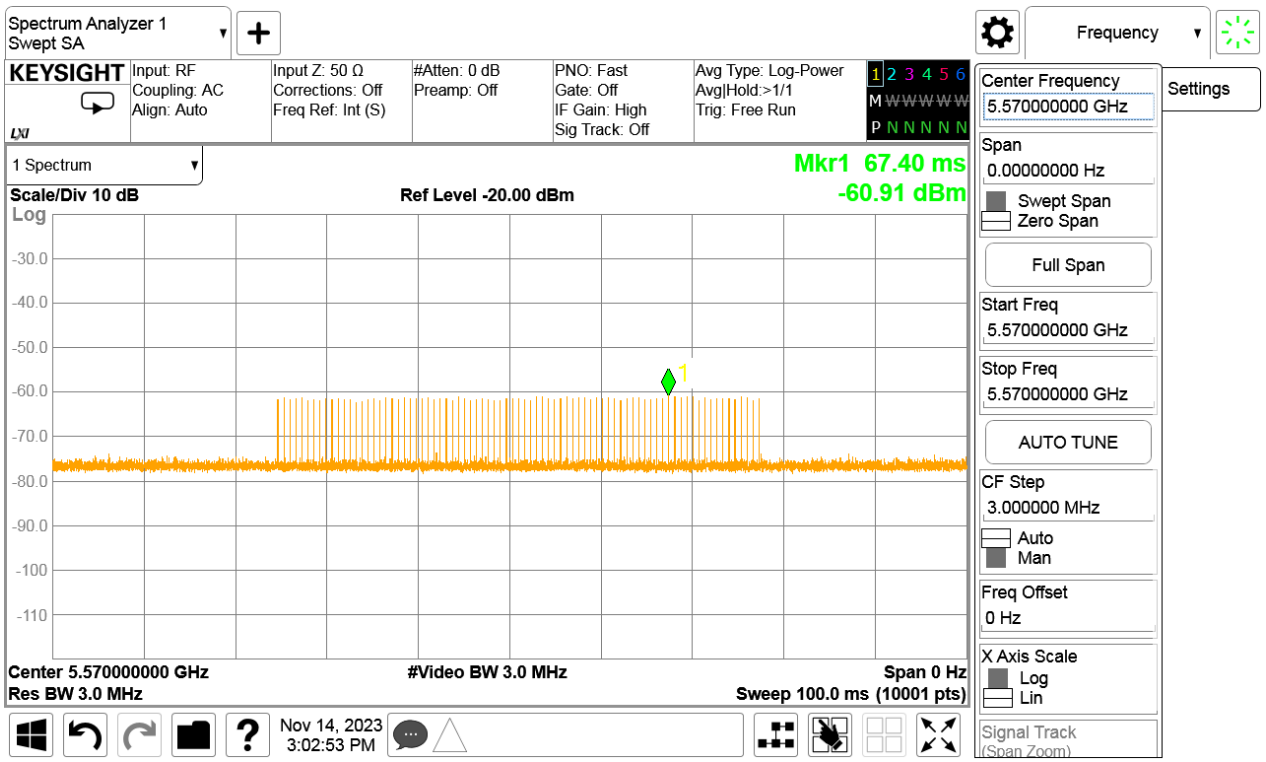
Radar Type 6	Calibration Plot - 5530 MHz



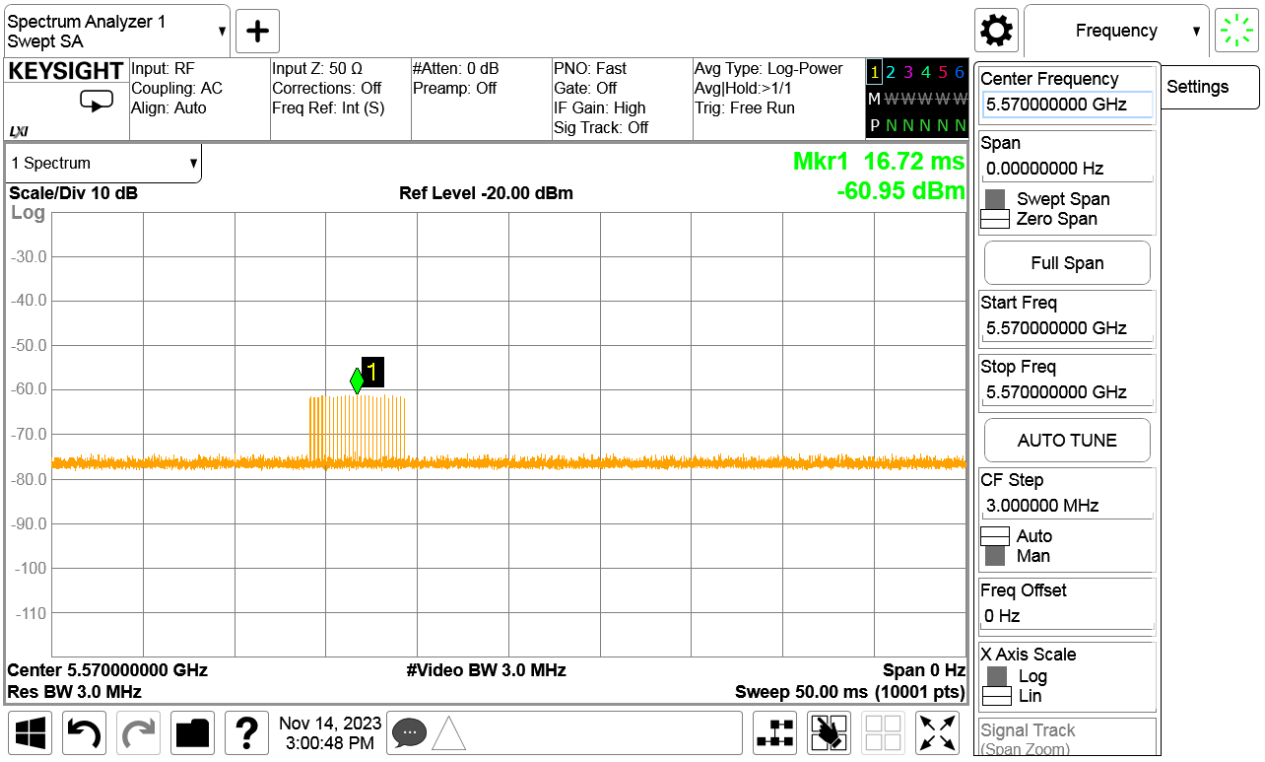
Radar Type 0	Calibration Plot - 5570 MHz



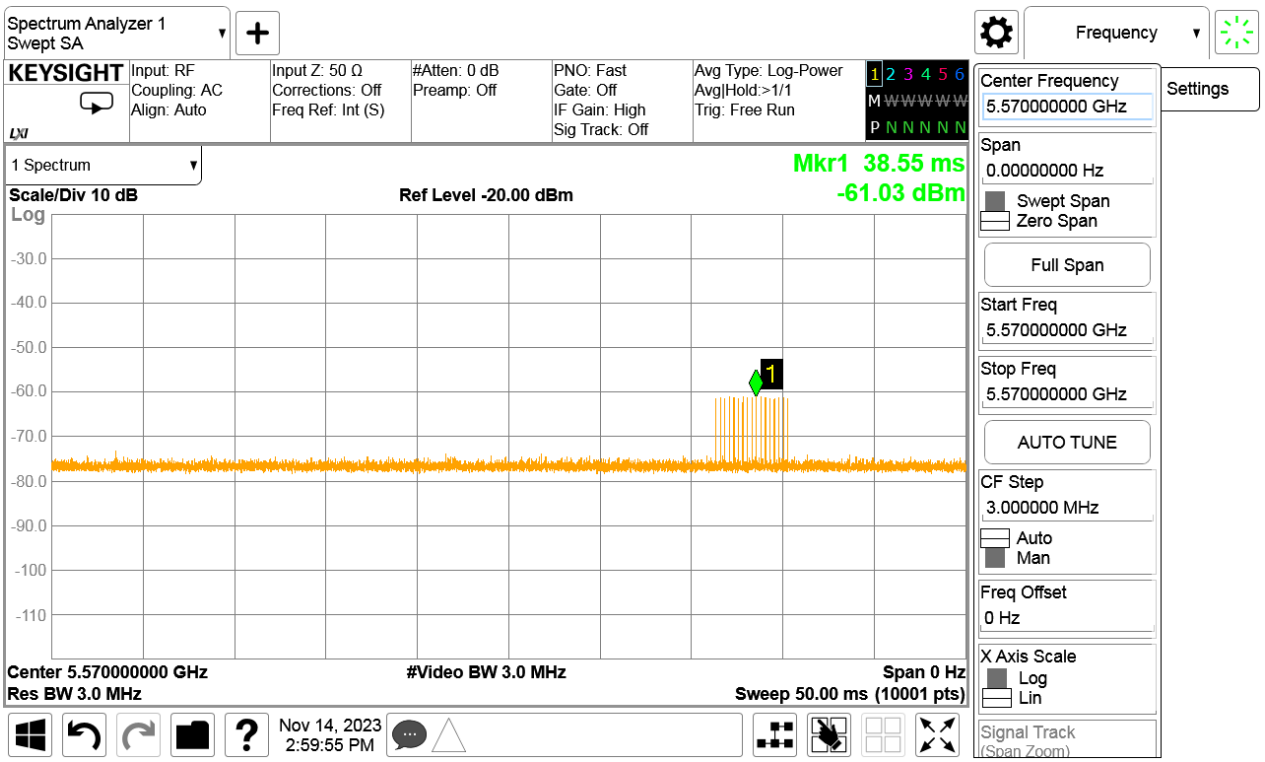
Radar Type 1	Calibration Plot - 5570 MHz



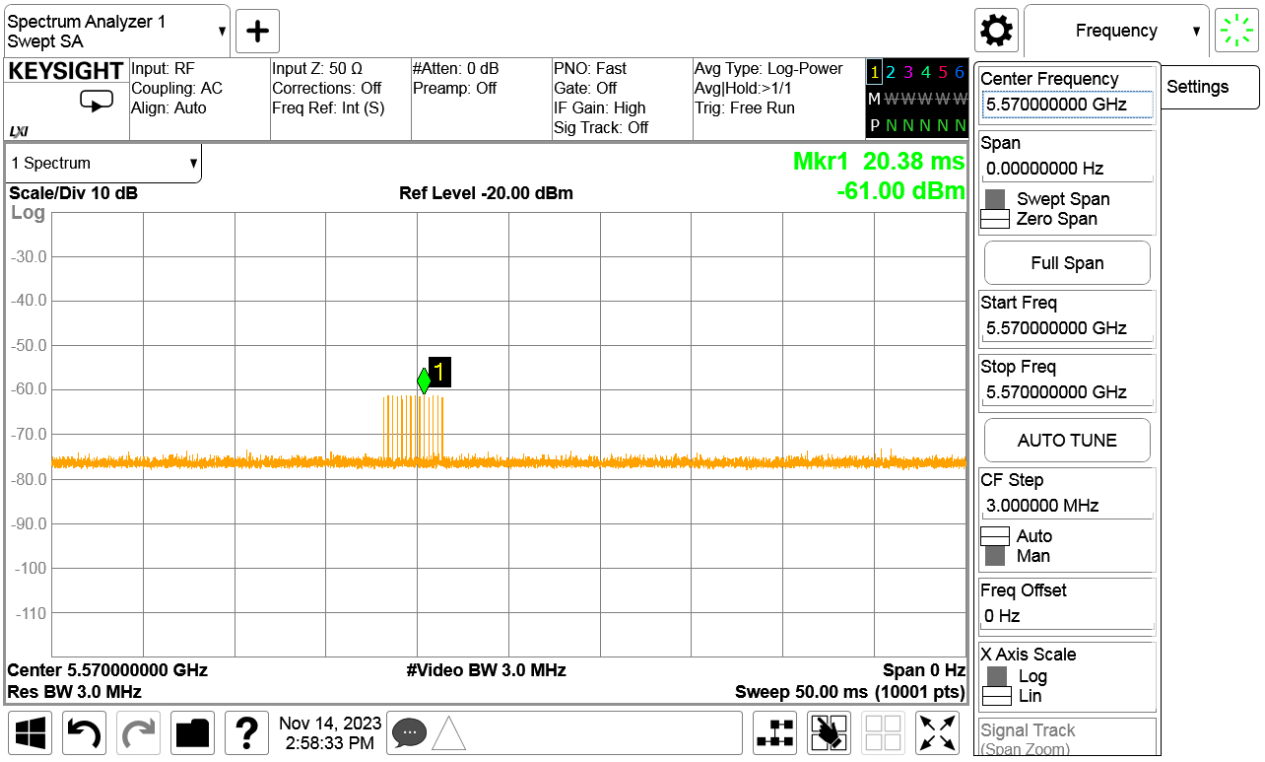
Radar Type 2	Calibration Plot - 5570 MHz



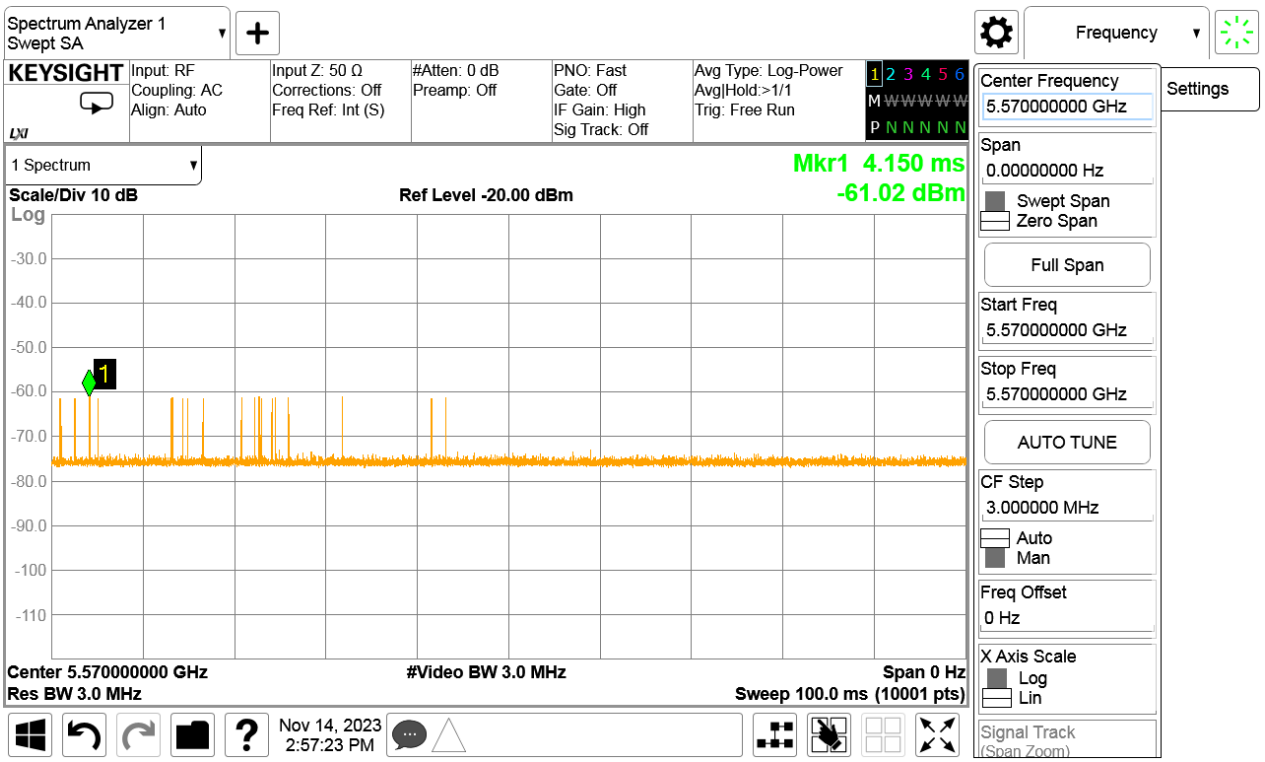
Radar Type 3	Calibration Plot - 5570 MHz



