Testing Laboratory 3787

DFS TEST REPORT

FCC ID	:	MSQ-RTAX5X00
Equipment	:	ROG Rapture AX10000 Tri-band Gaming Mesh Router
Brand Name	:	ASUS
Model Name	:	GT6
Applicant	:	ASUSTeK COMPUTER INC. 1F., No. 15, Lide Rd., Beitou, Taipei City 112, Taiwan
Manufacturer (1)	:	Compal Networking(KunShan) CO., LTD No.520,Nan Bang RD., Economic & Technical Development Zone, KunShan,JiangSu,China
Manufacturer (2)	:	ARCADYAN TECHNOLOGY (VIETNAM) CO., LTD. Land plot No. D4-5-6, Thang Long Industrial Park (Vinh Phuc), Thien Ke Commune, Binh Xuyen District, 15000 Vinh Phuc Province, Vietnam
Standard	:	47 CFR FCC Part 15.407

The product was received on Aug. 05, 2022, and testing was started from Aug. 05, 2022 and completed on Aug. 05, 2022. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FZ221807-01	01	Initial issue of report	Sep. 23, 2022
FZ221807-01	02	Revising Appendix A for Zero-Wait CAC	Oct. 19, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	FCC KDB 905462 7.8.1	DFS: UNII Detection Bandwidth Measurement	PASS	-
Note: Reference to Sporton Project No.: FZ221807.				

Declaration of Conformity:
1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results. 2. The measurement uncertainty please refer to report "Measurement Uncertainty".
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.

Reviewed by: Sam Chen
Report Producer: Sandy Chuang

1 General Description

1.1 Information

1.1.1 RF General Information

Specification Items	Description	
Frequency Range	5250 MHz – 5350 MHz 5470 MHz – 5725 MHz	
Power Type	From power adapter	
Channel Bandwidth	20/40/80/160 MHz operating channel bandwidth	
Operating Mode	☒ Master (AP Router, Repeater, Mesh)	
	☐ Client with radar detection	
	☒ Client without radar detection (Bridge)	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Firmware Number	388_20542	
◆ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation. ◆ VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation. ◆ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation. ◆ EUT employ a TPC mechanism and TPC have the capability to operate at least 6 dB below highest RF output power.		

Note: The above information was declared by manufacturer.

TPC Power Result
<UNII 2A>
Non-beamforming mode

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-
5.25-5.35GHz	17.49	23.49	21.81	27.81

Beamforming mode
4T1S

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.47	23.47	23.90	29.90
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.42	23.42	23.85	29.85
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.33	23.33	23.76	29.76
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.33	23.33	23.76	29.76

4T2S

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.92	23.92	22.24	28.24
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.81	23.81	22.13	28.13
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.83	23.83	22.15	28.15

Note: The manufacturer declared that TPC is applied to this equipment. The test result of TPC is equal to RF output power minus 6dBm which is recorded as a reference for the manufacturer.

<UNII 2C>
Non-beamforming mode

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-
5.47-5.725GHz	17.89	23.89	20.69	26.69

Beamforming mode
4T1S

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	17.74	23.74	23.87	29.87
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	17.83	23.83	23.96	29.96
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	17.71	23.71	23.84	29.84
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	17.63	23.63	23.76	29.76

Note: The manufacturer declared that TPC is applied to this equipment. The test result of TPC is equal to RF output power minus 6dBm which is recorded as a reference for the manufacturer.

1.1.2 Antenna Information

Ant.	Port				Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz UNII 1~2A	WLAN 5GHz UNII 2C~4 (Mode 1)	WLAN 5GHz UNII 2C~4 (Mode 2)					
1	2	4	-	-	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	Note1
2	1	3	-	-	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
3	-	2	-	-	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
4	-	1	-	-	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
5	-	-	4	4	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
6	-	-	1	1	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
7	-	-	3	3	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
8	-	-	2	-	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	
9	-	-	-	2	LYNwave	MLX22M-121AA1-A / MLX22M-121AA1-B	Dipole	I-PEX	

Note1: **<Antenna gain>**

Ant.	Port				Gain(dBi)								
						WLAN 5GHz							
	WLAN 2.4GHz	WLAN 5GHz UNII 1~2A	WLAN 5GHz UNII 2C~4 (Mode 1)	WLAN 5GHz UNII 2C~4 (Mode 2)	WLAN 2.4GHz	UNII 1	UNII 2A	UNII 2C		UNII 3		UNII 4	
								Mode1	Mode2	Mode1	Mode2	Mode1	Mode2
1	2	4	-	-	4.1	3.53	3.81	-	-	-	-	-	-
2	1	3	-	-	3.39	3.26	4.32	-	-	-	-	-	-
3	-	2	-	-	-	2.32	2.96	-	-	-	-	-	-
4	-	1	-	-	-	2.31	2.44	-	-	-	-	-	-
5	-	-	4	4	-	-	-	1.43	1.43	2.08	2.08	2.5	2.5
6	-	-	1	1	-	-	-	1.66	1.66	1.91	1.91	2.89	2.89
7	-	-	3	3	-	-	-	2.8	2.8	3.51	3.51	3.79	3.79
8	-	-	2	-	-	-	-	2.55	-	3.36	-	3.65	-
9	-	-	-	2	-	-	-	-	3.64	-	3.64	-	3.29

<Directional Gain>

Item	WLAN 2.4GHz	Directional Gain(dBi)							
		WLAN 5GHz							
		UNII 1	UNII 2A	UNII 2C		UNII 3		UNII 4	
				Mode1	Mode2	Mode1	Mode2	Mode1	Mode2
2T1S	6.01	-	-	-	-	-	-	-	-
2T2S	4.1	-	-	-	-	-	-	-	-
4T1S	-	6.24	6.43	6.13	4.83	7.23	5.25	6.76	4.95
4T2S	-	-	4.32	-	-	4.23	3.64	3.79	3.79

Note2: The above information (except gain) was declared by manufacturer.
The directional gain is measured which follows the procedure of KDB 662911 D03.

Note3: Mode1 was Ant.5~7+Ant.8 and Mode 2 was Ant. 5~7+Ant.9.

Note4: The EUT support the antenna with TX/RX diversity functions. Both Ant.8 and Ant.9 can be used as transmitting and receiving antennas, but only one of them will be used at one time.
Ant. 8 generated be the worst case, so it was selected to test and recorded in the report.

Note5: Antennas' Model Name: MLX22M-121AA1-A are for EUT 1 use and MLX22M-121AA1-B are for EUT 2 use. They're same type of antennas.

