DFS TEST REPORT

FCC ID	:	**Z8H89FT0086**
Equipment	:	**X7-55X Wi-Fi 7 Indoor Access Point**
Brand Name	:	**Cambium Networks**
Model Name	:	**X7-55X**
Applicant	:	**Cambium Networks Inc.** **3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA**
Manufacturer	:	**Cambium Networks Inc.** **3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA**
Standard	:	**47 CFR FCC Part 15.407**

The product was received on Jun. 25, 2024, and testing was started from Jan. 14, 2025 and completed on Mar. 13, 2025. 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 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.

Sam Chen
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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
FZ462417-01	01	Initial issue of report	Apr. 15, 2025

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.3	FCC KDB 905462 7.8.1	DFS: UNII Detection Bandwidth Measurement	PASS	-
3.4	FCC KDB 905462 7.8.2.1	DFS: Initial Channel Availability Check Time	PASS	-
3.4	FCC KDB 905462 7.8.2.2	DFS: Radar Burst at the Beginning of the Channel Availability Check Time	PASS	-
3.4	FCC KDB 905462 7.8.2.3	DFS: Radar Burst at the End of the Channel Availability Check Time	PASS	-
3.5	FCC KDB 905462 7.8.3	DFS: In-Service Monitoring for Channel Move Time (CMT)	PASS	-
3.5	FCC KDB 905462 7.8.3	DFS: In-Service Monitoring for Channel Closing Transmission Time (CCTT)	PASS	-
3.5	FCC KDB 905462 7.8.3	DFS: In-Service Monitoring for Non-Occupancy Period (NOP)	PASS	-
3.6	FCC KDB 905462 7.8.4	DFS: Statistical Performance Check	PASS	-
3.1.4	FCC KDB 905462 8.1	User Access Restrictions	N/A	Manufacturer attestation NOT accessible to user

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen
Report Producer: Muse Chan

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 PoE	
Channel Bandwidth	20/40/80/160 MHz operating channel bandwidth	
Operating Mode	☒ Master	
	☐ Client with radar detection	
	☐ Client without radar detection	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Zero-Wait Function	☐ Support	☒ Not Support
Channel Puncturing Function	☐ Supported Static Puncturing	
	☐ Supported Dynamic Puncturing	
	☒ Unsupported	
Power-on cycle	For Radio 2: 160MHz: Requires 152.174 seconds to complete its power-on cycle. For Radio 4: 160MHz: Requires 147.536 seconds to complete its power-on cycle.	
Firmware Number	7.1-a0	
◆ 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 modulation. ◆ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation. ◆ EHT20, EHT40, EHT80 and EHT160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM 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
For Radio 2:
5GHz Full Band

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-
5.25-5.35GHz	14.90	20.90	19.67	25.67
5.47-5.725GHz	15.16	21.16	20.87	26.87
802.11be EHT20_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	15.51	21.51	20.28	26.28
5.47-5.725GHz	15.58	21.58	21.29	27.29
802.11be EHT40_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.72	23.72	22.49	28.49
5.47-5.725GHz	17.95	23.95	23.66	29.66
802.11be EHT80_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.60	23.60	22.37	28.37
5.47-5.725GHz	17.88	23.88	23.59	29.59
802.11be EHT160_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.87	20.87	19.64	25.64
5.47-5.725GHz	17.92	23.92	23.63	29.63
802.11be EHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.46	20.46	23.77	29.77
5.47-5.725GHz	14.69	20.69	23.87	29.87
802.11be EHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.49	20.49	23.80	29.80
5.47-5.725GHz	14.68	20.68	23.86	29.86
802.11be EHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.32	20.32	23.63	29.63
5.47-5.725GHz	14.67	20.67	23.85	29.85
802.11be EHT160-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.27	20.27	23.58	29.58
5.47-5.725GHz	14.77	20.77	23.95	29.95

5GHz Low Band

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-
5.25-5.35GHz	14.20	20.20	18.97	24.97
802.11be EHT20_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.81	20.81	19.58	25.58
802.11be EHT40_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	17.56	23.56	22.33	28.33
802.11be EHT80_Nss1,(MCS14)_4TX	-	-	-	-
5.25-5.35GHz	15.60	21.60	20.37	26.37
802.11be EHT160_Nss1,(MCS14)_4TX	-	-	-	-
5.25-5.35GHz	13.54	19.54	18.31	24.31
802.11be EHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.63	20.63	23.94	29.94
802.11be EHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.25-5.35GHz	14.25	20.25	23.56	29.56
802.11be EHT80-BF_Nss1,(MCS14)_4TX	-	-	-	-
5.25-5.35GHz	14.62	20.62	23.93	29.93
802.11be EHT160-BF_Nss1,(MCS14)_4TX	-	-	-	-
5.25-5.35GHz	13.54	19.54	22.85	28.85