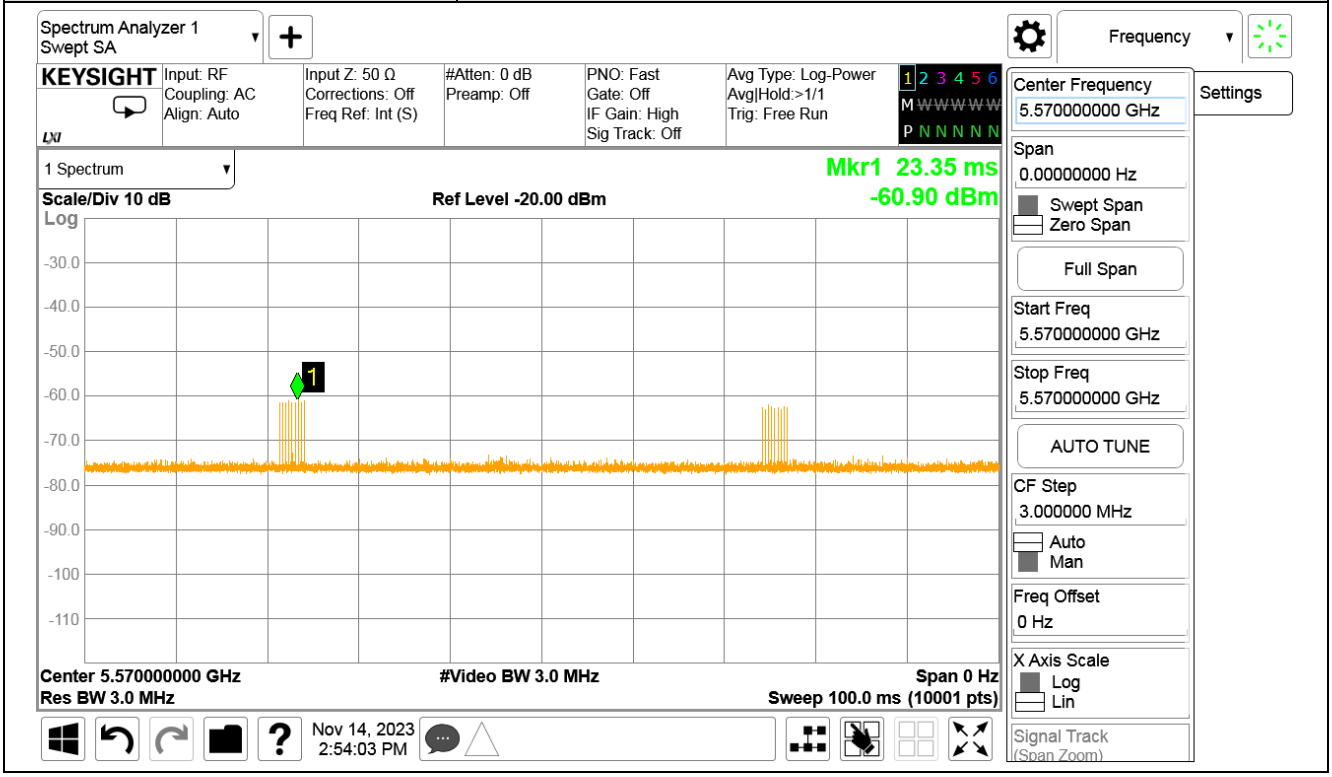
Radar Type 4	Calibration Plot - 5570 MHz



Radar Type 5	Calibration Plot - 5570 MHz



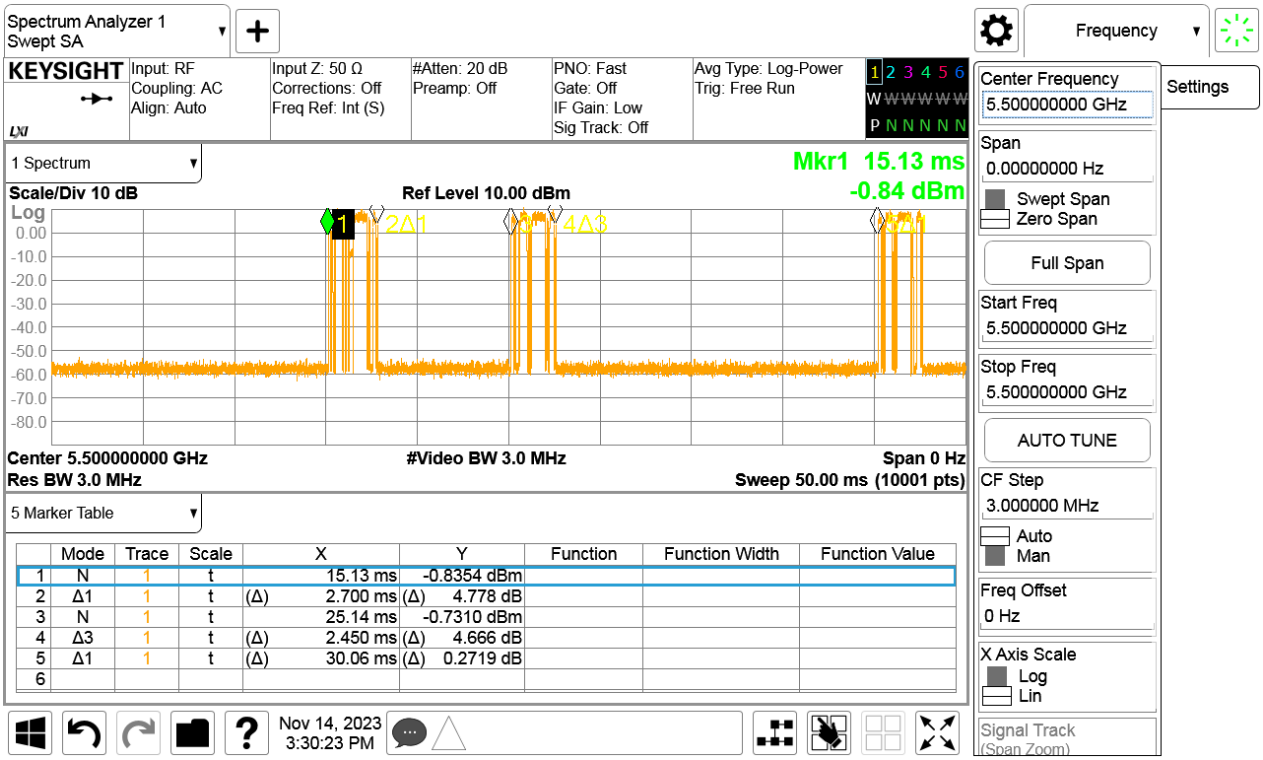
Radar Type 6	Calibration Plot - 5570 MHz



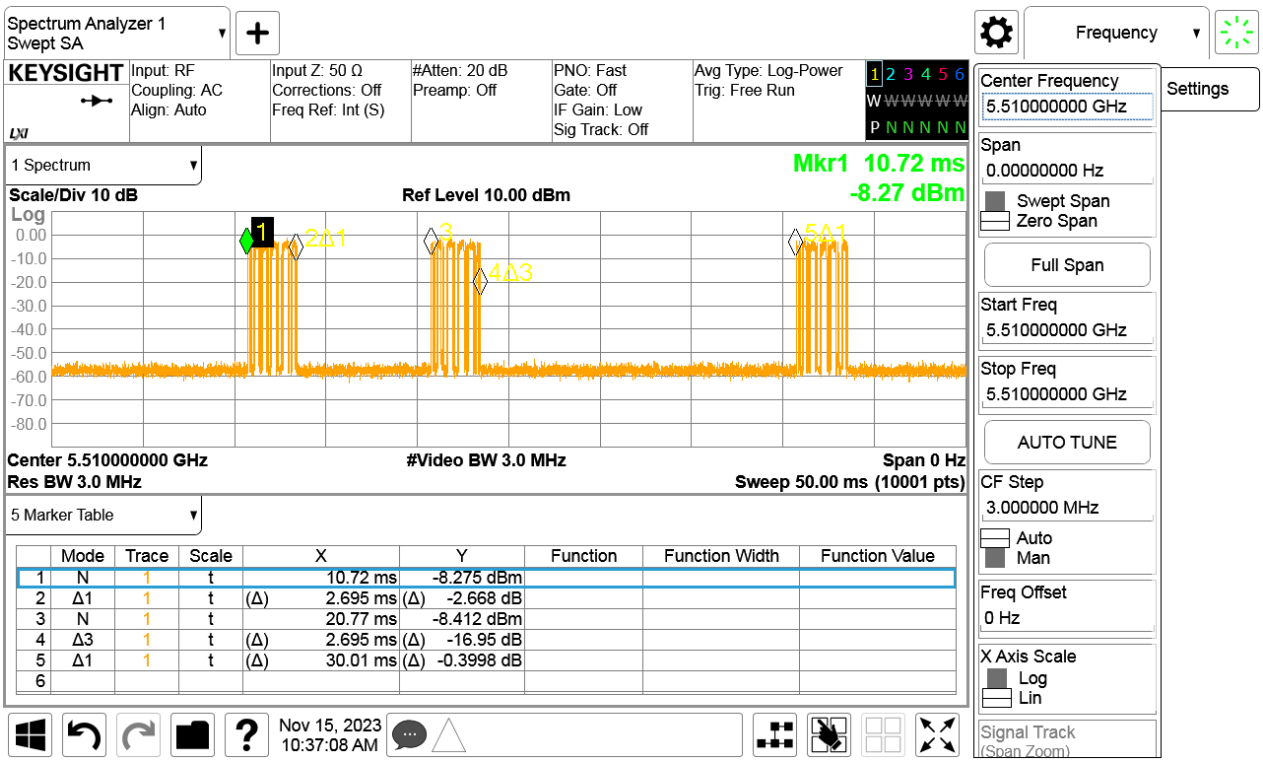
4.3. Master Data Traffic Plot Result

Modulation	Frequency (MHz)	Channel Loading (%)	Requirement loading (%)	Result
802.11ax (20 MHz)	5500	17.1324	> 17	Pass
802.11ax (40 MHz)	5510	17.9606	> 17	Pass
802.11ax (80 MHz)	5530	17.0845	> 17	Pass
802.11ax (160 MHz)	5570	17.3942	> 17	Pass

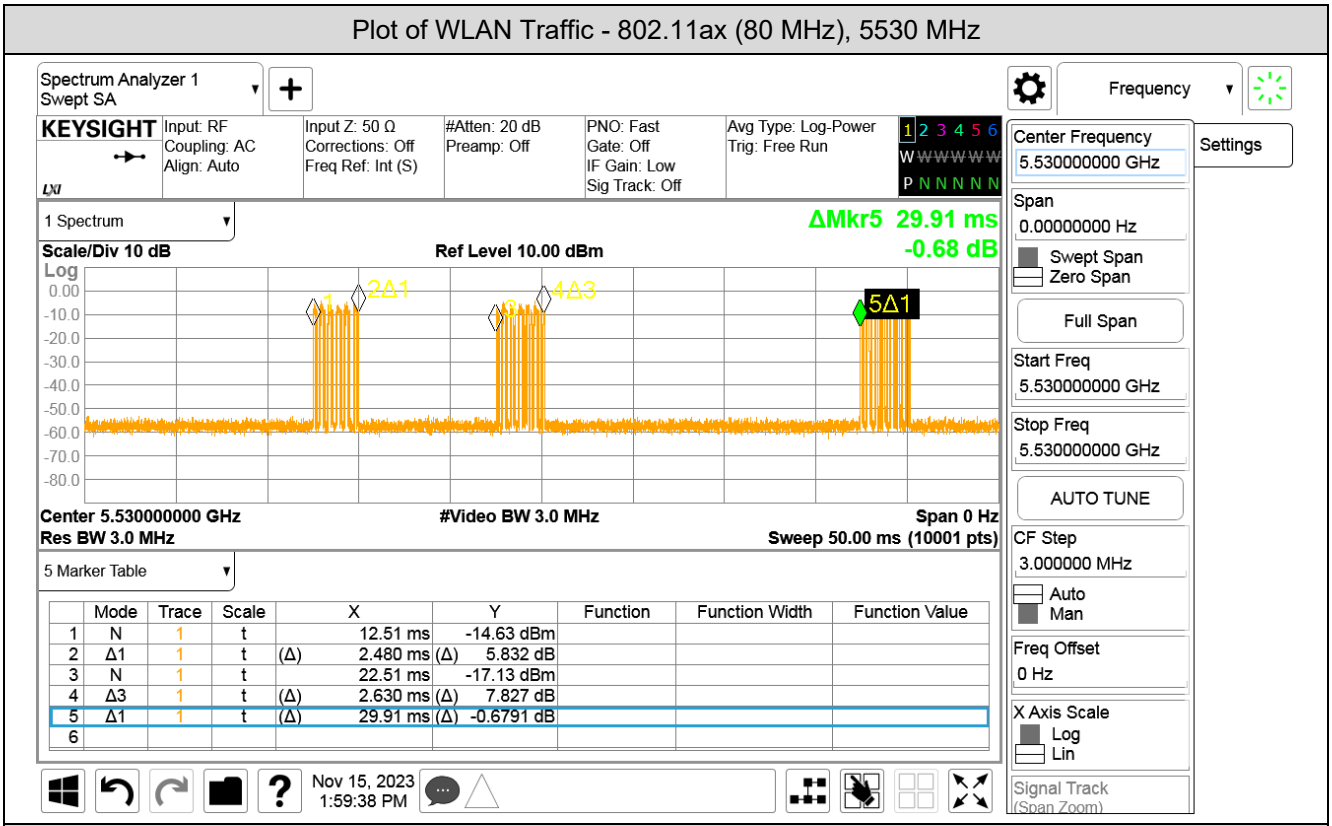
Plot of WLAN Traffic - 802.11ax (20 MHz), 5500 MHz



Plot of WLAN Traffic - 802.11ax (40 MHz), 5510 MHz



Plot of WLAN Traffic - 802.11ax (80 MHz), 5530 MHz



Plot of WLAN Traffic - 802.11ax (160 MHz), 5570 MHz

5. UNII Detection Bandwidth

5.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.

The generating equipment is configured as shown in the radiated Test Setup above.

During the U-NII Detection Bandwidth detection test, radar type 0 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic. The EUT is set up as a standalone device (no associated Client and no traffic). 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 F_H. 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 F_L. UNII Detection Bandwidth = F_H - F_L.

5.2. Test Requirement

UNII Detection Bandwidth is minimum 100% of the 99% power bandwidth. 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.