For 2.4GHz function:

For IEEE 802.11b/g/n/VHT/ax (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac/ax (4TX/4RX):

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

1.1.3 DFS Band Carrier Frequencies

There are four bandwidth systems.

For 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 134, 142.

For 80MHz bandwidth systems, use Channel 58, 106, 122, 138.

For 160MHz bandwidth systems, use Channel 50, 114

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	50	5250 MHz	58	5290 MHz
	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	122	5610 MHz
	102	5510 MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	106	5530 MHz	128	5640 MHz
	108	5540 MHz	132	5660 MHz
	110	5550 MHz	134	5670 MHz
	112	5560 MHz	136	5680 MHz
	114	5570 MHz	138	5690 MHz
	116	5580 MHz	140	5700 MHz
	118	5590 MHz	142	5710 MHz
	120	5600 MHz	144	5720 MHz

1.1.4 Table for EUT supports functions

Function	Support Type
AP Router	Master
Bridge	Slave without radar detection
Repeater	Master
Mesh	Master

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT Information

EUT	PCB board Version	Color of outer case	
		Black	White
EUT 1	R1.20	V	V
EUT 2	R2.00	V	V

Note 1: From the above EUTs, EUT 2 (color: white) was selected to test all items.
Note 2: The above information was declared by manufacturer.

1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FZ221807.
Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Upgrading the PCB version of EUT to R2.00 from R1.20. The difference is listed below: (1) Mainboard: Adding common mode filter to TX path of USB3.0 (Location: FL1). (2) I/O board: Adding common mode filter to RX path of USB3.0 (Location: FL3). 2. Revising the black and white housing to the final version.	After evaluation, the test results don't be affected.
3. Adding the Zero wait function of EUT 2. 4. Adding a set antennas (Model Name: MLX22M-121AA1-B) which is almost same as the original antenna but the grey color. The new antennas is available for the white housing only.	Dynamic In-Service Monitoring_Zero Wait

1.2 Accessories

Accessories					
No.	**Equipment Name**	**Brand Name**	**Model Name**	**Rating**	**Remark**
1	Adapter 1	DELTA	ADP-45FE F	INPUT: 100-240V~1.2A, 50-60Hz OUTPUT: 19V, 2.37A	With the DC cable: Non-shielded, 1.6m
2	Adapter 2	AcBel	ADH011	INPUT: 100-240V~1.4A, 50-60Hz OUTPUT: 19.5V, 2.31A, 45W MAX	With the DC cable: Non-shielded, 1.6m
Others					
RJ-45 cable*1: Non-shielded, 1.5m Power cord*2: Non-shielded, 0.8m					

1.3 Support Equipment

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	WLAN module	Intel	AX210NGW	PD9AX210NG

1.4 Applicable Standards

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

- 47 CFR FCC Part 15.407
- FCC KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

1.5 Testing Location Information

Testing Location Information	
Test Lab.：Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
DFS	DF01-CB	Mason Chen	21.2~22.1 / 63~67	Aug. 05, 2022

2 Test Configuration of EUT

2.1 Test Channel Frequencies Configuration

Test Channel Frequencies Configuration	
IEEE Std.	**Test Channel Freq. (MHz)**
802.11ax (HEW160)	5570 MHz

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	Dynamic Frequency Selection (DFS)
Test Condition	Radiated measurement 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. The DFS radar test signals have been aligned to the direction corresponding to the EUT's maximum antenna gain.
Modulation Mode	802.11ax (HEW160)
1	EUT 2 - Master (AP Router)

3 Dynamic Frequency Selection (DFS) Test Result

3.1 General DFS Information

3.1.1 DFS Parameters

Table D.1: DFS requirement values	
Parameter	**Value**
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (Note 1).
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second periods. (Notes 1 and 2).
U-NII Detection Bandwidth	Minimum 100% of the 99% power bandwidth (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 Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.	

Table D.2: Interference threshold values	
Maximum Transmit Power	**Value (see note)**
EIRP ≥ 200 mW	-64 dBm
EIRP < 200 mW and PSD < 10dBm/MHz	-62 dBm
EIRP < 200 mW and PSD >= 10dBm/MHz	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911D01.	

3.1.2 Applicability of DFS Requirements Prior to Use of a Channel

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

3.1.3 Applicability of DFS Requirements during Normal Operation

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

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

3.1.4 User Access Restrictions

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.

3.1.5 Channel Loading/Data Streaming

☐	The data file (MPEG-4) has been transmitting in a streaming mode.
☒	Software to ping the client is permitted to simulate data transfer with random ping intervals.
☒	Minimum channel loading of approximately 17%.
☐	Unicast protocol has been used.

3.2 Radar Test Waveform Calibration

3.2.1 Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1A	1	15 unique PRI in KDB 905462 D02 Table 5a	$Roundup\left\{\left(\frac{1}{360}\right)\times\left(\frac{19\times10^6}{PRI}\right)\right\}$	60%	15
1B	1	15 unique PRI within 518-3066, Excluding 1A PRI		60%	15
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 1 through 4. If more than 30 waveforms are used for short pulse radar types 1 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

3.2.2 Long Pulse Radar Test Waveform

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

Each waveform is defined as follows:

- The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 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.
- 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.
- 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.
- Each pulse has a linear FM 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.

- 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.
- 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.

3.2.3 Frequency Hopping Radar Test Waveform

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

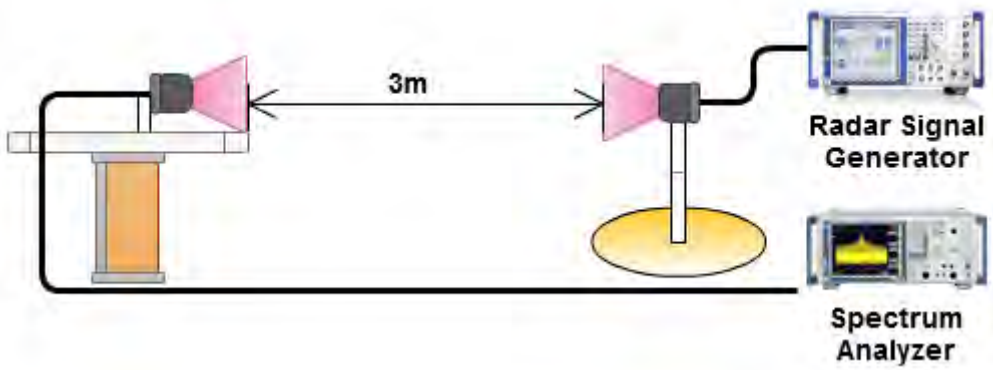
For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:
The first frequency in a hopping sequence is selected randomly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

3.2.4 DFS Threshold Level

DFS Threshold Level	
DFS Threshold level: -63 dBm	☐ at the antenna connector
	☒ in front of the antenna
The Interference **Radar Detection Threshold Level** is *-64 dBm + 0 [dBi] + 1 dB* = -63 dBm. That had been taken into account the output power range and antenna gain.	