For Radio 4:
5GHz High band

Mode	Min Power (dBm)	Max Power (dBm)	Min EIRP (dBm)	Max EIRP (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-
5.47-5.725GHz	15.21	21.21	22.83	28.83
802.11be EHT20_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	15.42	21.42	23.04	29.04
802.11be EHT40_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	16.22	22.22	23.84	29.84
802.11be EHT80_Nss1,(MCS14)_4TX	-	-	-	-
5.47-5.725GHz	16.04	22.04	23.66	29.66
802.11be EHT160_Nss1,(MCS14)_4TX	-	-	-	-
5.47-5.725GHz	13.39	19.39	21.01	27.01
802.11be EHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	14.96	20.96	23.60	29.60
802.11be EHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-
5.47-5.725GHz	15.16	21.16	23.80	29.80
802.11be EHT80-BF_Nss1,(MCS14)_4TX	-	-	-	-
5.47-5.725GHz	15.06	21.06	23.70	29.70
802.11be EHT160-BF_Nss1,(MCS14)_4TX	-	-	-	-
5.47-5.725GHz	13.39	19.39	22.03	28.03

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	Model Name	Antenna Type	Connector	Gain (dBi)	Modes of Operation
1	1	ACCTON	RFMTA202028IMLB901-1	Dipole	I-PEX	Note 1	WLAN 2.4GHz (Radio 1)
2	2	ACCTON	RFMTA202028IMLB901-2	Dipole	I-PEX		WLAN 2.4GHz (Radio 1)
3	1	ACCTON	RFMTA202028IMLB901-3	Dipole	I-PEX		WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)
4	2	ACCTON	RFMTA202028IMLB901-4	Dipole	I-PEX		WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)
5	3	ACCTON	RFMTA202028IMLB901-5	Dipole	I-PEX		WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)
6	4	ACCTON	RFMTA202028IMLB901-6	Dipole	I-PEX		WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)
7	1	ACCTON	RFMTA202028IMLB901-7	PIFA	I-PEX		WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)
8	2	ACCTON	RFMTA202028IMLB901-8	PIFA	I-PEX		WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)
9	3	ACCTON	RFMTA202028IMLB901-9	PIFA	I-PEX		WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)
10	4	ACCTON	RFMTA202028IMLB901-10	PIFA	I-PEX		WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)
11	1	ACCTON	GT128V007S-001-1	On board chip	N/A		Bluetooth or Zigbee (Radio 3)

Note 1:

Ant.	Antenna Gain (dBi)						
	WLAN 2.4GHz (Radio 1)						
	2.4GHz	2.45GHz	2.4835GHz				
1	5.18	5.54	4.85				
2	4.30	4.91	4.16				
Ant.	WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)						
	5.2GHz	5.3GHz	5.6GHz	5.785GHz			
3	4.53	4.73	5.43	5.95			
4	4.42	4.45	5.71	4.41			
5	4.41	4.77	3.91	3.44			
6	4.30	4.6	3.73	4.00			
Ant.	WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)						
	5.6GHz	5.785GHz	5.885GHz	6.175GHz	6.475GHz	6.695GHz	6.995GHz
7	7.62	7.57	7.21	6.61	6.48	5.84	4.61
8	4.54	4.69	4.98	5.24	4.56	4.54	4.66
9	5.08	6.56	5.89	7.48	6.00	5.31	4.96
10	6.95	6.90	5.49	6.12	4.54	4.71	4.98
Bluetooth or Zigbee (Radio 3)							
11	4.3						

Item	Directional Gain (dBi)						
	WLAN 2.4GHz (Radio 1)						
	2.4GHz	2.45GHz	2.4835GHz				
2T1S	6.91	6.86	6.04				
2T2S	5.18	5.54	4.85				
Item	WLAN 5GHz UNII 1-3 or UNII 1-2A (Radio 2)						
	5.2GHz	5.3GHz	5.6GHz	5.785GHz			
4T1S	8.62	9.31	9.18	8.43			
4T2S	5.62	6.31	6.18	5.95			
4T4S	4.53	4.77	5.71	5.95			
Item	WLAN 5GHz UNII 2C-4 or WLAN 6GHz (Radio 4)						
	5.6GHz	5.785GHz	5.885GHz	6.175GHz	6.475GHz	6.695GHz	6.995GHz
4T1S	8.64	9.25	8.37	8.52	7.67	8.34	6.87
4T2S	7.62	7.57	7.21	7.48	6.48	5.84	4.98
4T4S	7.62	7.57	7.21	7.48	6.48	5.84	4.98

Note 2: The above information (excepting Ant. 1-10 antenna gain and directional gain) was declared by manufacturer.