5.3. Test Result of UNII Detection Bandwidth

802.11ax (20 MHz), 5500 MHz											
Frequency (MHz)		1	2	3	4	5	6	7	8	9	10
F_L	5490	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5500	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
F_H	5510	v	v	v	v	v	v	v	v	v	v
Detection Bandwidth = F_H - F_L = 20 MHz											
UNII Detection Bandwidth Min. Limit = 19.780 MHz											

802.11ax (40 MHz), 5510 MHz											
Frequency (MHz)		1	2	3	4	5	6	7	8	9	10
F_L	5490	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5500	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
	5515	v	v	v	v	v	v	v	v	v	v
	5520	v	v	v	v	v	v	v	v	v	v
	5525	v	v	v	v	v	v	v	v	v	v
F_H	5530	v	v	v	v	v	v	v	v	v	v
Detection Bandwidth = F_H - F_L = 40 MHz											
UNII Detection Bandwidth Min. Limit = 38.121 MHz											

802.11ax (80 MHz), 5530 MHz											
Frequency (MHz)		1	2	3	4	5	6	7	8	9	10
F_L	5490	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5500	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
	5515	v	v	v	v	v	v	v	v	v	v
	5520	v	v	v	v	v	v	v	v	v	v
	5525	v	v	v	v	v	v	v	v	v	v
	5530	v	v	v	v	v	v	v	v	v	v
	5535	v	v	v	v	v	v	v	v	v	v
	5540	v	v	v	v	v	v	v	v	v	v
	5545	v	v	v	v	v	v	v	v	v	v
	5550	v	v	v	v	v	v	v	v	v	v
	5555	v	v	v	v	v	v	v	v	v	v
	5560	v	v	v	v	v	v	v	v	v	v
	5565	v	v	v	v	v	v	v	v	v	v
F_H	5570	v	v	v	v	v	v	v	v	v	v
Detection Bandwidth = F_H - F_L = 80 MHz											
UNII Detection Bandwidth Min. Limit = 77.522 MHz											

802.11ax (160 MHz), 5570 MHz											
Frequency (MHz)		1	2	3	4	5	6	7	8	9	10
F_L	5490	v	v	v	v	v	v	v	v	v	v
	5495	v	v	v	v	v	v	v	v	v	v
	5500	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
	5515	v	v	v	v	v	v	v	v	v	v
	5520	v	v	v	v	v	v	v	v	v	v
	5525	v	v	v	v	v	v	v	v	v	v
	5530	v	v	v	v	v	v	v	v	v	v
	5535	v	v	v	v	v	v	v	v	v	v
	5540	v	v	v	v	v	v	v	v	v	v
	5545	v	v	v	v	v	v	v	v	v	v
	5550	v	v	v	v	v	v	v	v	v	v
	5555	v	v	v	v	v	v	v	v	v	v
	5560	v	v	v	v	v	v	v	v	v	v
	5565	v	v	v	v	v	v	v	v	v	v
	5570	v	v	v	v	v	v	v	v	v	v
	5575	v	v	v	v	v	v	v	v	v	v
	5580	v	v	v	v	v	v	v	v	v	v
	5585	v	v	v	v	v	v	v	v	v	v
	5590	v	v	v	v	v	v	v	v	v	v
	5595	v	v	v	v	v	v	v	v	v	v
	5600	v	v	v	v	v	v	v	v	v	v
	5605	v	v	v	v	v	v	v	v	v	v
	5610	v	v	v	v	v	v	v	v	v	v
	5615	v	v	v	v	v	v	v	v	v	v
	5620	v	v	v	v	v	v	v	v	v	v
	5625	v	v	v	v	v	v	v	v	v	v
	5630	v	v	v	v	v	v	v	v	v	v
	5625	v	v	v	v	v	v	v	v	v	v
	5635	v	v	v	v	v	v	v	v	v	v
	5640	v	v	v	v	v	v	v	v	v	v
	5645	v	v	v	v	v	v	v	v	v	v
F_H	5650	v	v	v	v	v	v	v	v	v	v
Detection Bandwidth = F_H - F_L = 160 MHz											
UNII Detection Bandwidth Min. Limit = 157.282 MHz											

6. Initial Channel Availability Check Time

6.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.

The U-NII device is powered on and instructed to operate at test channel frequency 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 test channel frequency 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.

6.2. 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.

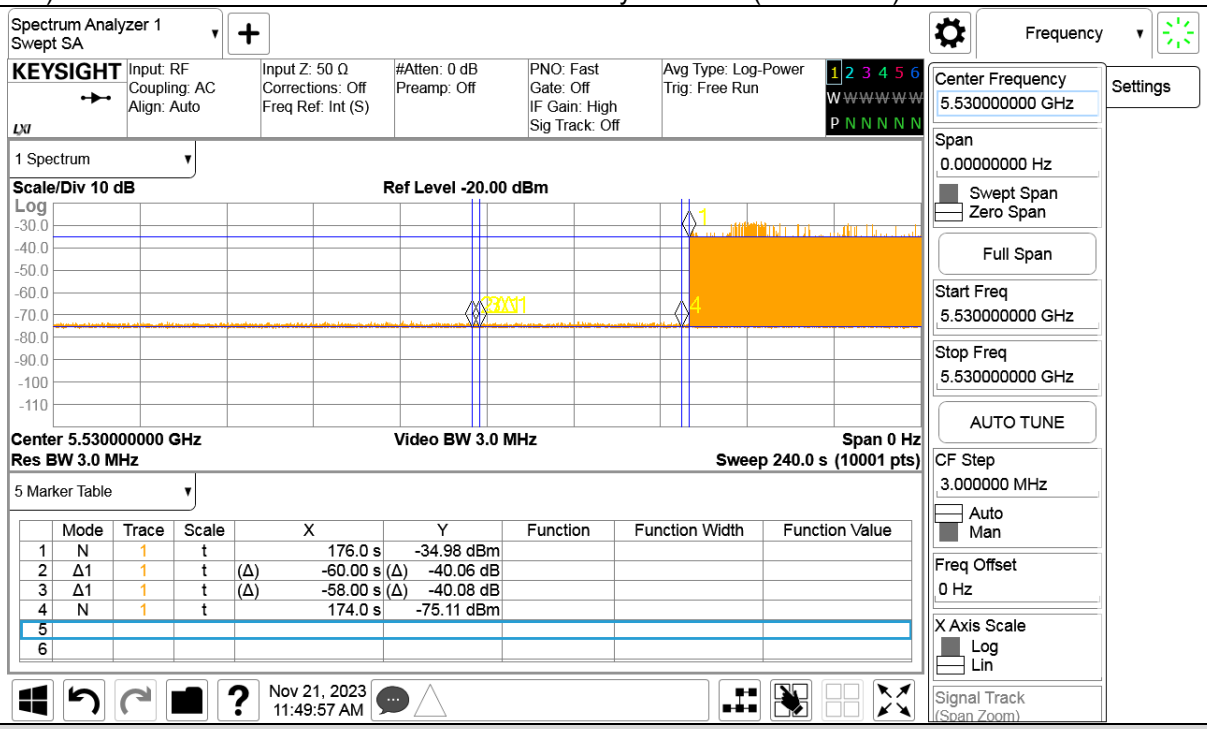
6.3. Test Result of Initial Channel Availability Check Time

802.11ax (20 MHz), 5500 MHz
The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (115.90 sec). The initial power up time of the EUT is indicated by Marker 1 (175.90 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (175.90 sec)

802.11ax (40 MHz), 5510 MHz
The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (115.70 sec). The initial power up time of the EUT is indicated by Marker 1 (175.70 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (175.70 sec)

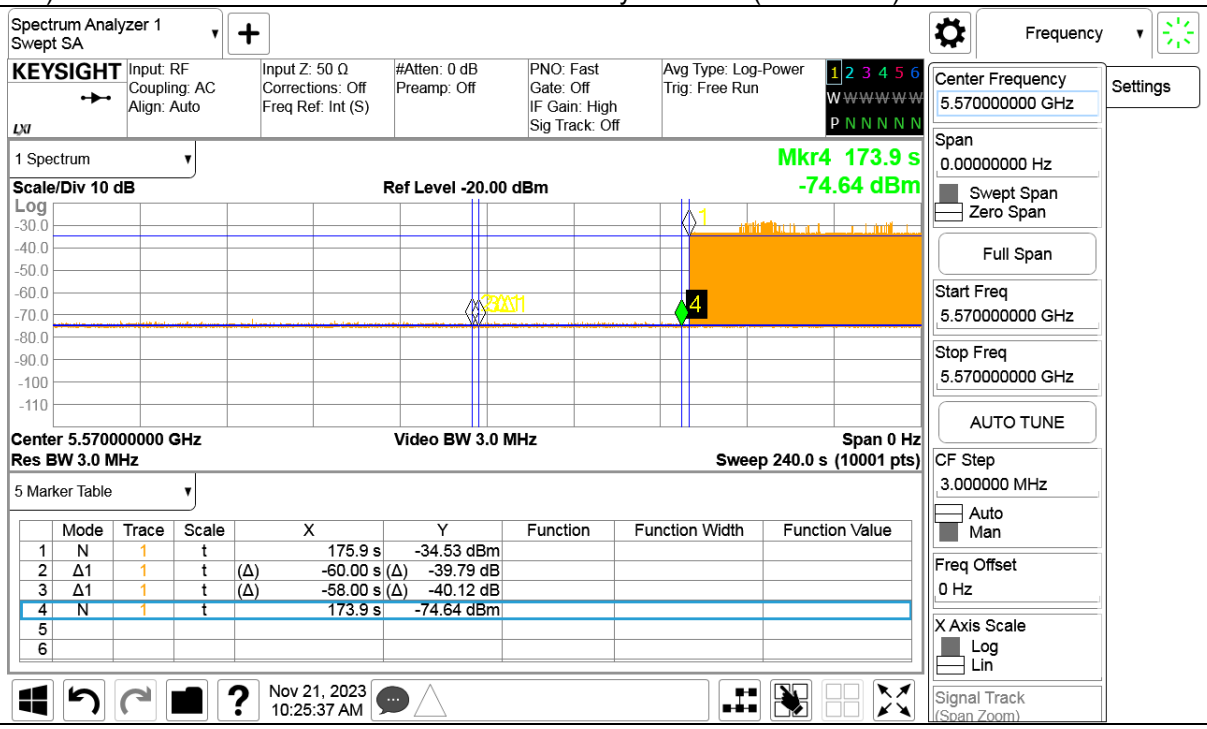
802.11ax (80 MHz), 5530 MHz

The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (116.00 sec). The initial power up time of the EUT is indicated by Marker 1 (176.00 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (176.00 sec)



802.11ax (160 MHz), 5570 MHz

The EUT does not transmit any beacon or data transmission until at least 1 minute after the completion of the power-on cycle (115.90 sec). The initial power up time of the EUT is indicated by Marker 1 (175.90 sec) – CAC (60 sec). Initial beacons/data transmission is indicated by Marker 1 (175.90 sec)



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

7.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.

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 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 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 test channel frequency will continue for 2.5 minutes after the radar Burst, Verify that during the 2.5 minute measurement window no EUT transmissions occurred at test channel frequency.

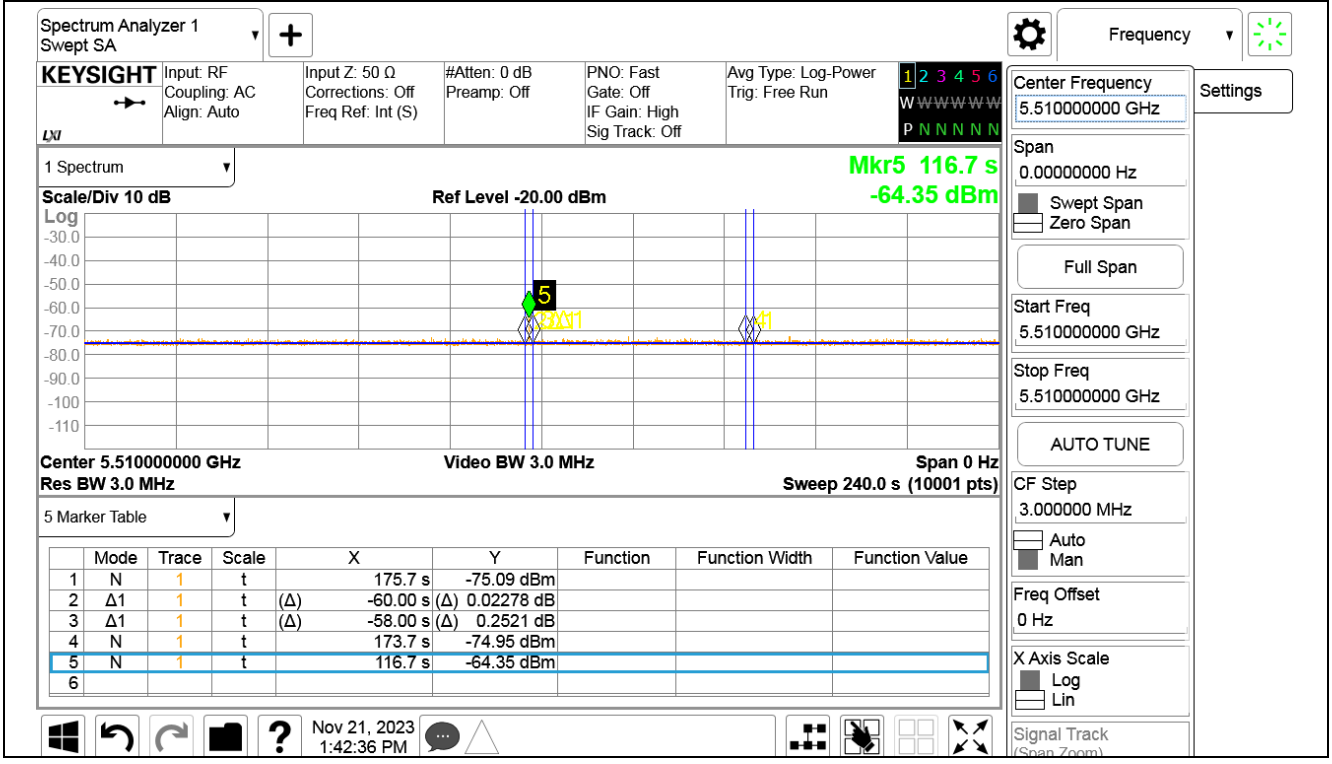
7.2. Test Requirement

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.