3.2.5 Calibration Setup

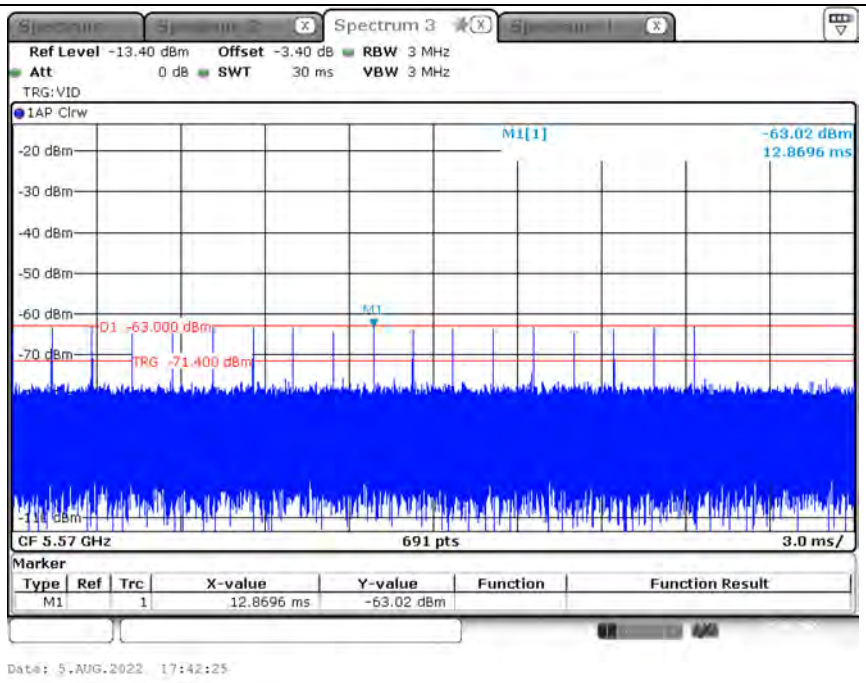
Master Radiated Calibration Setup



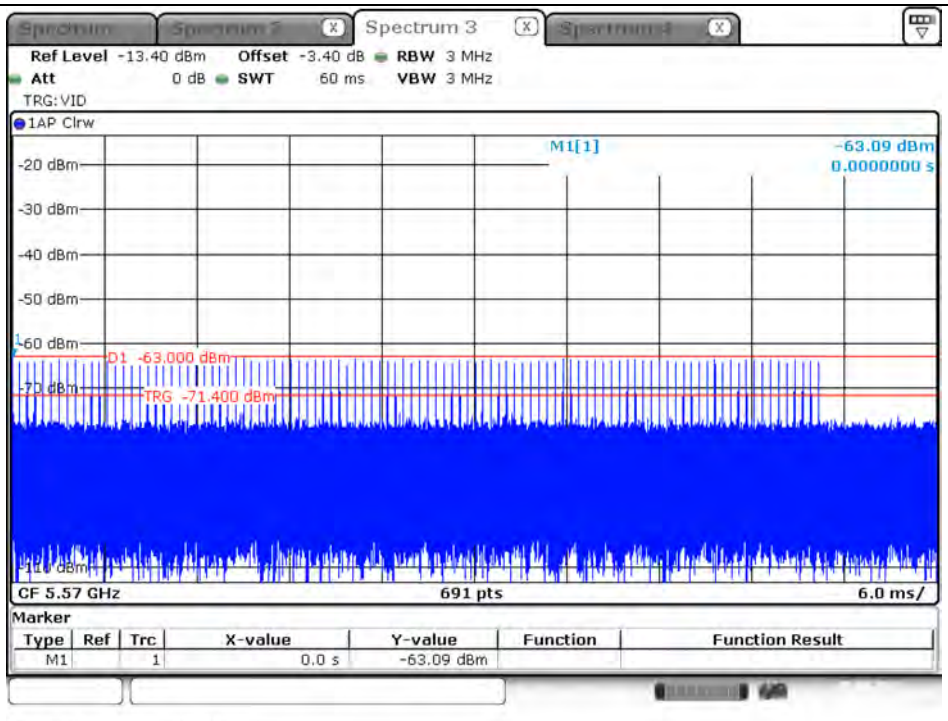
3.2.6 Radar Waveform calibration Plot

Test Frequency: 5570 MHz

Radar #0 DFS detection threshold level