Note 3: Radio 1, 2, 4: Maximum Directional Gain following KDB662911 D03.

For Radio 1:
For 2.4GHz IEEE 802.11b/g/n/VHT/ax/be mode (2TX/2RX)
Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.
For Radio 2:
For 5GHz (UNII 1-3 or UNII 1-2A) IEEE 802.11a/n/ac/ax/be mode (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.
For Radio 3:
For Bluetooth or Zigbee mode (1TX/1RX)
Only Port 1 can be used as transmitting/receiving antenna.
For Radio 4:
For 5GHz (UNII 2C-4) IEEE 802.11a/n/ac/ax/be mode (4TX/4RX)
For 6GHz IEEE 802.11ax/be mode (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 Radio function

Function / Radio	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth	Zigbee
1	V	-	-	-	-
2	-	V (UNII 1-3 or UNII 1-2A)	-	-	-
3	-	-	-	V	V
4	-	V (UNII 2C-4)	V	-	-

Note 1: The above information was declared by manufacturer.

Note 2: For WLAN 5GHz: The Radio 2 and 4 can't operate at the same frequency simultaneously.

1.1.5 Table for EUT Operation Function

Mode	Operation Function
1	R1: 2.4GHz + R2: 5GHz Full Band + R3: Bluetooth + R4: 6GHz
2	R1: 2.4GHz + R2: 5GHz Full Band + R3: Zigbee + R4: 6GHz
3	R1: 2.4GHz + R2: 5GHz Low Band+ R3: Bluetooth + R4: 5GHz High band
4	R1: 2.4GHz + R2: 5GHz Low Band+ R3: Zigbee + R4: 5GHz High band

Note 1: The R means Radio.

Full Band means UNII 1-3.

Low Band means UNII 1-2A.

High Band means UNII 2C-4.

Note 2: The above information was declared by manufacturer.

1.2 Accessories

Accessories
Wall-mounted rack 1*1
Wall-mounted rack 2*1

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	Device	Cambium	X7-55X	Z8H89FT0086

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	DF02-CB	Simmon Cheng	21.9~22.4 / 57~61	Jan. 14, 2025~ Mar. 13, 2025

2 Test Configuration of EUT

2.1 Test Channel Frequencies Configuration

Test Channel Frequencies Configuration	
IEEE Std.	**Test Channel Freq. (MHz)**
802.11be (EHT20)	5500 MHz
802.11be (EHT40)	5510 MHz
802.11be (EHT80)	5530 MHz
802.11be (EHT160)	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	Conducted measurement at transmit chains 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.
Modulation Mode	802.11be (EHT20), 802.11be (EHT40), 802.11be (EHT80), 802.11be (EHT160)
1	Radio 2
2	Radio 4

Note 1: The PoE is for measurement only, would not be marketed. PoE information as below:

Power	Brand	Model
PoE	Cambium	NET-P30-56IN

Note 2: The USB port cannot be used by the end user, as declared by the manufacturer.