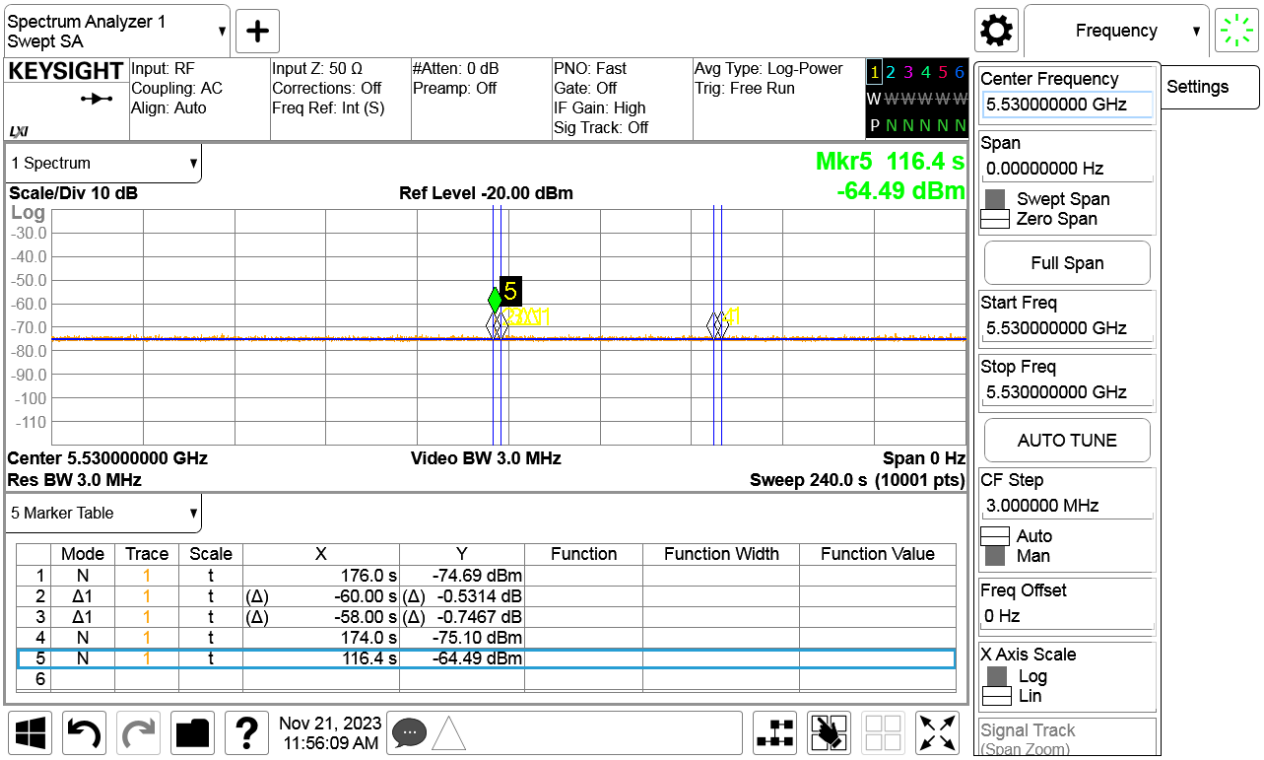
7.3. Test Result of Radar Burst at the Beginning of the Channel Availability Check Time

802.11ax (20 MHz), 5500 MHz

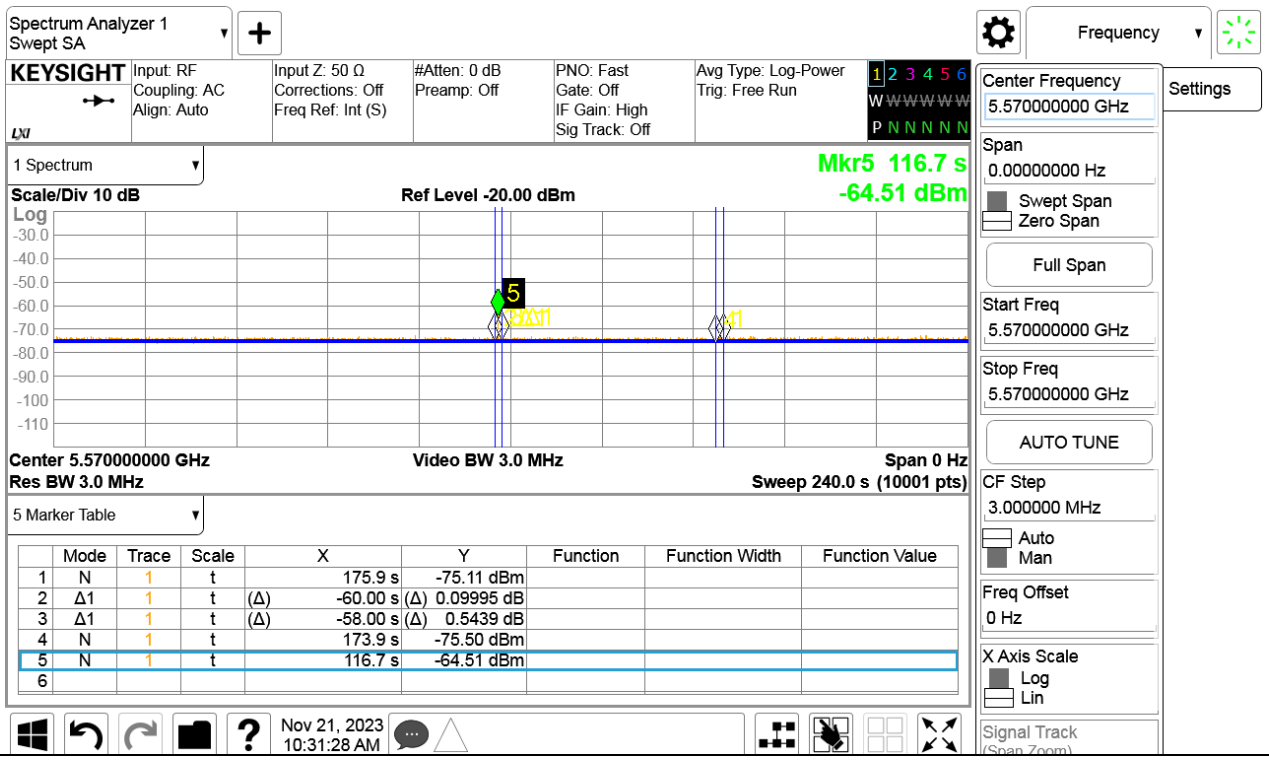
802.11ax (40 MHz), 5510 MHz



802.11ax (80 MHz), 5530 MHz



802.11ax (160 MHz), 5570 MHz



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

8.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.

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 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 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 test channel frequency will continue for 2.5 minutes after the radar Burst has been generated.

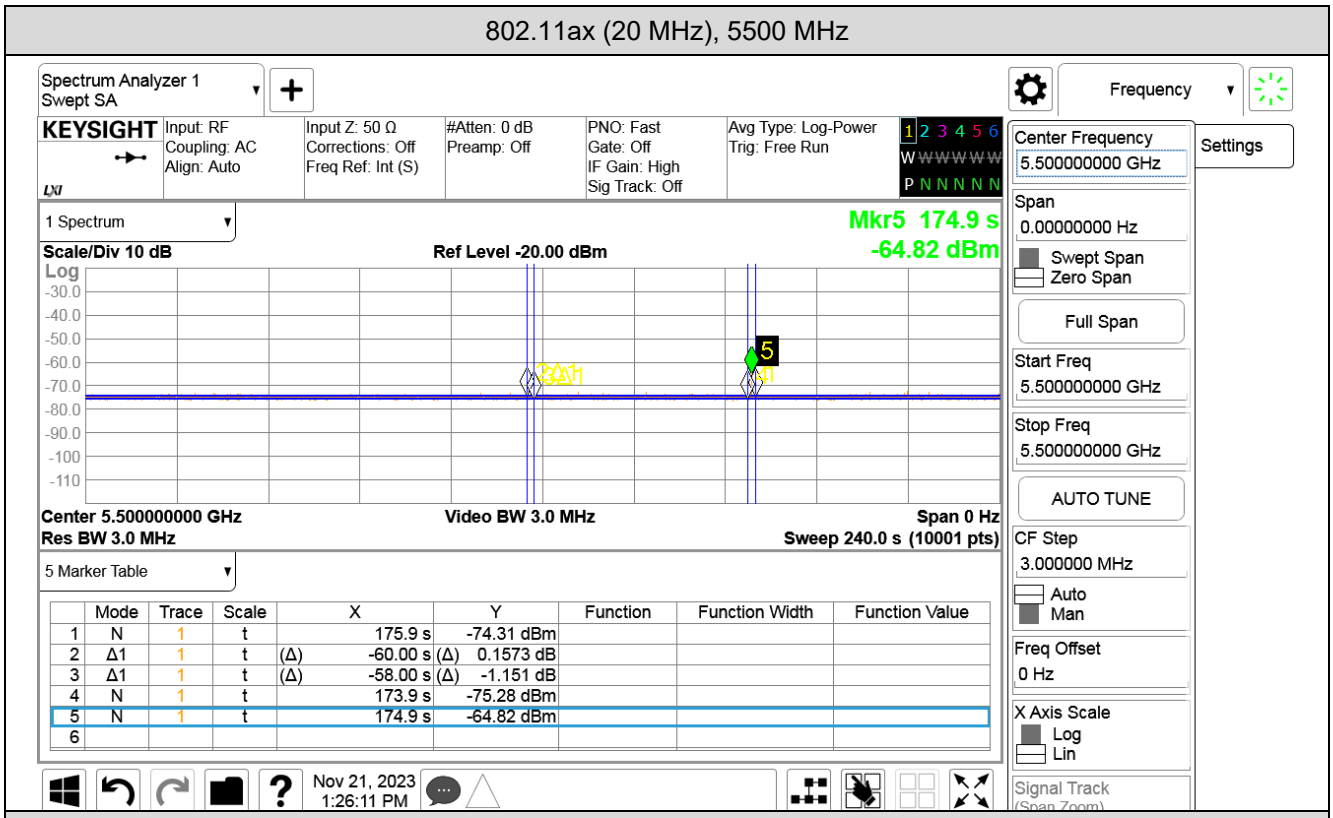
Verify that during the 2.5 minute measurement window no UUT transmissions occurred at test channel frequency.

8.2. Test Requirement

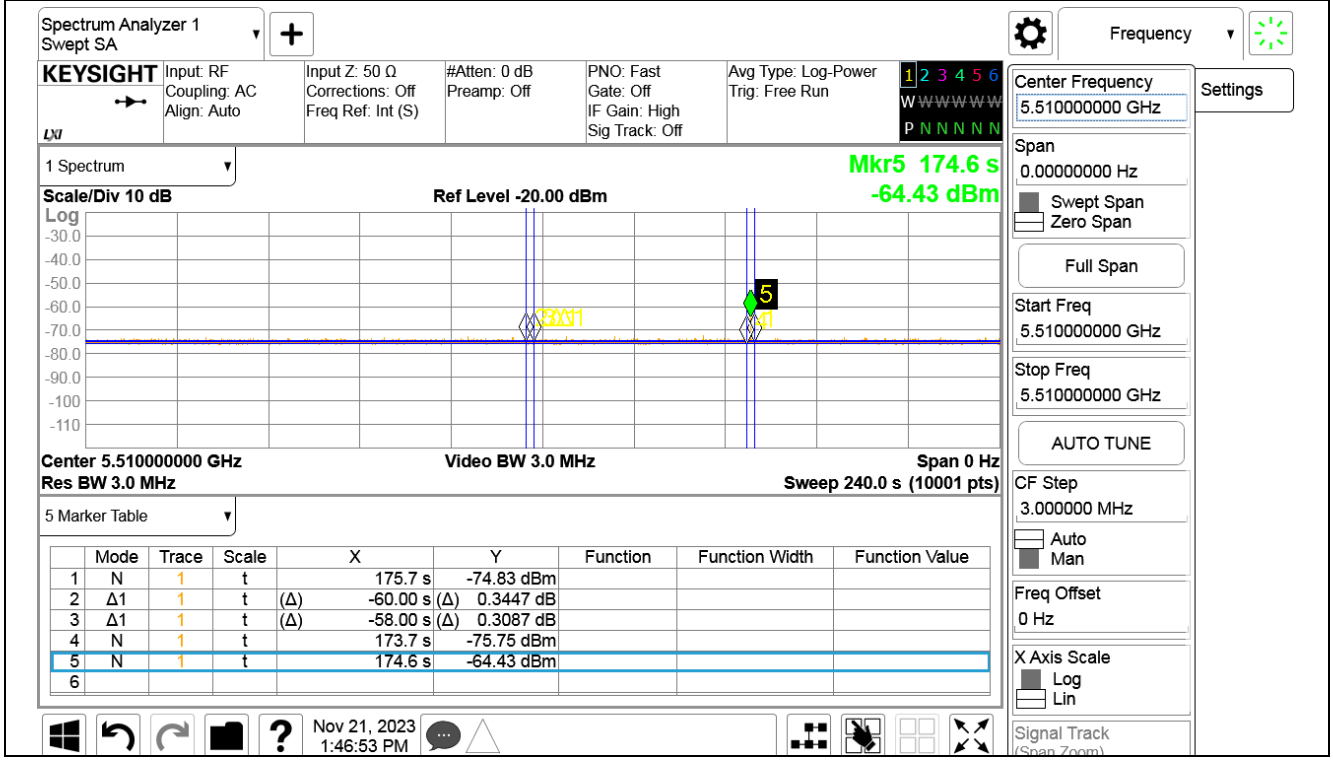
In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC that channel.

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

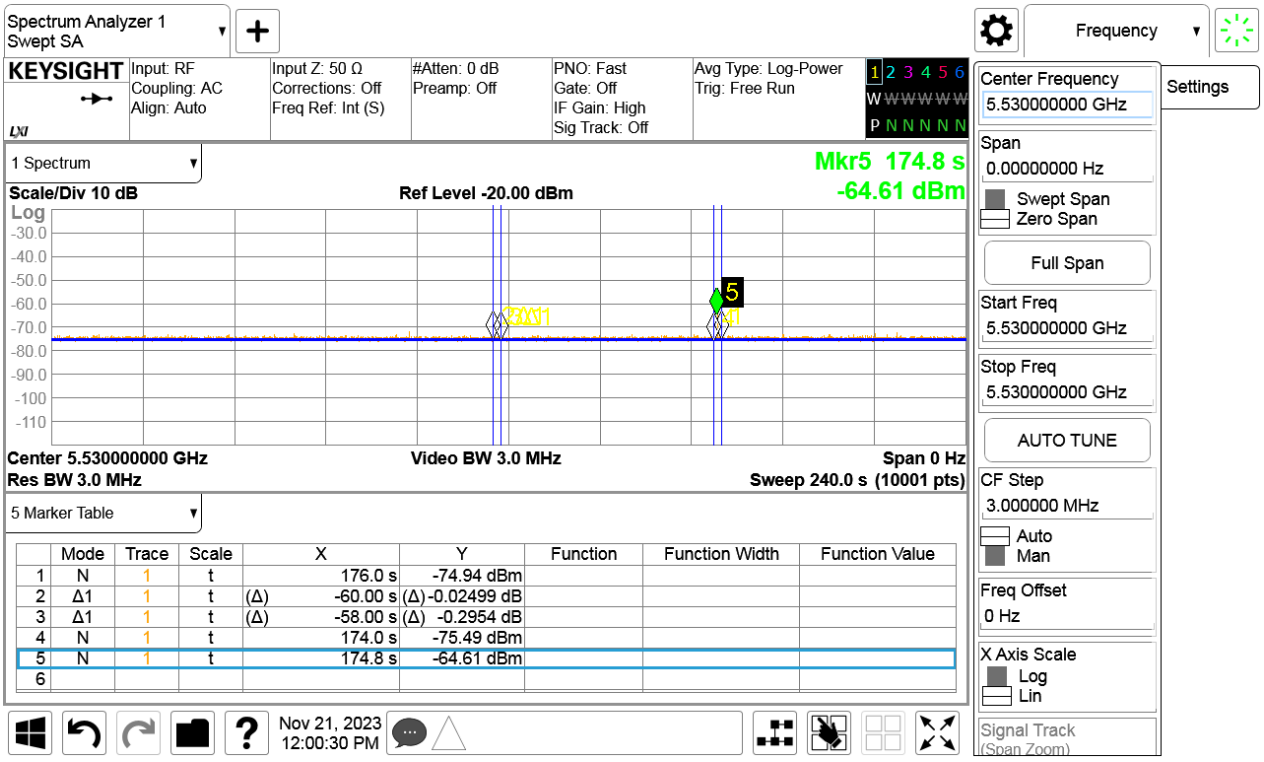
802.11ax (20 MHz), 5500 MHz



802.11ax (40 MHz), 5510 MHz



802.11ax (80 MHz), 5530 MHz



802.11ax (160 MHz), 5570 MHz

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

9.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.