Radar #1 DFS detection threshold level



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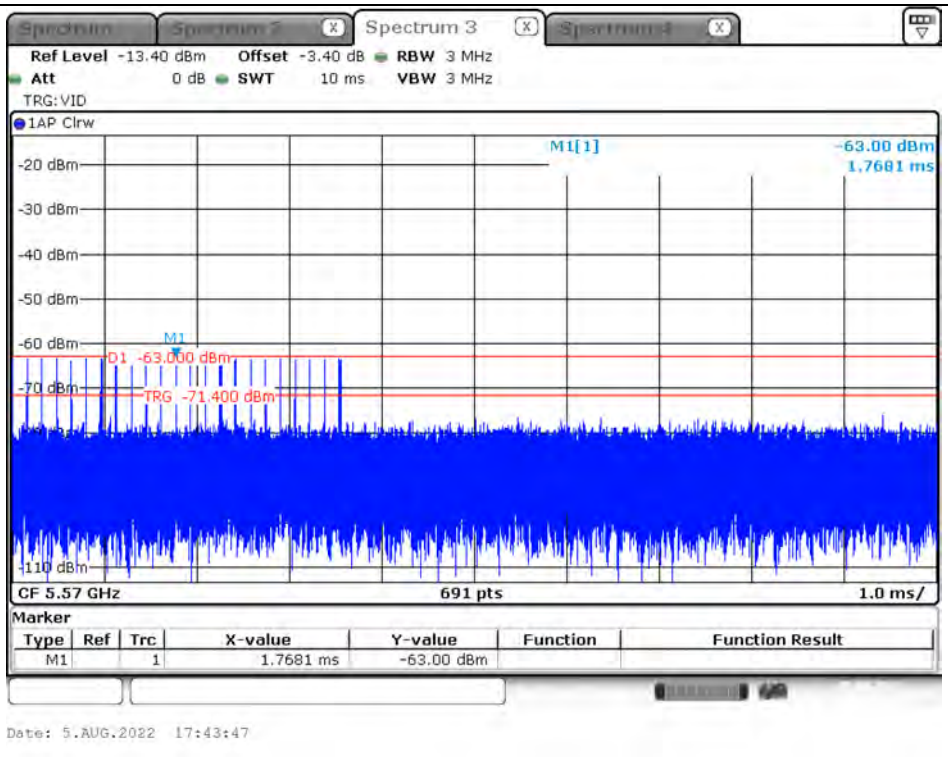
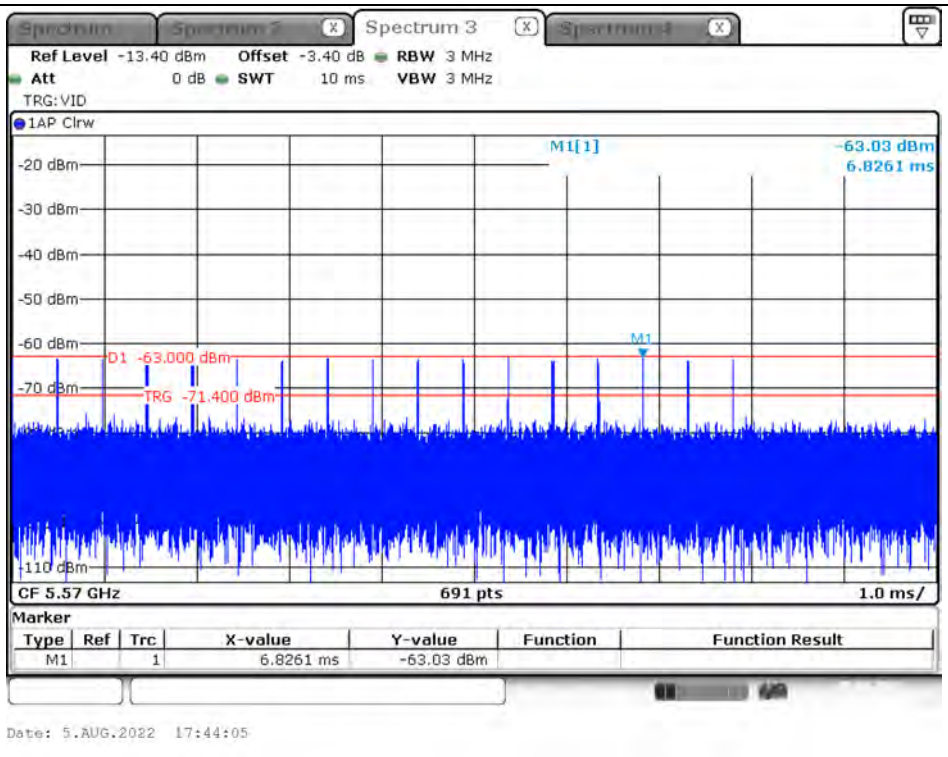
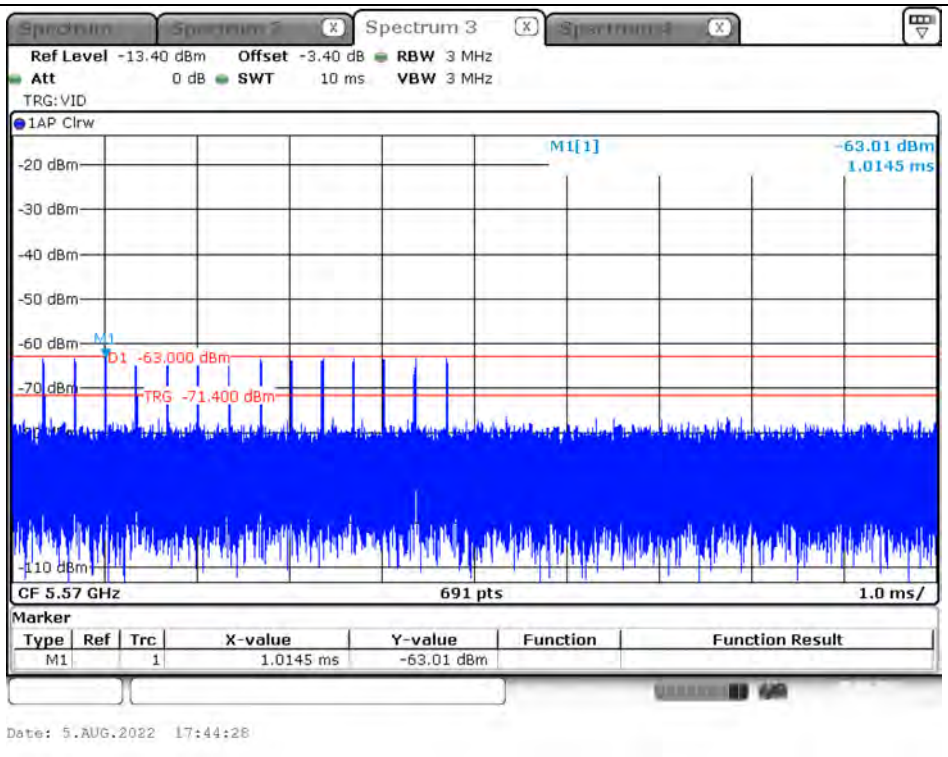