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

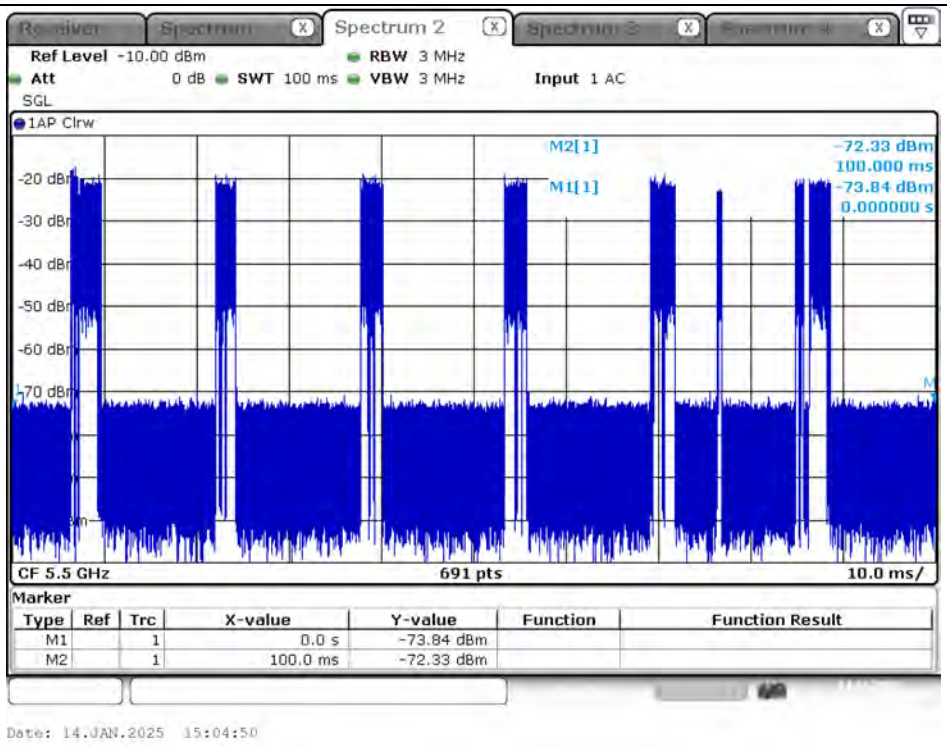
User Access Restrictions
☒ DFS controls (hardware or software) related to radar detection are NOT accessible to the user. Manufacturer statement confirming that information regarding the parameters of the detected Radar Waveforms is not available to the end user.

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.

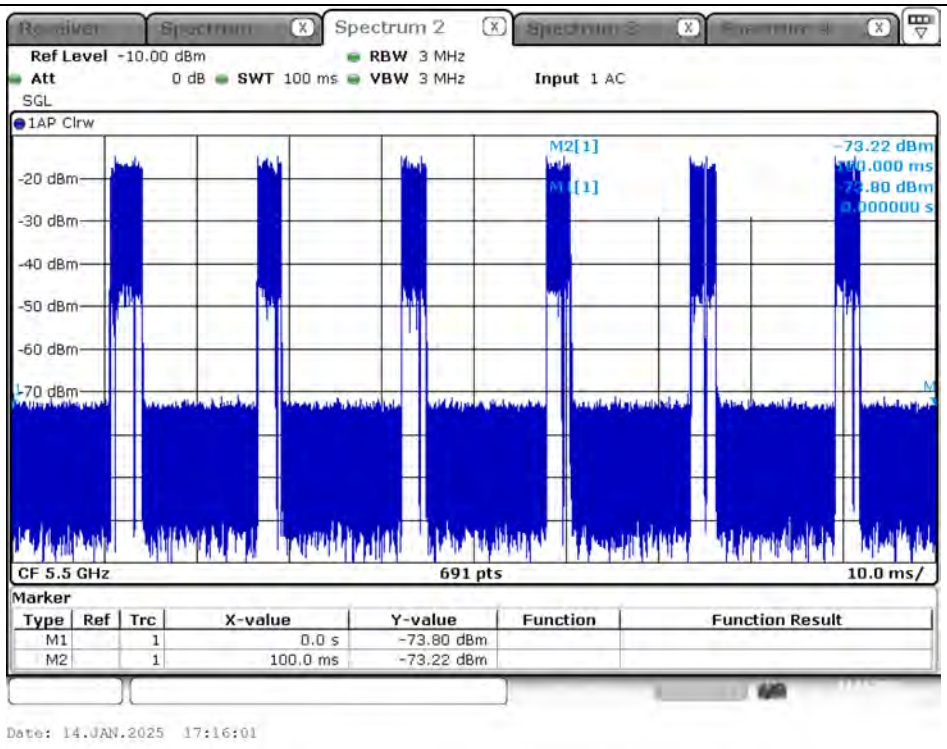
For Radio 2:

17% Loading



For Radio 4:

17% Loading



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

For Radio 2:

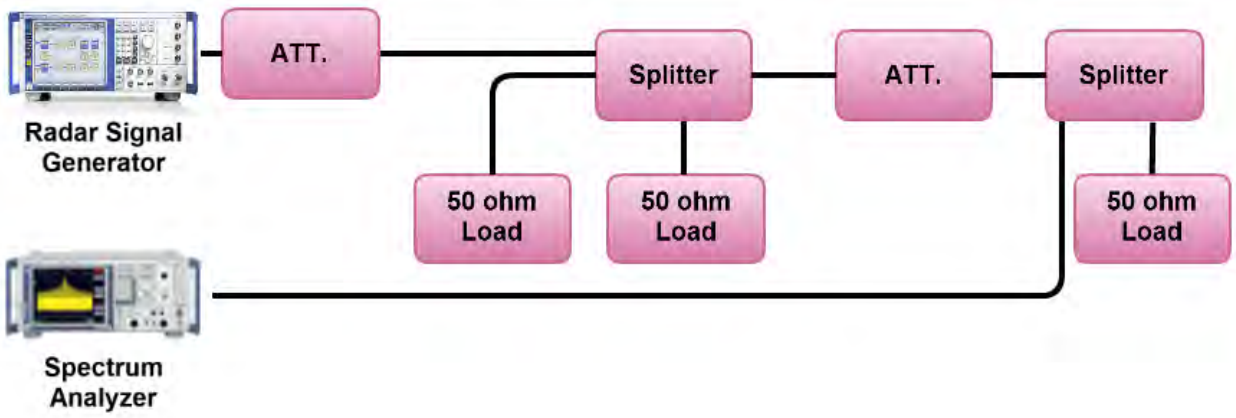
DFS Threshold Level	
DFS Threshold level: -59.27 dBm	☒ at the antenna connector
	☐ in front of the antenna
The Interference **Radar Detection Threshold Level** is *-64 dBm + 3.73 [dBi] + 1 dB* = -59.27 dBm. That had been taken into account the output power range and antenna gain.	

For Radio 4:

DFS Threshold Level	
DFS Threshold level: -58.46 dBm	☒ at the antenna connector
	☐ in front of the antenna
The Interference **Radar Detection Threshold Level** is *-64 dBm + 4.54 [dBi] + 1 dB* = -58.46 dBm. That had been taken into account the output power range and antenna gain.	