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 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 test channel frequency. 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.

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 limit 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.

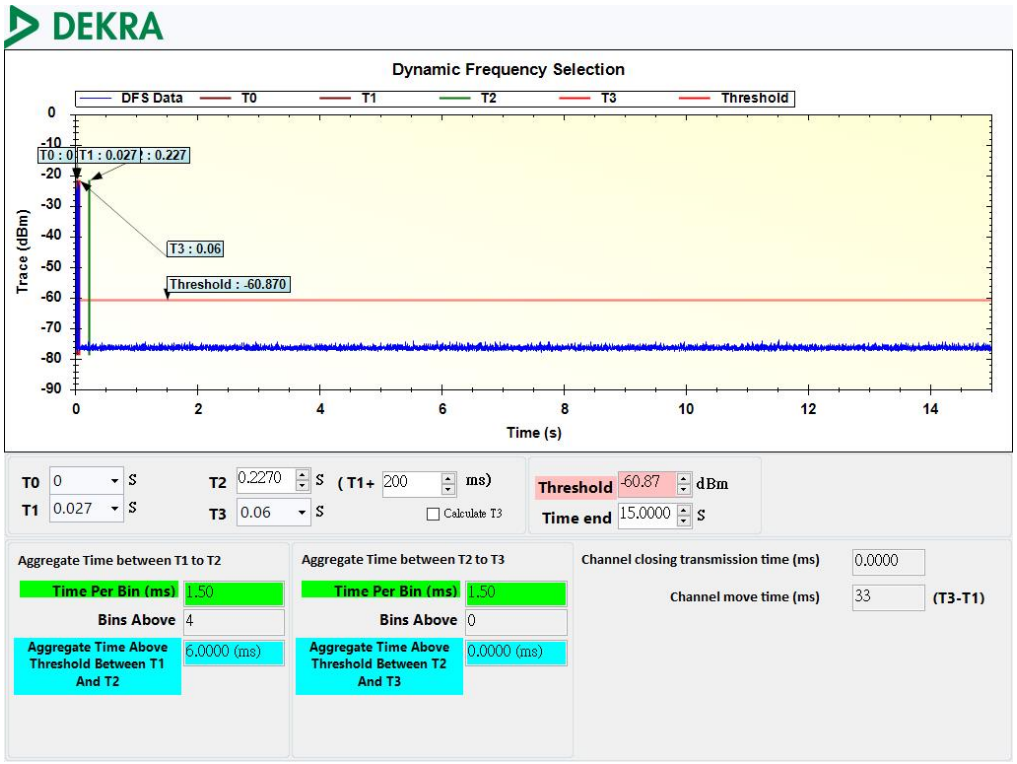
9.2. Test Requirement

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

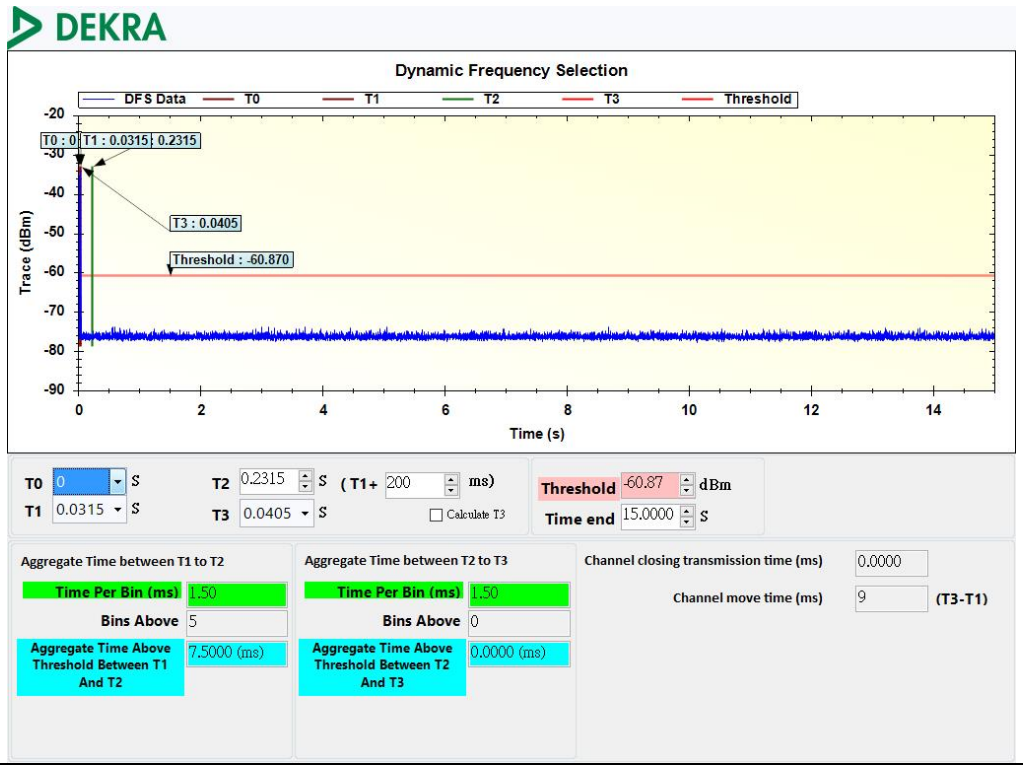
9.3. Test Result of Channel Move Time and Channel Closing Transmission Time

Modulation	Frequency (MHz)	Channel Closing Transmission (Sec.)	Channel Move Time (Sec.)	Limit (sec.)	
				Channel Closing Transmission	Channel Move Time
802.11ax (20 MHz)	5500	0.000	0.033	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period	10
802.11ax (40 MHz)	5510	0.000	0.009	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period	10
802.11ax (80 MHz)	5530	0.000	0.138	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period	10
802.11ax (160 MHz)	5570	0.015	0.252	200 milliseconds + approx. 60 milliseconds over remaining 10 seconds period	10
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.					

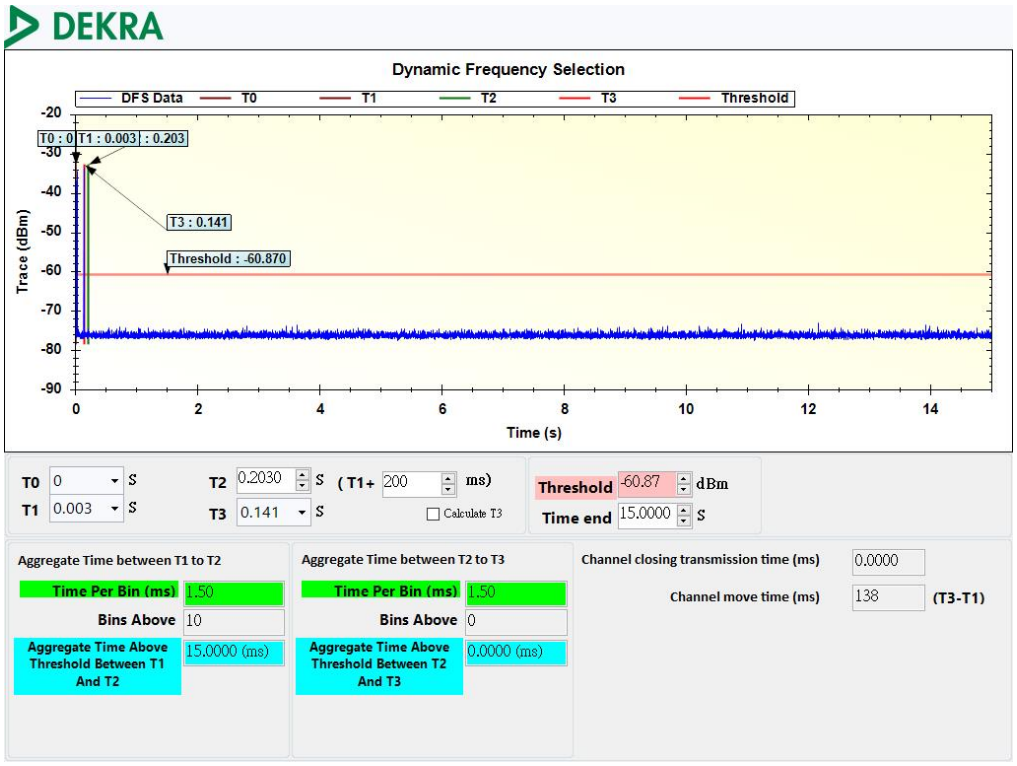
Channel Move Time and Channel Closing Transmission Time - 802.11ax (20 MHz), 5500 MHz



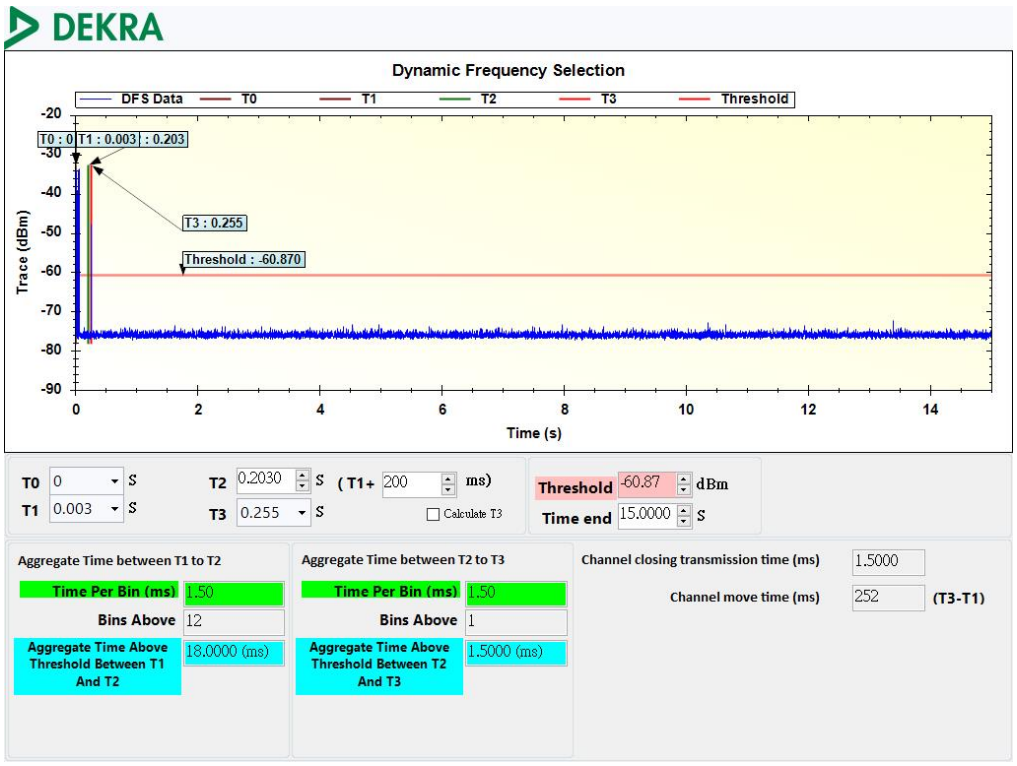
Channel Move Time and Channel Closing Transmission Time - 802.11ax (40 MHz), 5510 MHz



Channel Move Time and Channel Closing Transmission Time - 802.11ax (80 MHz), 5530 MHz



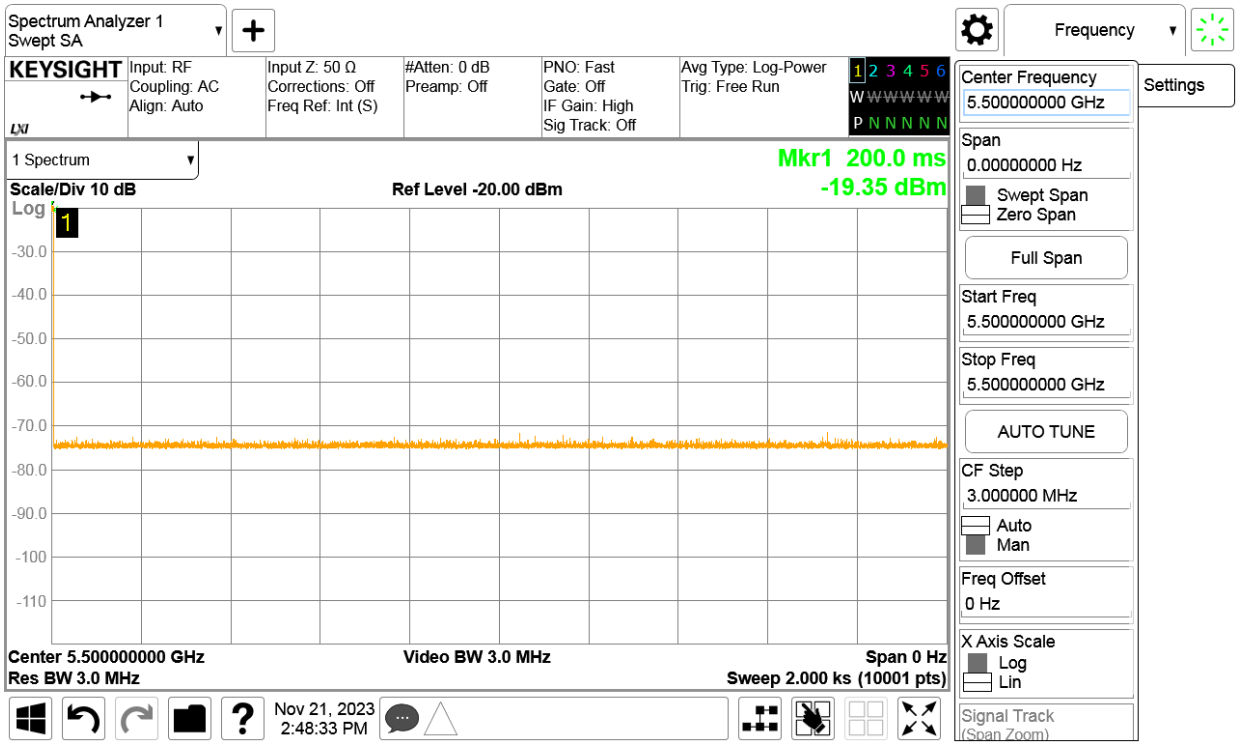
Channel Move Time and Channel Closing Transmission Time - 802.11ax (160 MHz), 5570 MHz



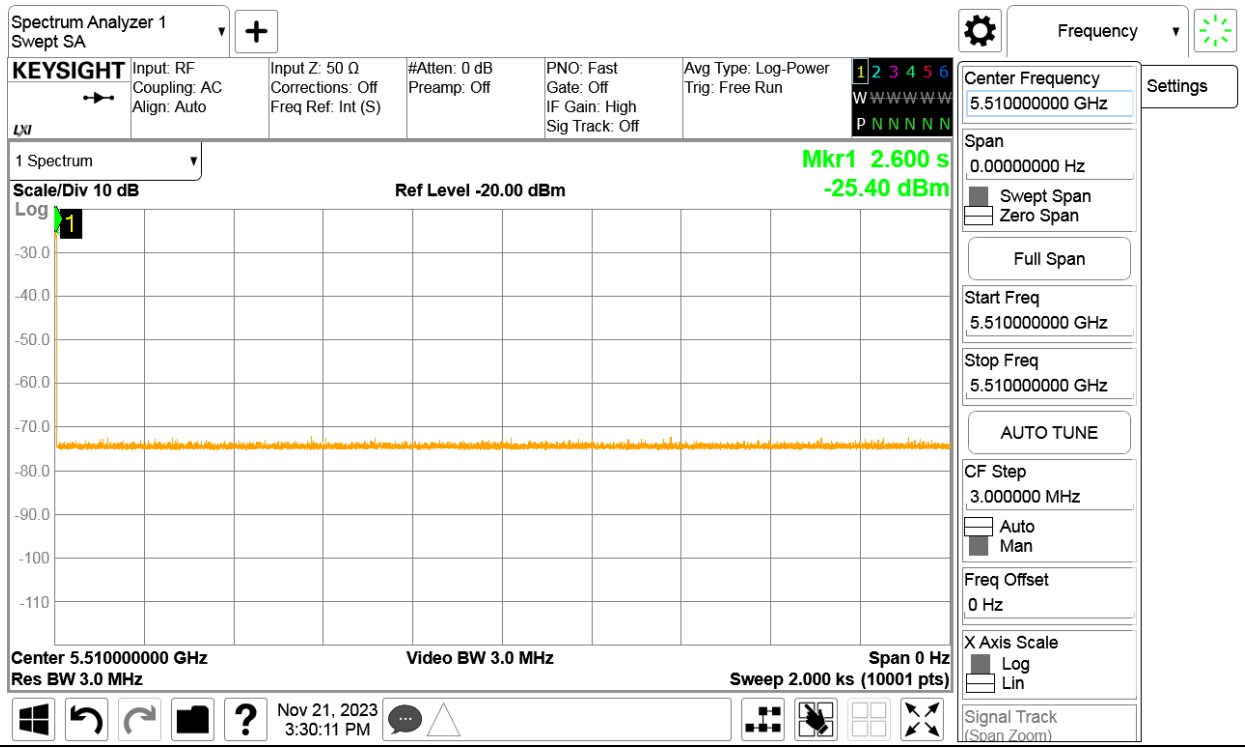
9.4. Test Result of Non-Occupancy Period

Non-Occupancy Period				
Modulation	Frequency (MHz)	Test Result (Minutes)	Limit (Minutes)	Result
802.11ax (20 MHz)	5500	> 30	> 30	Pass
802.11ax (40 MHz)	5510	> 30	> 30	Pass
802.11ax (80 MHz)	5530	> 30	> 30	Pass
802.11ax (160 MHz)	5570	> 30	> 30	Pass
No EUT transmissions were observed on the test channel during 30 minutes observation time.				