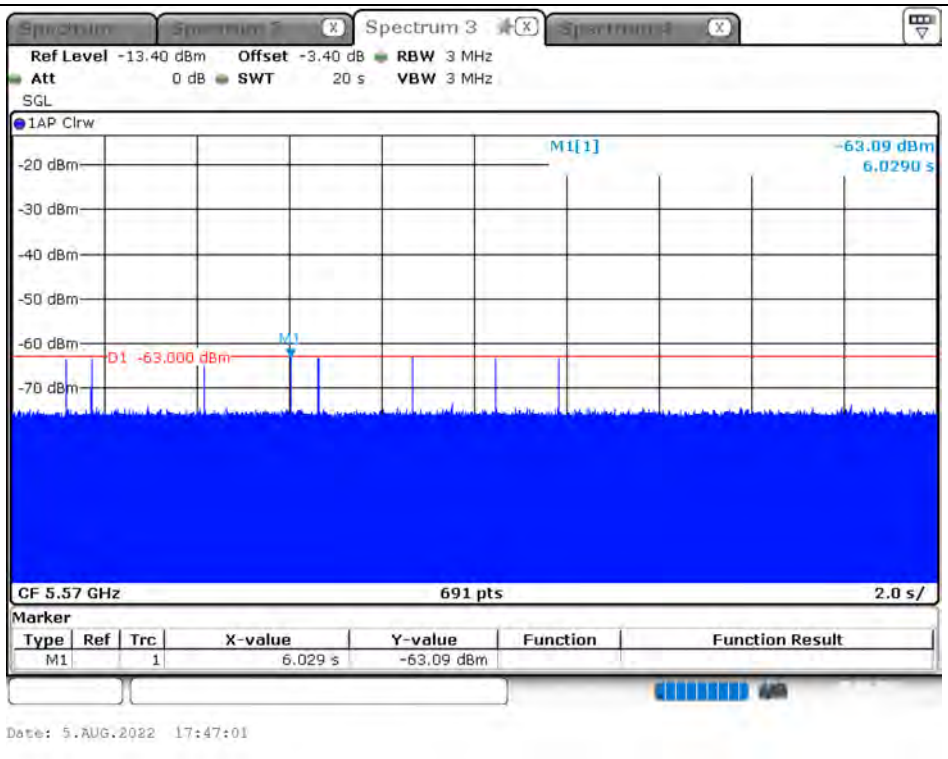
Radar #3 DFS detection threshold level



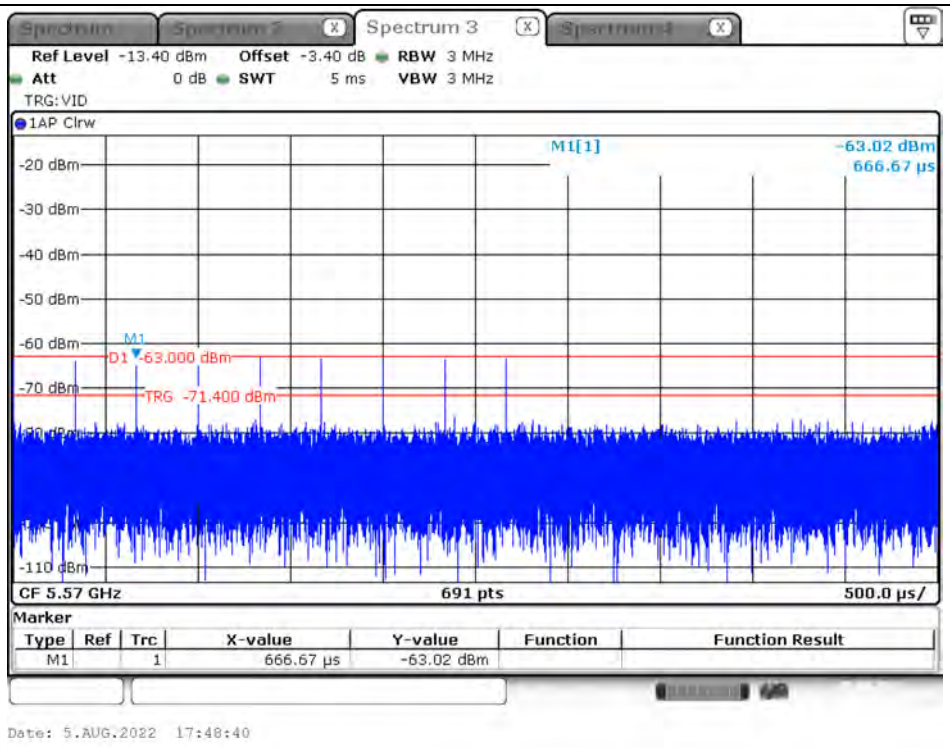
Radar #4 DFS detection threshold level



Radar #5 DFS detection threshold level



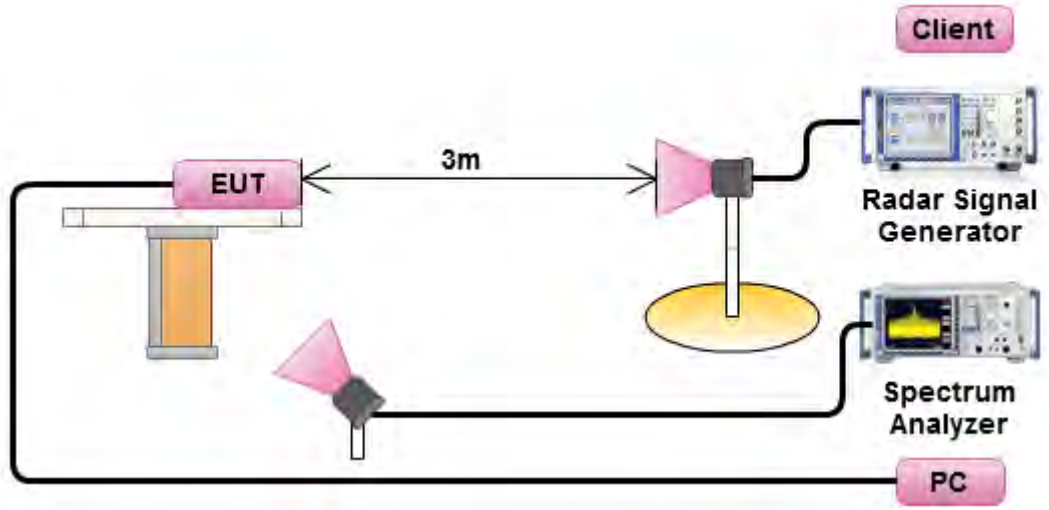
Radar #6 DFS detection threshold level



3.2.7 Test Setup

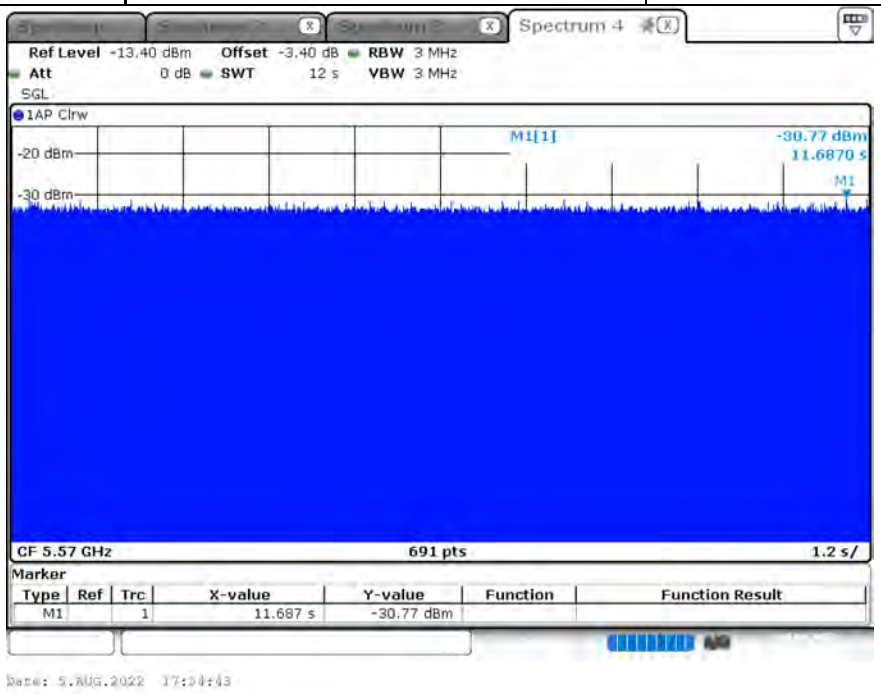
A spectrum analyzer is used as a monitor to verify that the EUT has vacated the Channel within the (Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and Channel move.