3.2.5 Calibration Setup

Master Conducted Calibration Setup

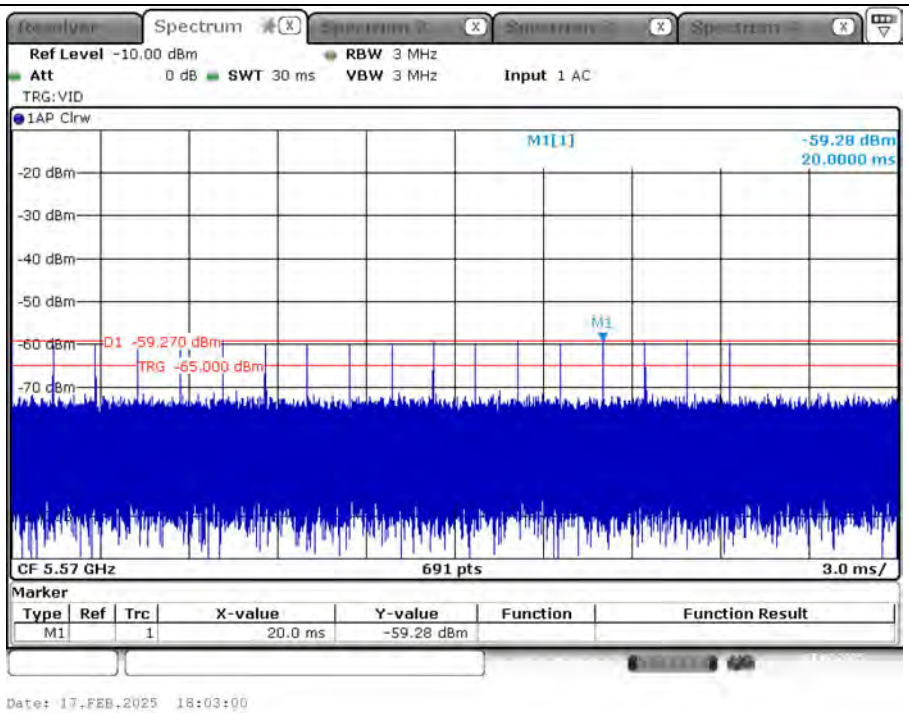


3.2.6 Radar Waveform calibration Plot

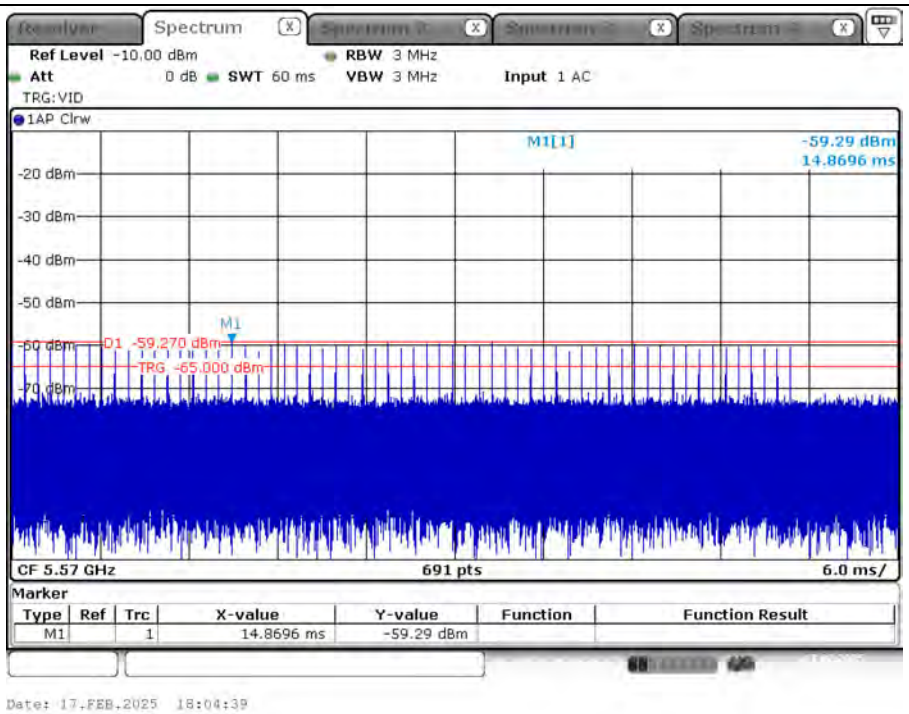
For Radio 2:

Test Frequency: 5570 MHz

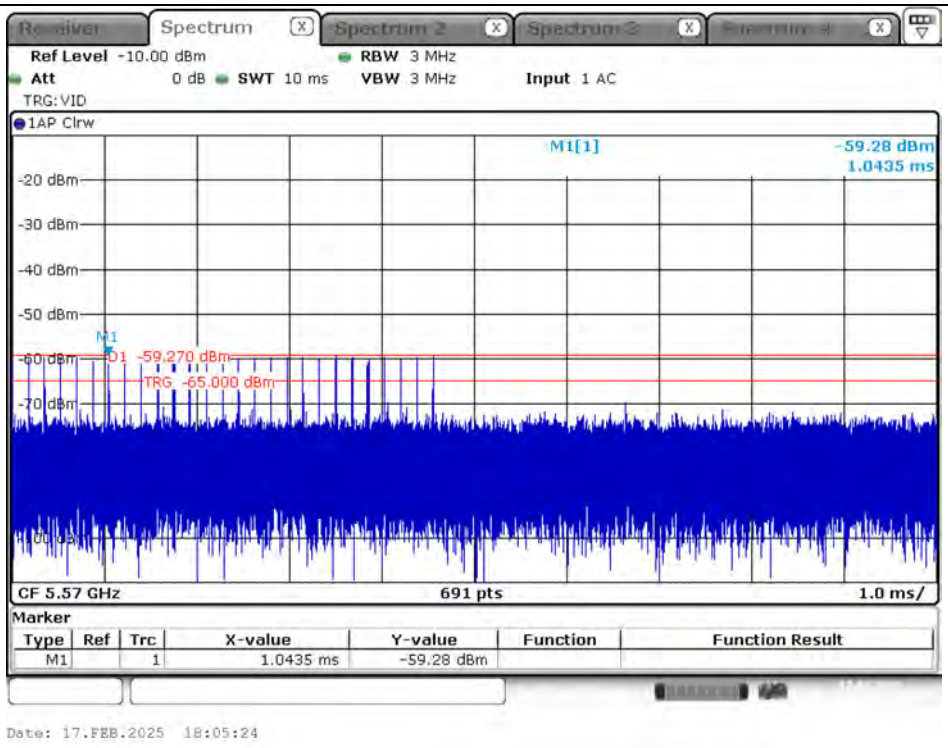
Radar #0 DFS detection threshold level



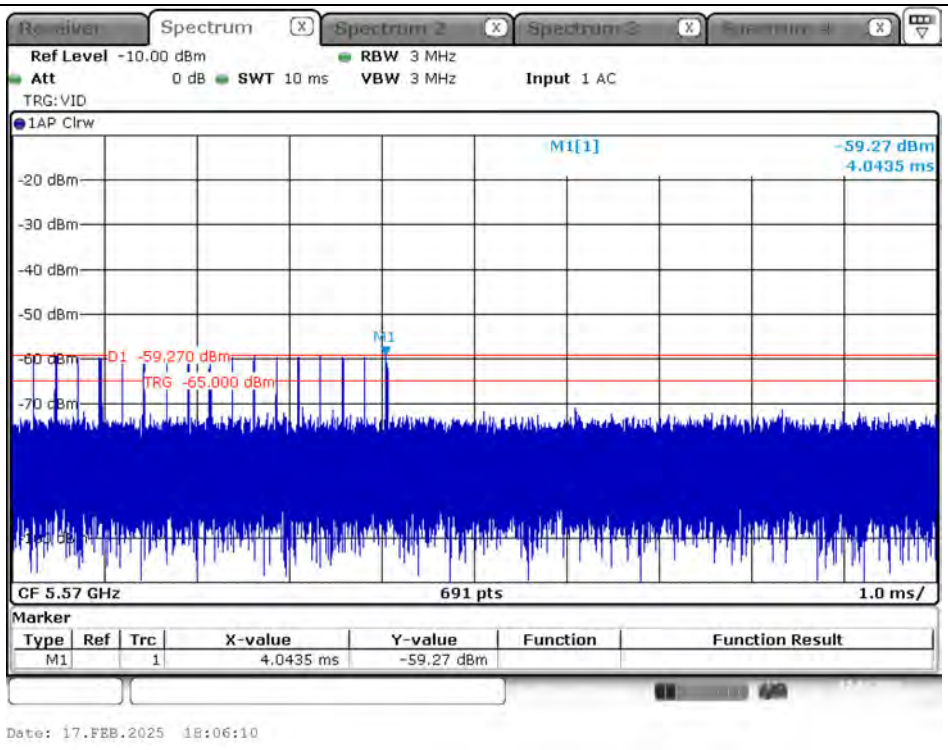
Radar #1 DFS detection threshold level



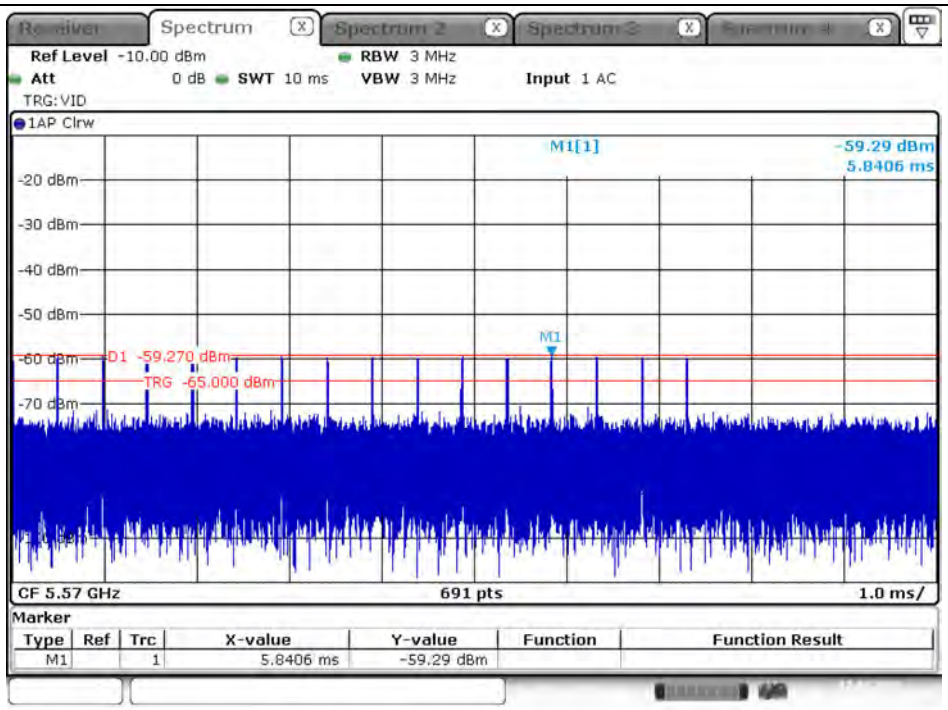