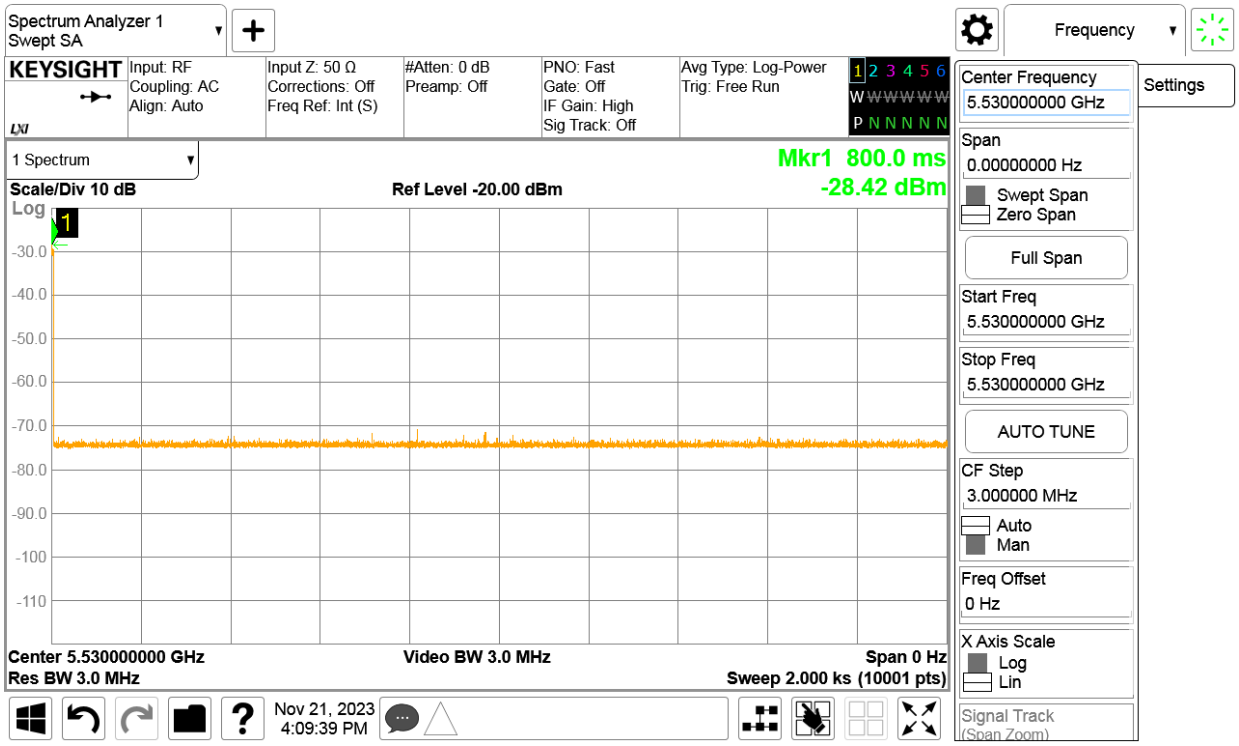
Non-Occupancy Period - 802.11ax (20 MHz), 5500 MHz



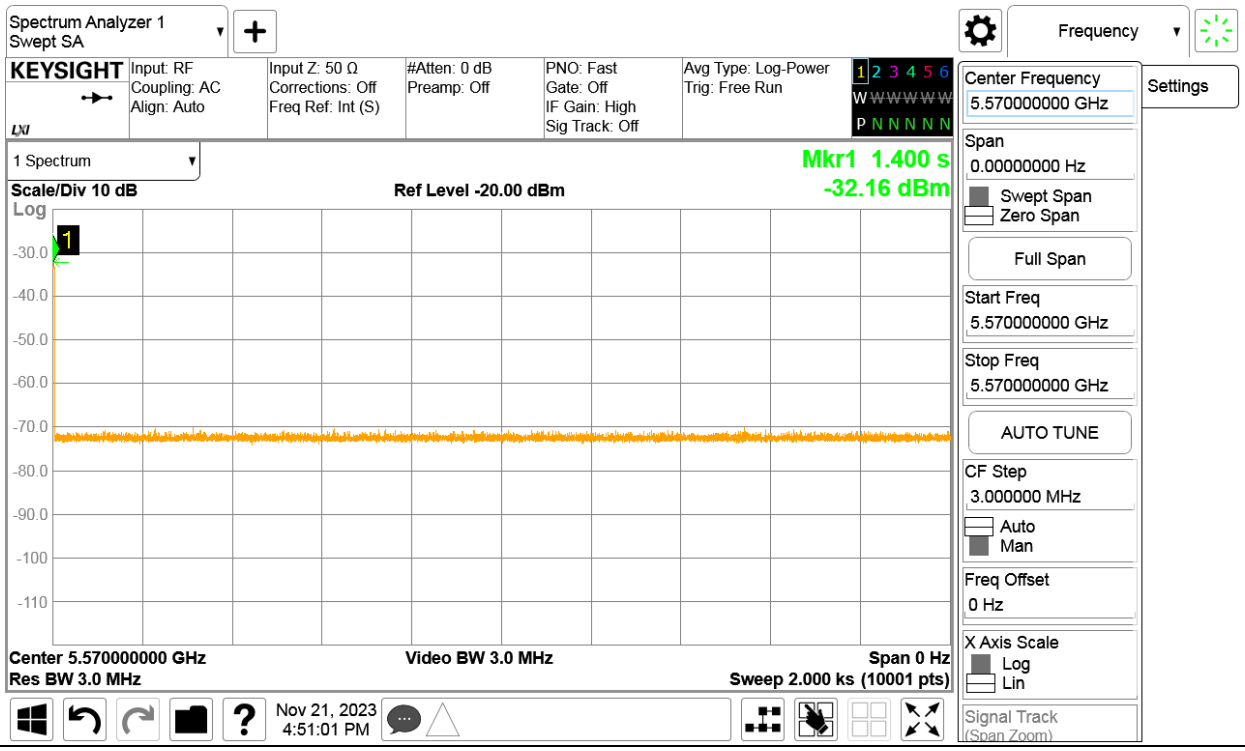
Non-Occupancy Period - 802.11ax (40 MHz), 5510 MHz



Non-Occupancy Period - 802.11ax (80 MHz), 5530 MHz



Non-Occupancy Period - 802.11ax (160 MHz), 5570 MHz



10. Statistical Performance Check

10.1. Test Procedure

The EUT was tested according to U-NII test procedure of KDB905462 D02.
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 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 test channel frequency.
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. 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.

10.2. 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:

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

10.3. Test Result of Statistical Performance Check

Radar Statistical Performance

802.11ax (20 MHz), 5500 MHz				
Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	30	100.00	60	Pass
Type D.4.2	30	96.67	60	Pass
Type D.4.3	30	80.00	60	Pass
Type D.4.4	30	93.33	60	Pass
Type D.4.5	30	93.33	60	Pass
Type D.4.6	30	96.67	60	Pass
Note: The aggregate should be 80 percent that the average of the percentage of successful detections of Short Pulse Radar Types 1-4.				

802.11ax (20 MHz), 5500 MHz						
	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	x	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	x	v
9	v	x	x	v	v	v
10	v	v	x	v	v	v
11	v	v	x	v	v	v
12	v	v	v	v	v	v
13	v	v	v	v	v	v
14	v	v	v	v	v	v
15	v	v	v	v	x	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	v	v	v
21	v	v	v	v	v	v
22	v	v	v	x	v	v
23	v	v	v	x	v	v
24	v	v	x	v	v	v
25	v	v	x	v	v	x
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	30	29	24	28	28	29
% of Successful	100.00	96.67	80.00	93.33	93.33	96.67
	92.50					

802.11ax (20 MHz), 5500 MHz					
Trial 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	838	63	52794
2	Type 1	1	858	62	53196
3	Type 1	1	798	67	53466
4	Type 1	1	698	76	53048
5	Type 1	1	758	70	53060
6	Type 1	1	558	95	53010
7	Type 1	1	618	86	53148
8	Type 1	1	3066	18	55188
9	Type 1	1	778	68	52904
10	Type 1	1	678	78	52884
11	Type 1	1	818	65	53170
12	Type 1	1	918	58	53244
13	Type 1	1	638	83	52954
14	Type 1	1	598	89	53222
15	Type 1	1	2929	19	55651
16	Type 1	1	1604	33	52932
17	Type 1	1	2694	20	53880
18	Type 1	1	3021	18	54378
19	Type 1	1	2048	26	53248
20	Type 1	1	1196	45	53820
21	Type 1	1	2954	18	53172
22	Type 1	1	958	56	53648
23	Type 1	1	1610	33	53130
24	Type 1	1	656	81	53136
25	Type 1	1	1562	34	53108
26	Type 1	1	2183	25	54575
27	Type 1	1	1753	31	54343
28	Type 1	1	1397	38	53086
29	Type 1	1	1816	30	54480

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 2	2.6	214	25	5350
1	Type 2	5	223	29	6467
2	Type 2	3.1	175	26	4550
3	Type 2	2.5	172	25	4300
4	Type 2	2.3	204	25	5100
5	Type 2	4.9	179	29	5191
6	Type 2	2.3	205	25	5125
7	Type 2	1.4	229	23	5267
8	Type 2	3.1	154	26	4004
9	Type 2	3.2	176	26	4576
10	Type 2	2.4	162	25	4050
11	Type 2	1.9	207	24	4968
12	Type 2	4.9	167	29	4843
13	Type 2	4.9	227	29	6583
14	Type 2	1.1	206	23	4738
15	Type 2	2.2	218	25	5450
16	Type 2	3.5	177	27	4779
17	Type 2	4.2	187	28	5236
18	Type 2	1.4	182	23	4186
19	Type 2	4.1	189	28	5292
20	Type 2	4.2	178	28	4984
21	Type 2	2.7	216	25	5400
22	Type 2	4.3	220	28	6160
23	Type 2	3.2	161	26	4186
24	Type 2	3.4	203	27	5481
25	Type 2	3.8	197	27	5319
26	Type 2	1.2	180	23	4140
27	Type 2	3.5	210	27	5670
28	Type 2	4.3	183	28	5124
29	Type 2	2.3	224	25	5600

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 3	7.6	246	17	4182
1	Type 3	10	384	18	6912
2	Type 3	8.1	351	17	5967
3	Type 3	7.5	391	17	6647
4	Type 3	7.3	217	16	3472
5	Type 3	9.9	429	18	7722
6	Type 3	7.3	443	16	7088
7	Type 3	6.4	470	16	7520
8	Type 3	8.1	218	17	3706
9	Type 3	8.2	335	17	5695
10	Type 3	7.4	405	17	6885
11	Type 3	6.9	469	16	7504
12	Type 3	9.9	402	18	7236
13	Type 3	9.9	485	18	8730
14	Type 3	6.1	435	16	6960
15	Type 3	7.2	366	16	5856
16	Type 3	8.5	412	17	7004
17	Type 3	9.2	324	18	5832
18	Type 3	6.4	500	16	8000
19	Type 3	9.1	330	18	5940
20	Type 3	9.2	254	18	4572
21	Type 3	7.7	264	17	4488
22	Type 3	9.3	363	18	6534
23	Type 3	8.2	331	17	5627
24	Type 3	8.4	262	17	4454
25	Type 3	8.8	260	18	4680
26	Type 3	6.2	418	16	6688
27	Type 3	8.5	398	17	6766
28	Type 3	9.3	286	18	5148
29	Type 3	7.3	436	17	7412

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 4	14.6	246	14	3444
1	Type 4	19.8	384	16	6144
2	Type 4	15.8	351	14	4914
3	Type 4	14.5	391	13	5083
4	Type 4	13.9	217	13	2821
5	Type 4	19.7	429	16	6864
6	Type 4	13.9	443	13	5759
7	Type 4	12	470	12	5640
8	Type 4	15.7	218	14	3052
9	Type 4	15.9	335	14	4690
10	Type 4	14.1	405	13	5265
11	Type 4	13.1	469	13	6097
12	Type 4	19.7	402	16	6432
13	Type 4	19.8	485	16	7760
14	Type 4	11.4	435	12	5220
15	Type 4	13.7	366	13	4758
16	Type 4	16.6	412	15	6180
17	Type 4	18.2	324	16	5184
18	Type 4	12	500	12	6000
19	Type 4	17.9	330	15	4950
20	Type 4	18.2	254	15	3810
21	Type 4	14.8	264	14	3696
22	Type 4	18.4	363	16	5808
23	Type 4	16	331	14	4634
24	Type 4	16.5	262	15	3930
25	Type 4	17.3	260	15	3900
26	Type 4	11.6	418	12	5016
27	Type 4	16.6	398	15	5970
28	Type 4	18.3	286	16	4576
29	Type 4	14	436	13	5668