Master Radiated Measurement

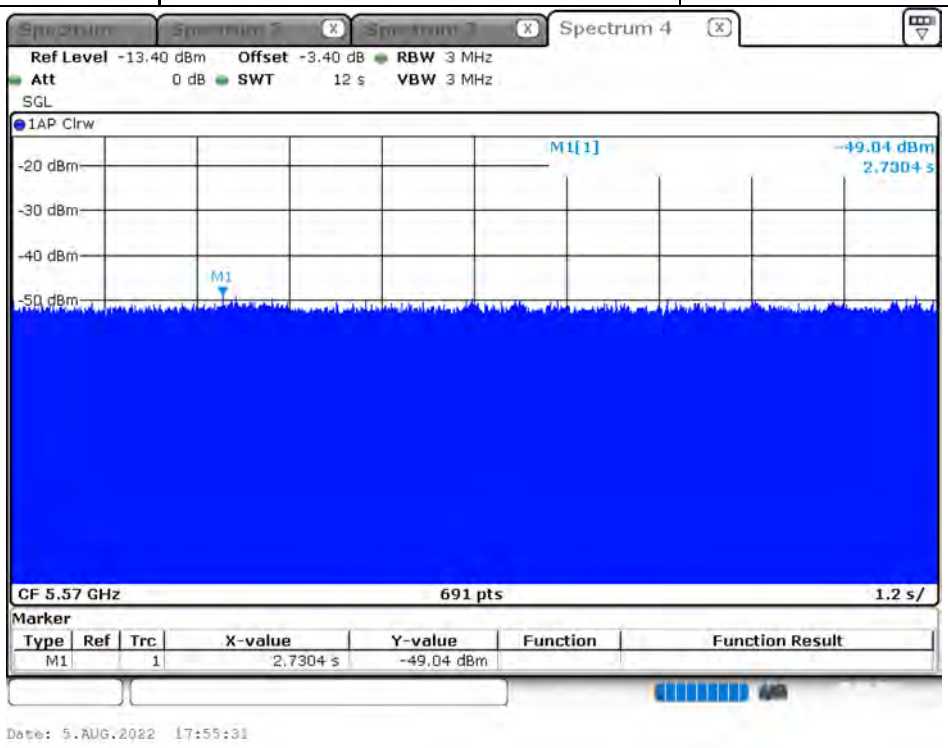


3.2.8 Data traffic Plot

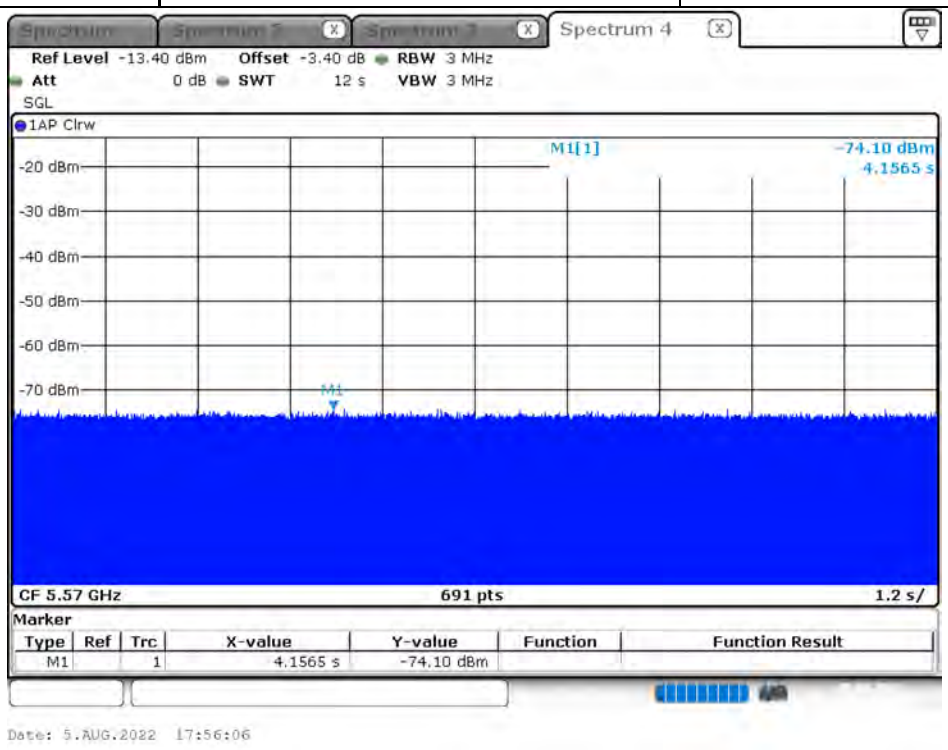
EUT Data traffic Plot	Modulation Mode: 802.11ax (HEW160)	Test Frequency: 5570 MHz



Client Data Traffic Plot	Modulation Mode: 802.11ax (HEW160)	Test Frequency: 5570 MHz



Without Data Traffic Plot	Modulation Mode: 802.11ax (HEW160)	Test Frequency: 5570 MHz



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101026	9kHz~40GHz	Dec. 07, 2021	Dec. 06, 2022	Radiated (DF01-CB)
Vector Signal generator	R&S	SMU200A	105352	25MHz-6GHz	Mar. 11, 2022	Mar. 10, 2023	Radiated (DF01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Jun. 23, 2022	Jun. 22, 2023	Radiated (DF01-CB)
Horn Antenna	COM-POWER	AH-118	071042	1GHz – 18GHz	Dec. 20, 2021	Dec. 19, 2022	Radiated (DF01-CB)
RF Power Divider	STI	2 Way	DV-2way -05	1GHz ~ 8GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)
RF Power Divider	STI	2 Way	DV-2way -06	1GHz ~ 8GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)
RF Power Divider	MTJ	4 Way	DFS-01-DV-01	1GHz ~ 6GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)
RF Cable-high	Woken	RG402	High Cable-57	1 GHz –18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)
RF Cable-high	Woken	RG402	High Cable-58	1 GHz –18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)
RF Cable-high	Woken	RG402	High Cable-59	1 GHz –18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiated (DF01-CB)

Note: Calibration Interval of instruments listed above is one year.