Trial Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	13	0.923077	12	5.5
1	Type 5	20	0.6	12	5.5
2	Type 5	14	0.857143	12	5.5
3	Type 5	13	0.923077	12	5.5
4	Type 5	12	1	12	5.5
5	Type 5	20	0.6	12	5.5
6	Type 5	12	1	12	5.5
7	Type 5	9	1.333333	12	5.5
8	Type 5	14	0.857143	12	5.5
9	Type 5	15	0.8	12	5.5
10	Type 5	12	1	12	5.494
11	Type 5	11	1.090909	12	5.493
12	Type 5	20	0.6	12	5.498
13	Type 5	20	0.6	12	5.498
14	Type 5	8	1.5	12	5.492
15	Type 5	11	1.090909	12	5.494
16	Type 5	16	0.75	12	5.496
17	Type 5	18	0.666667	12	5.497
18	Type 5	9	1.333333	12	5.492
19	Type 5	17	0.705882	12	5.497
20	Type 5	18	0.666667	12	5.503
21	Type 5	13	0.923077	12	5.506
22	Type 5	18	0.666667	12	5.503
23	Type 5	15	0.8	12	5.505
24	Type 5	15	0.8	12	5.504
25	Type 5	17	0.705882	12	5.504
26	Type 5	8	1.5	12	5.508
27	Type 5	16	0.75	12	5.504
28	Type 5	18	0.666667	12	5.503
29	Type 5	12	1	12	5.506

Trial 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	8
1	Type 6	1	333.3	9	0.3333	300	7
2	Type 6	1	333.3	9	0.3333	300	7
3	Type 6	1	333.3	9	0.3333	300	4
4	Type 6	1	333.3	9	0.3333	300	5
5	Type 6	1	333.3	9	0.3333	300	5
6	Type 6	1	333.3	9	0.3333	300	3
7	Type 6	1	333.3	9	0.3333	300	4
8	Type 6	1	333.3	9	0.3333	300	4
9	Type 6	1	333.3	9	0.3333	300	2
10	Type 6	1	333.3	9	0.3333	300	6
11	Type 6	1	333.3	9	0.3333	300	4
12	Type 6	1	333.3	9	0.3333	300	4
13	Type 6	1	333.3	9	0.3333	300	4
14	Type 6	1	333.3	9	0.3333	300	5
15	Type 6	1	333.3	9	0.3333	300	2
16	Type 6	1	333.3	9	0.3333	300	8
17	Type 6	1	333.3	9	0.3333	300	6
18	Type 6	1	333.3	9	0.3333	300	4
19	Type 6	1	333.3	9	0.3333	300	6
20	Type 6	1	333.3	9	0.3333	300	6
21	Type 6	1	333.3	9	0.3333	300	4
22	Type 6	1	333.3	9	0.3333	300	7
23	Type 6	1	333.3	9	0.3333	300	8
24	Type 6	1	333.3	9	0.3333	300	2
25	Type 6	1	333.3	9	0.3333	300	3
26	Type 6	1	333.3	9	0.3333	300	2
27	Type 6	1	333.3	9	0.3333	300	5
28	Type 6	1	333.3	9	0.3333	300	4
29	Type 6	1	333.3	9	0.3333	300	4

802.11ax (40 MHz), 5510 MHz				
Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	30	100.00	60	Pass
Type D.4.2	30	96.67	60	Pass
Type D.4.3	30	86.67	60	Pass
Type D.4.4	30	93.33	60	Pass
Type D.4.5	30	96.67	60	Pass
Type D.4.6	30	100.00	60	Pass
Note: The aggregate should be 80 percent that the average of the percentage of successful detections of Short Pulse Radar Types 1-4.				

802.11ax (40 MHz), 5510 MHz						
	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	v	v	v	v	v
7	v	v	x	v	v	v
8	v	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	v
12	v	v	v	v	v	v
13	v	v	v	v	v	v
14	v	v	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	x	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	v	v	v	v	v
29	v	v	v	v	v	v
30	v	v	v	v	v	v
Number of Successful	30	29	26	28	29	30
% of Successful	100.00	96.67	86.67	93.33	96.67	100.00
	94.17					

802.11ax (40 MHz), 5510 MHz					
Trial 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	838	63	52794
2	Type 1	1	858	62	53196
3	Type 1	1	798	67	53466
4	Type 1	1	698	76	53048
5	Type 1	1	758	70	53060
6	Type 1	1	558	95	53010
7	Type 1	1	618	86	53148
8	Type 1	1	3066	18	55188
9	Type 1	1	778	68	52904
10	Type 1	1	678	78	52884
11	Type 1	1	818	65	53170
12	Type 1	1	918	58	53244
13	Type 1	1	638	83	52954
14	Type 1	1	598	89	53222
15	Type 1	1	2929	19	55651
16	Type 1	1	1604	33	52932
17	Type 1	1	2694	20	53880
18	Type 1	1	3021	18	54378
19	Type 1	1	2048	26	53248
20	Type 1	1	1196	45	53820
21	Type 1	1	2954	18	53172
22	Type 1	1	958	56	53648
23	Type 1	1	1610	33	53130
24	Type 1	1	656	81	53136
25	Type 1	1	1562	34	53108
26	Type 1	1	2183	25	54575
27	Type 1	1	1753	31	54343
28	Type 1	1	1397	38	53086
29	Type 1	1	1816	30	54480

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 2	2.6	214	25	5350
1	Type 2	5	223	29	6467
2	Type 2	3.1	175	26	4550
3	Type 2	2.5	172	25	4300
4	Type 2	2.3	204	25	5100
5	Type 2	4.9	179	29	5191
6	Type 2	2.3	205	25	5125
7	Type 2	1.4	229	23	5267
8	Type 2	3.1	154	26	4004
9	Type 2	3.2	176	26	4576
10	Type 2	2.4	162	25	4050
11	Type 2	1.9	207	24	4968
12	Type 2	4.9	167	29	4843
13	Type 2	4.9	227	29	6583
14	Type 2	1.1	206	23	4738
15	Type 2	2.2	218	25	5450
16	Type 2	3.5	177	27	4779
17	Type 2	4.2	187	28	5236
18	Type 2	1.4	182	23	4186
19	Type 2	4.1	189	28	5292
20	Type 2	4.2	178	28	4984
21	Type 2	2.7	216	25	5400
22	Type 2	4.3	220	28	6160
23	Type 2	3.2	161	26	4186
24	Type 2	3.4	203	27	5481
25	Type 2	3.8	197	27	5319
26	Type 2	1.2	180	23	4140
27	Type 2	3.5	210	27	5670
28	Type 2	4.3	183	28	5124
29	Type 2	2.3	224	25	5600

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 3	7.6	246	17	4182
1	Type 3	10	384	18	6912
2	Type 3	8.1	351	17	5967
3	Type 3	7.5	391	17	6647
4	Type 3	7.3	217	16	3472
5	Type 3	9.9	429	18	7722
6	Type 3	7.3	443	16	7088
7	Type 3	6.4	470	16	7520
8	Type 3	8.1	218	17	3706
9	Type 3	8.2	335	17	5695
10	Type 3	7.4	405	17	6885
11	Type 3	6.9	469	16	7504
12	Type 3	9.9	402	18	7236
13	Type 3	9.9	485	18	8730
14	Type 3	6.1	435	16	6960
15	Type 3	7.2	366	16	5856
16	Type 3	8.5	412	17	7004
17	Type 3	9.2	324	18	5832
18	Type 3	6.4	500	16	8000
19	Type 3	9.1	330	18	5940
20	Type 3	9.2	254	18	4572
21	Type 3	7.7	264	17	4488
22	Type 3	9.3	363	18	6534
23	Type 3	8.2	331	17	5627
24	Type 3	8.4	262	17	4454
25	Type 3	8.8	260	18	4680
26	Type 3	6.2	418	16	6688
27	Type 3	8.5	398	17	6766
28	Type 3	9.3	286	18	5148
29	Type 3	7.3	436	17	7412

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 4	14.6	246	14	3444
1	Type 4	19.8	384	16	6144
2	Type 4	15.8	351	14	4914
3	Type 4	14.5	391	13	5083
4	Type 4	13.9	217	13	2821
5	Type 4	19.7	429	16	6864
6	Type 4	13.9	443	13	5759
7	Type 4	12	470	12	5640
8	Type 4	15.7	218	14	3052
9	Type 4	15.9	335	14	4690
10	Type 4	14.1	405	13	5265
11	Type 4	13.1	469	13	6097
12	Type 4	19.7	402	16	6432
13	Type 4	19.8	485	16	7760
14	Type 4	11.4	435	12	5220
15	Type 4	13.7	366	13	4758
16	Type 4	16.6	412	15	6180
17	Type 4	18.2	324	16	5184
18	Type 4	12	500	12	6000
19	Type 4	17.9	330	15	4950
20	Type 4	18.2	254	15	3810
21	Type 4	14.8	264	14	3696
22	Type 4	18.4	363	16	5808
23	Type 4	16	331	14	4634
24	Type 4	16.5	262	15	3930
25	Type 4	17.3	260	15	3900
26	Type 4	11.6	418	12	5016
27	Type 4	16.6	398	15	5970
28	Type 4	18.3	286	16	4576
29	Type 4	14	436	13	5668

Trial Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	13	0.923077	12	5.51
1	Type 5	20	0.6	12	5.51
2	Type 5	14	0.857143	12	5.51
3	Type 5	13	0.923077	12	5.51
4	Type 5	12	1	12	5.51
5	Type 5	20	0.6	12	5.51
6	Type 5	12	1	12	5.51
7	Type 5	9	1.333333	12	5.51
8	Type 5	14	0.857143	12	5.51
9	Type 5	15	0.8	12	5.51
10	Type 5	12	1	12	5.494
11	Type 5	11	1.090909	12	5.493
12	Type 5	20	0.6	12	5.498
13	Type 5	20	0.6	12	5.498
14	Type 5	8	1.5	12	5.492
15	Type 5	11	1.090909	12	5.494
16	Type 5	16	0.75	12	5.496
17	Type 5	18	0.666667	12	5.497
18	Type 5	9	1.333333	12	5.492
19	Type 5	17	0.705882	12	5.497
20	Type 5	18	0.666667	12	5.523
21	Type 5	13	0.923077	12	5.526
22	Type 5	18	0.666667	12	5.523
23	Type 5	15	0.8	12	5.525
24	Type 5	15	0.8	12	5.524
25	Type 5	17	0.705882	12	5.524
26	Type 5	8	1.5	12	5.528
27	Type 5	16	0.75	12	5.524
28	Type 5	18	0.666667	12	5.523
29	Type 5	12	1	12	5.526

Trial 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	10
1	Type 6	1	333.3	9	0.3333	300	13
2	Type 6	1	333.3	9	0.3333	300	11
3	Type 6	1	333.3	9	0.3333	300	7
4	Type 6	1	333.3	9	0.3333	300	11
5	Type 6	1	333.3	9	0.3333	300	11
6	Type 6	1	333.3	9	0.3333	300	6
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	6
10	Type 6	1	333.3	9	0.3333	300	8
11	Type 6	1	333.3	9	0.3333	300	9
12	Type 6	1	333.3	9	0.3333	300	6
13	Type 6	1	333.3	9	0.3333	300	7
14	Type 6	1	333.3	9	0.3333	300	8
15	Type 6	1	333.3	9	0.3333	300	4
16	Type 6	1	333.3	9	0.3333	300	13
17	Type 6	1	333.3	9	0.3333	300	7
18	Type 6	1	333.3	9	0.3333	300	7
19	Type 6	1	333.3	9	0.3333	300	9
20	Type 6	1	333.3	9	0.3333	300	10
21	Type 6	1	333.3	9	0.3333	300	7
22	Type 6	1	333.3	9	0.3333	300	14
23	Type 6	1	333.3	9	0.3333	300	12
24	Type 6	1	333.3	9	0.3333	300	7
25	Type 6	1	333.3	9	0.3333	300	7
26	Type 6	1	333.3	9	0.3333	300	5
27	Type 6	1	333.3	9	0.3333	300	11
28	Type 6	1	333.3	9	0.3333	300	9
29	Type 6	1	333.3	9	0.3333	300	8

802.11ax (80 MHz), 5530 MHz				
Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	30	96.67	60	Pass
Type D.4.2	30	100.00	60	Pass
Type D.4.3	30	83.33	60	Pass
Type D.4.4	30	86.67	60	Pass
Type D.4.5	30	93.33	60	Pass
Type D.4.6	30	100.00	60	Pass
Note: The aggregate should be 80 percent that the average of the percentage of successful detections of Short Pulse Radar Types 1-4.				

802.11ax (80 MHz), 5530 MHz						
	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	v	v	v	v	v
7	v	v	x	v	v	v
8	v	v	x	v	v	v
9	v	v	v	v	v	v
10	v	v	v	v	x	v
11	v	v	v	v	v	v
12	v	v	v	v	v	v
13	v	v	v	v	v	v
14	v	v	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	x	v	v	v
21	v	v	x	v	v	v
22	v	v	v	v	v	v
23	v	v	v	v	x	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	v	v	v	v	v
29	v	v	v	v	v	v
30	v	v	v	v	v	v
Number of Successful	29	30	25	26	28	30
% of Successful	96.67	100.00	83.33	86.67	93.33	100.00
	91.67					

802.11ax (80 MHz), 5530 MHz					
Trial 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	838	63	52794
2	Type 1	1	858	62	53196
3	Type 1	1	798	67	53466
4	Type 1	1	698	76	53048
5	Type 1	1	758	70	53060
6	Type 1	1	558	95	53010
7	Type 1	1	618	86	53148
8	Type 1	1	3066	18	55188
9	Type 1	1	778	68	52904
10	Type 1	1	678	78	52884
11	Type 1	1	818	65	53170
12	Type 1	1	918	58	53244
13	Type 1	1	638	83	52954
14	Type 1	1	598	89	53222
15	Type 1	1	2929	19	55651
16	Type 1	1	1604	33	52932
17	Type 1	1	2694	20	53880
18	Type 1	1	3021	18	54378
19	Type 1	1	2048	26	53248
20	Type 1	1	1196	45	53820
21	Type 1	1	2954	18	53172
22	Type 1	1	958	56	53648
23	Type 1	1	1610	33	53130
24	Type 1	1	656	81	53136
25	Type 1	1	1562	34	53108
26	Type 1	1	2183	25	54575
27	Type 1	1	1753	31	54343
28	Type 1	1	1397	38	53086
29	Type 1	1	1816	30	54480

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 2	2.6	214	25	5350
1	Type 2	5	223	29	6467
2	Type 2	3.1	175	26	4550
3	Type 2	2.5	172	25	4300
4	Type 2	2.3	204	25	5100
5	Type 2	4.9	179	29	5191
6	Type 2	2.3	205	25	5125
7	Type 2	1.4	229	23	5267
8	Type 2	3.1	154	26	4004
9	Type 2	3.2	176	26	4576
10	Type 2	2.4	162	25	4050
11	Type 2	1.9	207	24	4968
12	Type 2	4.9	167	29	4843
13	Type 2	4.9	227	29	6583
14	Type 2	1.1	206	23	4738
15	Type 2	2.2	218	25	5450
16	Type 2	3.5	177	27	4779
17	Type 2	4.2	187	28	5236
18	Type 2	1.4	182	23	4186
19	Type 2	4.1	189	28	5292
20	Type 2	4.2	178	28	4984
21	Type 2	2.7	216	25	5400
22	Type 2	4.3	220	28	6160
23	Type 2	3.2	161	26	4186
24	Type 2	3.4	203	27	5481
25	Type 2	3.8	197	27	5319
26	Type 2	1.2	180	23	4140
27	Type 2	3.5	210	27	5670
28	Type 2	4.3	183	28	5124
29	Type 2	2.3	224	25	5600