5 Measurement Uncertainty

Test Items	Uncertainty	Remark
Radiated Emission	3.5 dB	Confidence levels of 95%

1. Dynamic In-Service Monitoring (Zero-Wait CAC)

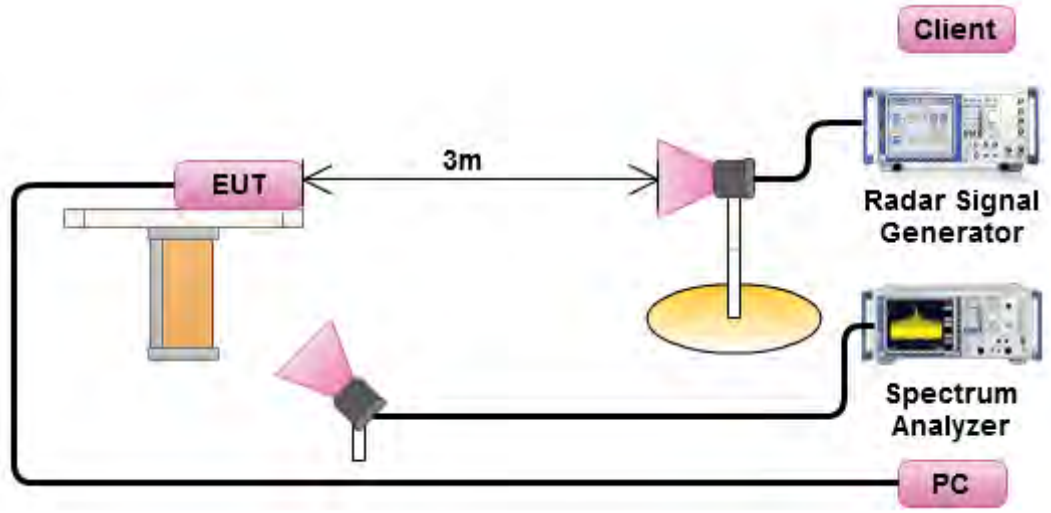
1.1. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

1.2. Test Procedure

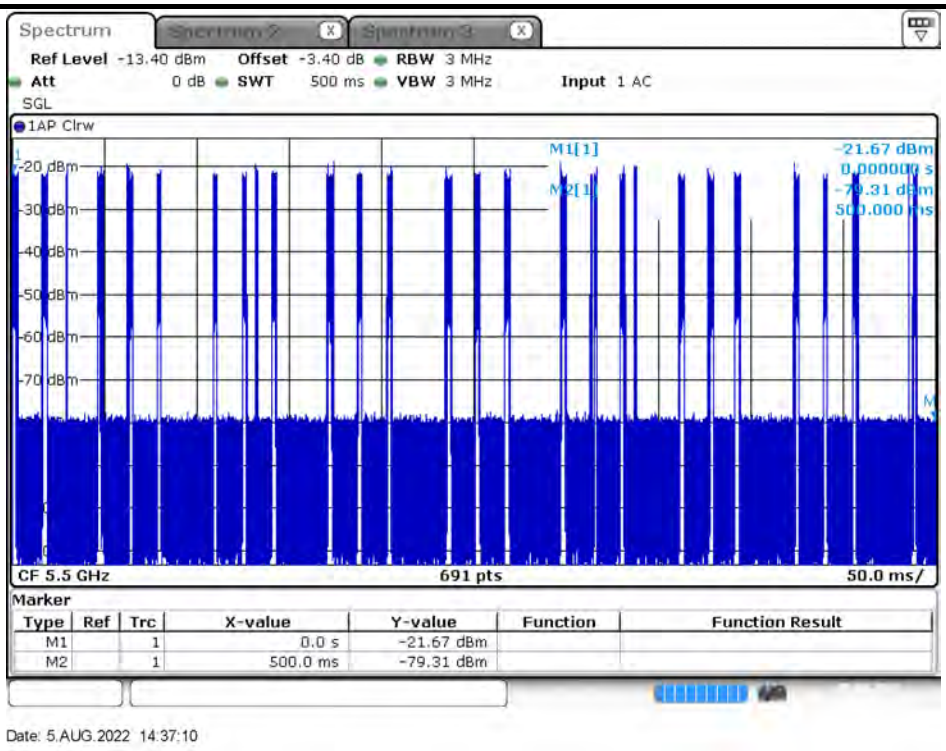
Pre-clearing a targeted channel for zero time switching from a operation channel
Before the operation channel moves from operation channels to targeted channels for zero time switching, one minute CAC should be performed on the targeted switching channel to make sure no radar presence. When CAC completed with no radar presence, channel move to targeted channel immediately. If radar detected at any time during CAC, EUT stays on the original operation channel.

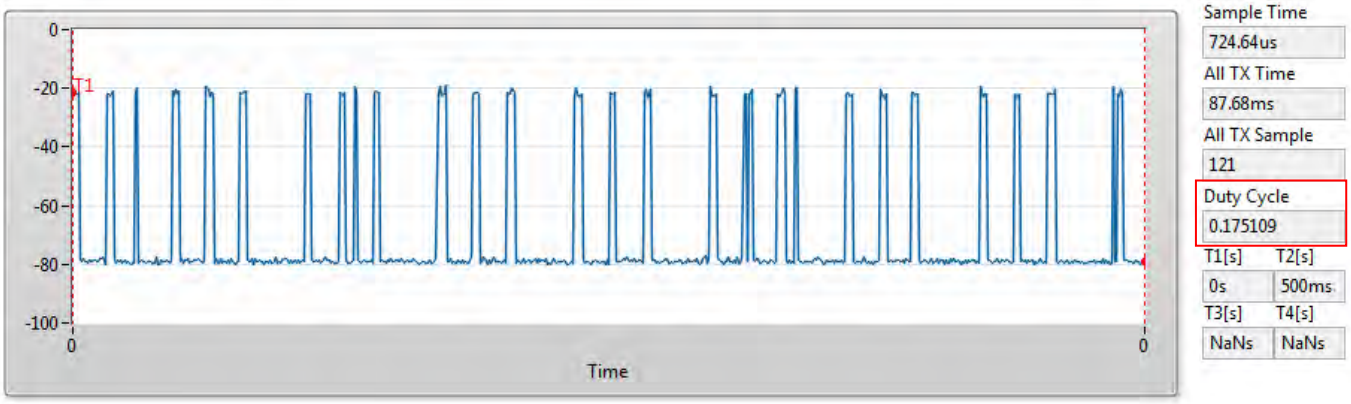
1.3. Test Setup

Master Radiated Measurement


Test Channel Frequencies Configuration	
IEEE Std.	**Test Channel Freq. (MHz)**
802.11ax (HEW160)	5570

1.4. Operation Frequency Data Traffic

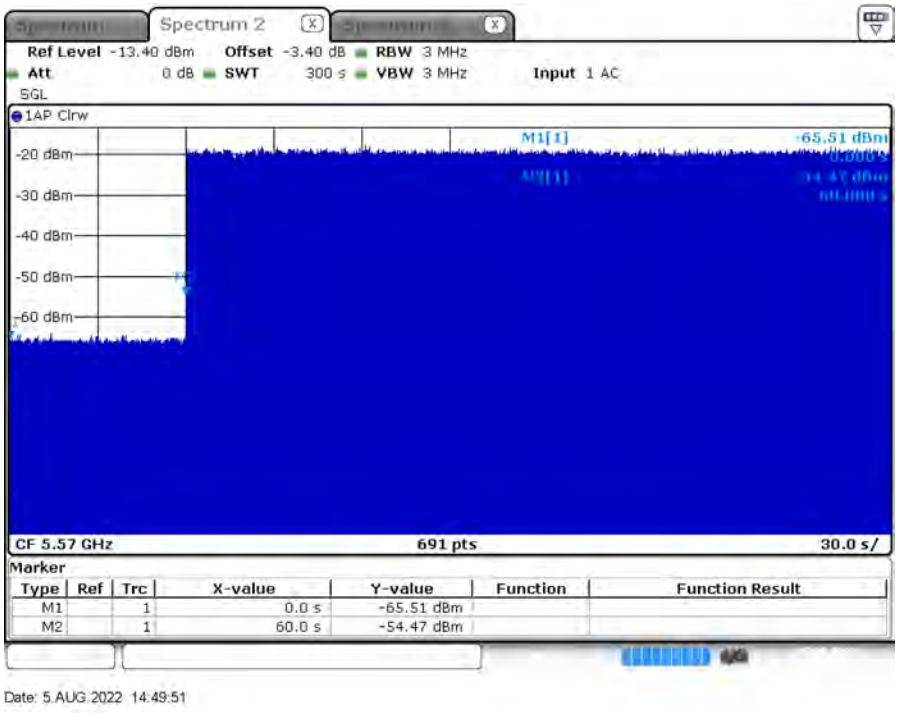




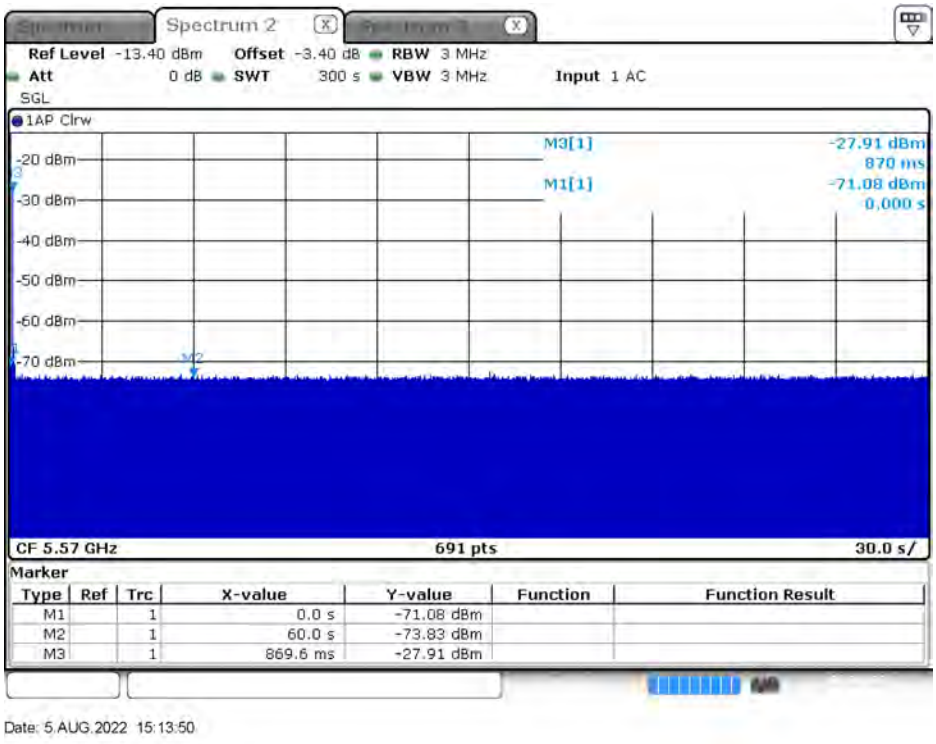
1.5. Test Result of Dynamic In-Service Monitoring

Dynamic In-Service Monitoring Test Result						
Detection Threshold Level (dBm)			-63			
Modulation Mode	Operation Freq.(MHz)	Targeted Channel Freq.(MHz)	Radar Test Signal (#)	Nr of Times Triggered (# out of 20)	Detection Probability (%)	Detection Probability Limit (%)
802.11ax (HEW160)	5500	5570	0	19	95	60

Initial CAC – Zero Wait		
Modulation Mode	**Zero-Wait Freq.**	**Radar Type**
802.11ax (HEW160)	5570	0
The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle (0.000 sec). The initial CAC time of the EUT is indicated by marker 1 (0.000 sec). Initial beacons/data transmissions are indicated by marker 2 (60.000 sec).		



Begin CAC – Zero Wait		
Modulation Mode	**Zero-Wait Freq.**	**Radar Type**
802.11ax (HEW160)	5570	0
Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 299.131 after the radar Burst has been generated. Verify that during the 300 seconds measurement window no EUT transmissions occurred.		



End CAC – Zero Wait		
Modulation Mode	**Zero-Wait Freq.**	**Radar Type**
802.11ax (HEW160)	5570	0
Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 242.609 seconds after the radar Burst has been generated. Verify that during the 300 seconds measurement window no EUT transmissions occurred.