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 3	7.6	246	17	4182
1	Type 3	10	384	18	6912
2	Type 3	8.1	351	17	5967
3	Type 3	7.5	391	17	6647
4	Type 3	7.3	217	16	3472
5	Type 3	9.9	429	18	7722
6	Type 3	7.3	443	16	7088
7	Type 3	6.4	470	16	7520
8	Type 3	8.1	218	17	3706
9	Type 3	8.2	335	17	5695
10	Type 3	7.4	405	17	6885
11	Type 3	6.9	469	16	7504
12	Type 3	9.9	402	18	7236
13	Type 3	9.9	485	18	8730
14	Type 3	6.1	435	16	6960
15	Type 3	7.2	366	16	5856
16	Type 3	8.5	412	17	7004
17	Type 3	9.2	324	18	5832
18	Type 3	6.4	500	16	8000
19	Type 3	9.1	330	18	5940
20	Type 3	9.2	254	18	4572
21	Type 3	7.7	264	17	4488
22	Type 3	9.3	363	18	6534
23	Type 3	8.2	331	17	5627
24	Type 3	8.4	262	17	4454
25	Type 3	8.8	260	18	4680
26	Type 3	6.2	418	16	6688
27	Type 3	8.5	398	17	6766
28	Type 3	9.3	286	18	5148
29	Type 3	7.3	436	17	7412

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 4	14.6	246	14	3444
1	Type 4	19.8	384	16	6144
2	Type 4	15.8	351	14	4914
3	Type 4	14.5	391	13	5083
4	Type 4	13.9	217	13	2821
5	Type 4	19.7	429	16	6864
6	Type 4	13.9	443	13	5759
7	Type 4	12	470	12	5640
8	Type 4	15.7	218	14	3052
9	Type 4	15.9	335	14	4690
10	Type 4	14.1	405	13	5265
11	Type 4	13.1	469	13	6097
12	Type 4	19.7	402	16	6432
13	Type 4	19.8	485	16	7760
14	Type 4	11.4	435	12	5220
15	Type 4	13.7	366	13	4758
16	Type 4	16.6	412	15	6180
17	Type 4	18.2	324	16	5184
18	Type 4	12	500	12	6000
19	Type 4	17.9	330	15	4950
20	Type 4	18.2	254	15	3810
21	Type 4	14.8	264	14	3696
22	Type 4	18.4	363	16	5808
23	Type 4	16	331	14	4634
24	Type 4	16.5	262	15	3930
25	Type 4	17.3	260	15	3900
26	Type 4	11.6	418	12	5016
27	Type 4	16.6	398	15	5970
28	Type 4	18.3	286	16	4576
29	Type 4	14	436	13	5668

Trial Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	13	0.923077	12	5.53
1	Type 5	20	0.6	12	5.53
2	Type 5	14	0.857143	12	5.53
3	Type 5	13	0.923077	12	5.53
4	Type 5	12	1	12	5.53
5	Type 5	20	0.6	12	5.53
6	Type 5	12	1	12	5.53
7	Type 5	9	1.333333	12	5.53
8	Type 5	14	0.857143	12	5.53
9	Type 5	15	0.8	12	5.53
10	Type 5	12	1	12	5.494
11	Type 5	11	1.090909	12	5.493
12	Type 5	20	0.6	12	5.498
13	Type 5	20	0.6	12	5.498
14	Type 5	8	1.5	12	5.492
15	Type 5	11	1.090909	12	5.494
16	Type 5	16	0.75	12	5.496
17	Type 5	18	0.666667	12	5.497
18	Type 5	9	1.333333	12	5.492
19	Type 5	17	0.705882	12	5.497
20	Type 5	18	0.666667	12	5.563
21	Type 5	13	0.923077	12	5.566
22	Type 5	18	0.666667	12	5.563
23	Type 5	15	0.8	12	5.565
24	Type 5	15	0.8	12	5.564
25	Type 5	17	0.705882	12	5.564
26	Type 5	8	1.5	12	5.568
27	Type 5	16	0.75	12	5.564
28	Type 5	18	0.666667	12	5.563
29	Type 5	12	1	12	5.566

Trial 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	21
2	Type 6	1	333.3	9	0.3333	300	20
3	Type 6	1	333.3	9	0.3333	300	13
4	Type 6	1	333.3	9	0.3333	300	17
5	Type 6	1	333.3	9	0.3333	300	14
6	Type 6	1	333.3	9	0.3333	300	12
7	Type 6	1	333.3	9	0.3333	300	16
8	Type 6	1	333.3	9	0.3333	300	13
9	Type 6	1	333.3	9	0.3333	300	13
10	Type 6	1	333.3	9	0.3333	300	19
11	Type 6	1	333.3	9	0.3333	300	18
12	Type 6	1	333.3	9	0.3333	300	16
13	Type 6	1	333.3	9	0.3333	300	15
14	Type 6	1	333.3	9	0.3333	300	17
15	Type 6	1	333.3	9	0.3333	300	8
16	Type 6	1	333.3	9	0.3333	300	18
17	Type 6	1	333.3	9	0.3333	300	10
18	Type 6	1	333.3	9	0.3333	300	18
19	Type 6	1	333.3	9	0.3333	300	17
20	Type 6	1	333.3	9	0.3333	300	18
21	Type 6	1	333.3	9	0.3333	300	14
22	Type 6	1	333.3	9	0.3333	300	20
23	Type 6	1	333.3	9	0.3333	300	21
24	Type 6	1	333.3	9	0.3333	300	16
25	Type 6	1	333.3	9	0.3333	300	15
26	Type 6	1	333.3	9	0.3333	300	12
27	Type 6	1	333.3	9	0.3333	300	18
28	Type 6	1	333.3	9	0.3333	300	19
29	Type 6	1	333.3	9	0.3333	300	20

802.11ax (160 MHz), 5570 MHz				
Radar Test Summary:				
Signal Type	Trial No.	Detection (%)	Limit (%)	Result
Type D.4.1	30	100.00	60	Pass
Type D.4.2	30	96.67	60	Pass
Type D.4.3	30	66.67	60	Pass
Type D.4.4	30	100.00	60	Pass
Type D.4.5	30	83.33	60	Pass
Type D.4.6	30	100.00	60	Pass
Note: The aggregate should be 80 percent that the average of the percentage of successful detections of Short Pulse Radar Types 1-4.				

802.11ax (160 MHz), 5570 MHz						
	Type_1	Type_2	Type_3	Type_4	Type_5	Type_6
1	v	v	v	v	v	v
2	v	v	x	v	v	v
3	v	v	x	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	x	v
8	v	v	v	v	x	v
9	v	x	x	v	v	v
10	v	v	x	v	v	v
11	v	v	v	v	v	v
12	v	v	v	v	v	v
13	v	v	v	v	x	v
14	v	v	v	v	x	v
15	v	v	v	v	x	v
16	v	v	v	v	v	v
17	v	v	v	v	v	v
18	v	v	x	v	v	v
19	v	v	v	v	v	v
20	v	v	x	v	v	v
21	v	v	v	v	v	v
22	v	v	x	v	v	v
23	v	v	v	v	v	v
24	v	v	x	v	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	x	v	v	v
29	v	v	v	v	v	v
30	v	v	v	v	v	v
Number of Successful	30	29	20	30	25	30
% of Successful	100.00	96.67	66.67	100.00	83.33	100.00
	90.83					

802.11ax (160 MHz), 5570 MHz					
Trial 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	838	63	52794
2	Type 1	1	858	62	53196
3	Type 1	1	798	67	53466
4	Type 1	1	698	76	53048
5	Type 1	1	758	70	53060
6	Type 1	1	558	95	53010
7	Type 1	1	618	86	53148
8	Type 1	1	3066	18	55188
9	Type 1	1	778	68	52904
10	Type 1	1	678	78	52884
11	Type 1	1	818	65	53170
12	Type 1	1	918	58	53244
13	Type 1	1	638	83	52954
14	Type 1	1	598	89	53222
15	Type 1	1	2929	19	55651
16	Type 1	1	1604	33	52932
17	Type 1	1	2694	20	53880
18	Type 1	1	3021	18	54378
19	Type 1	1	2048	26	53248
20	Type 1	1	1196	45	53820
21	Type 1	1	2954	18	53172
22	Type 1	1	958	56	53648
23	Type 1	1	1610	33	53130
24	Type 1	1	656	81	53136
25	Type 1	1	1562	34	53108
26	Type 1	1	2183	25	54575
27	Type 1	1	1753	31	54343
28	Type 1	1	1397	38	53086
29	Type 1	1	1816	30	54480

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 2	2.6	214	25	5350
1	Type 2	5	223	29	6467
2	Type 2	3.1	175	26	4550
3	Type 2	2.5	172	25	4300
4	Type 2	2.3	204	25	5100
5	Type 2	4.9	179	29	5191
6	Type 2	2.3	205	25	5125
7	Type 2	1.4	229	23	5267
8	Type 2	3.1	154	26	4004
9	Type 2	3.2	176	26	4576
10	Type 2	2.4	162	25	4050
11	Type 2	1.9	207	24	4968
12	Type 2	4.9	167	29	4843
13	Type 2	4.9	227	29	6583
14	Type 2	1.1	206	23	4738
15	Type 2	2.2	218	25	5450
16	Type 2	3.5	177	27	4779
17	Type 2	4.2	187	28	5236
18	Type 2	1.4	182	23	4186
19	Type 2	4.1	189	28	5292
20	Type 2	4.2	178	28	4984
21	Type 2	2.7	216	25	5400
22	Type 2	4.3	220	28	6160
23	Type 2	3.2	161	26	4186
24	Type 2	3.4	203	27	5481
25	Type 2	3.8	197	27	5319
26	Type 2	1.2	180	23	4140
27	Type 2	3.5	210	27	5670
28	Type 2	4.3	183	28	5124
29	Type 2	2.3	224	25	5600

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 3	7.6	246	17	4182
1	Type 3	10	384	18	6912
2	Type 3	8.1	351	17	5967
3	Type 3	7.5	391	17	6647
4	Type 3	7.3	217	16	3472
5	Type 3	9.9	429	18	7722
6	Type 3	7.3	443	16	7088
7	Type 3	6.4	470	16	7520
8	Type 3	8.1	218	17	3706
9	Type 3	8.2	335	17	5695
10	Type 3	7.4	405	17	6885
11	Type 3	6.9	469	16	7504
12	Type 3	9.9	402	18	7236
13	Type 3	9.9	485	18	8730
14	Type 3	6.1	435	16	6960
15	Type 3	7.2	366	16	5856
16	Type 3	8.5	412	17	7004
17	Type 3	9.2	324	18	5832
18	Type 3	6.4	500	16	8000
19	Type 3	9.1	330	18	5940
20	Type 3	9.2	254	18	4572
21	Type 3	7.7	264	17	4488
22	Type 3	9.3	363	18	6534
23	Type 3	8.2	331	17	5627
24	Type 3	8.4	262	17	4454
25	Type 3	8.8	260	18	4680
26	Type 3	6.2	418	16	6688
27	Type 3	8.5	398	17	6766
28	Type 3	9.3	286	18	5148
29	Type 3	7.3	436	17	7412

Trial Id	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length (us)
0	Type 4	14.6	246	14	3444
1	Type 4	19.8	384	16	6144
2	Type 4	15.8	351	14	4914
3	Type 4	14.5	391	13	5083
4	Type 4	13.9	217	13	2821
5	Type 4	19.7	429	16	6864
6	Type 4	13.9	443	13	5759
7	Type 4	12	470	12	5640
8	Type 4	15.7	218	14	3052
9	Type 4	15.9	335	14	4690
10	Type 4	14.1	405	13	5265
11	Type 4	13.1	469	13	6097
12	Type 4	19.7	402	16	6432
13	Type 4	19.8	485	16	7760
14	Type 4	11.4	435	12	5220
15	Type 4	13.7	366	13	4758
16	Type 4	16.6	412	15	6180
17	Type 4	18.2	324	16	5184
18	Type 4	12	500	12	6000
19	Type 4	17.9	330	15	4950
20	Type 4	18.2	254	15	3810
21	Type 4	14.8	264	14	3696
22	Type 4	18.4	363	16	5808
23	Type 4	16	331	14	4634
24	Type 4	16.5	262	15	3930
25	Type 4	17.3	260	15	3900
26	Type 4	11.6	418	12	5016
27	Type 4	16.6	398	15	5970
28	Type 4	18.3	286	16	4576
29	Type 4	14	436	13	5668

Trial Id	Radar Type	Number of Bursts	Burst Period(s)	Waveform Length(s)	Center Frequency (GHz)
0	Type 5	13	0.923077	12	5.57
1	Type 5	20	0.6	12	5.57
2	Type 5	14	0.857143	12	5.57
3	Type 5	13	0.923077	12	5.57
4	Type 5	12	1	12	5.57
5	Type 5	20	0.6	12	5.57
6	Type 5	12	1	12	5.57
7	Type 5	9	1.333333	12	5.57
8	Type 5	14	0.857143	12	5.57
9	Type 5	15	0.8	12	5.57
10	Type 5	12	1	12	5.494
11	Type 5	11	1.090909	12	5.493
12	Type 5	20	0.6	12	5.498
13	Type 5	20	0.6	12	5.498
14	Type 5	8	1.5	12	5.492
15	Type 5	11	1.090909	12	5.494
16	Type 5	16	0.75	12	5.496
17	Type 5	18	0.666667	12	5.497
18	Type 5	9	1.333333	12	5.492
19	Type 5	17	0.705882	12	5.497
20	Type 5	18	0.666667	12	5.643
21	Type 5	13	0.923077	12	5.646
22	Type 5	18	0.666667	12	5.643
23	Type 5	15	0.8	12	5.645
24	Type 5	15	0.8	12	5.644
25	Type 5	17	0.705882	12	5.644
26	Type 5	8	1.5	12	5.648
27	Type 5	16	0.75	12	5.644
28	Type 5	18	0.666667	12	5.643
29	Type 5	12	1	12	5.646

Trial 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	33
1	Type 6	1	333.3	9	0.3333	300	33
2	Type 6	1	333.3	9	0.3333	300	40
3	Type 6	1	333.3	9	0.3333	300	33
4	Type 6	1	333.3	9	0.3333	300	33
5	Type 6	1	333.3	9	0.3333	300	30
6	Type 6	1	333.3	9	0.3333	300	24
7	Type 6	1	333.3	9	0.3333	300	31
8	Type 6	1	333.3	9	0.3333	300	29
9	Type 6	1	333.3	9	0.3333	300	28
10	Type 6	1	333.3	9	0.3333	300	35
11	Type 6	1	333.3	9	0.3333	300	35
12	Type 6	1	333.3	9	0.3333	300	31
13	Type 6	1	333.3	9	0.3333	300	30
14	Type 6	1	333.3	9	0.3333	300	35
15	Type 6	1	333.3	9	0.3333	300	25
16	Type 6	1	333.3	9	0.3333	300	32
17	Type 6	1	333.3	9	0.3333	300	21
18	Type 6	1	333.3	9	0.3333	300	42
19	Type 6	1	333.3	9	0.3333	300	34
20	Type 6	1	333.3	9	0.3333	300	30
21	Type 6	1	333.3	9	0.3333	300	31
22	Type 6	1	333.3	9	0.3333	300	39
23	Type 6	1	333.3	9	0.3333	300	41
24	Type 6	1	333.3	9	0.3333	300	33
25	Type 6	1	333.3	9	0.3333	300	36
26	Type 6	1	333.3	9	0.3333	300	31
27	Type 6	1	333.3	9	0.3333	300	34
28	Type 6	1	333.3	9	0.3333	300	35
29	Type 6	1	333.3	9	0.3333	300	34