Radar #2 DFS detection threshold level



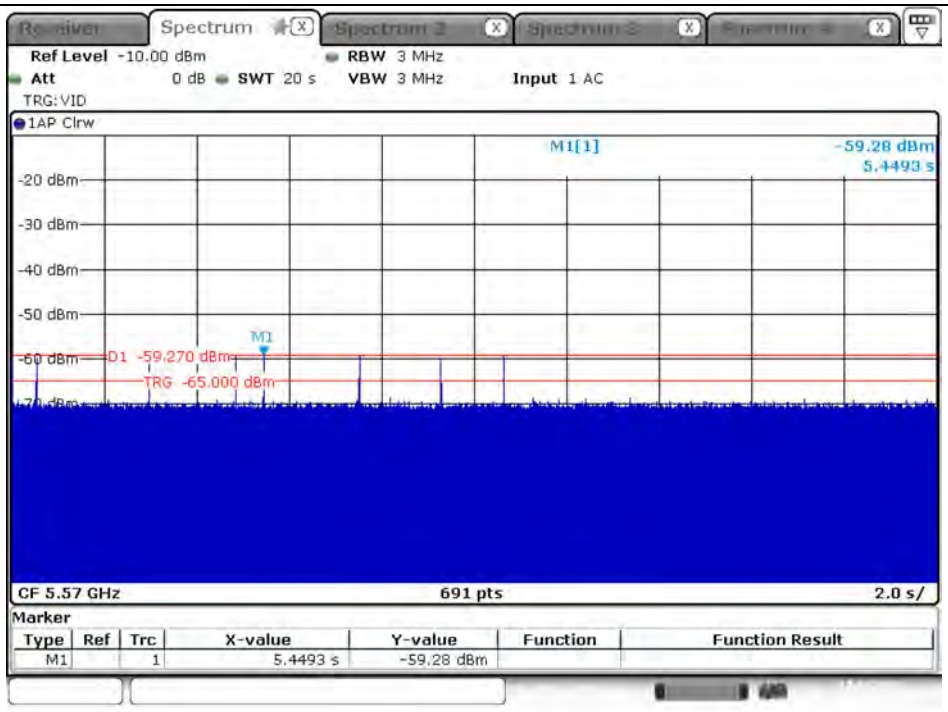
Radar #3 DFS detection threshold level



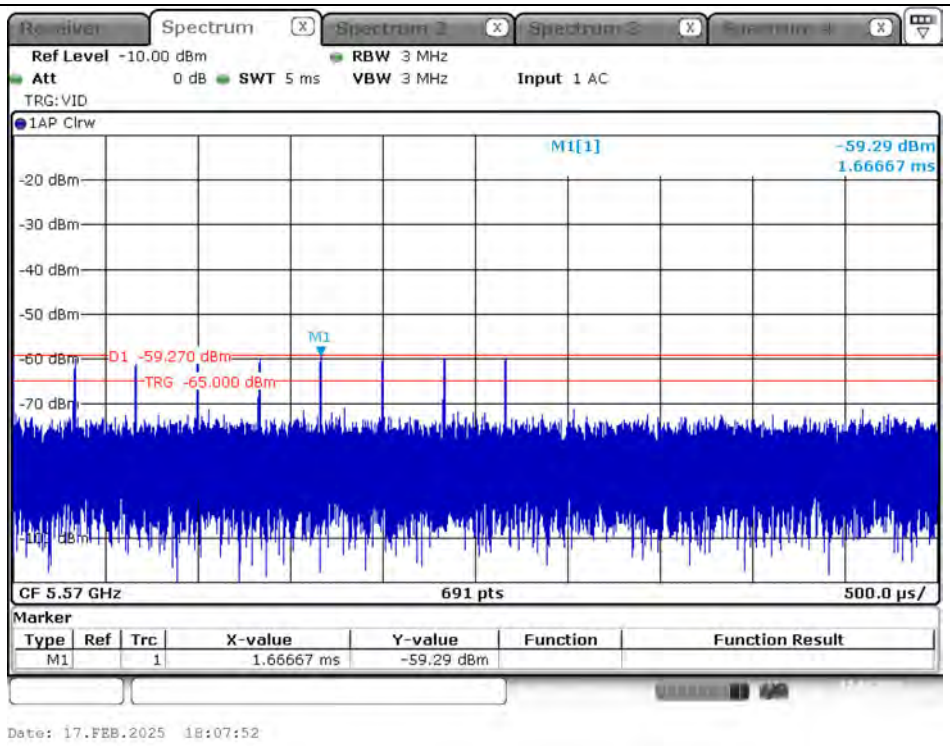
Radar #4 DFS detection threshold level



Radar #5 DFS detection threshold level



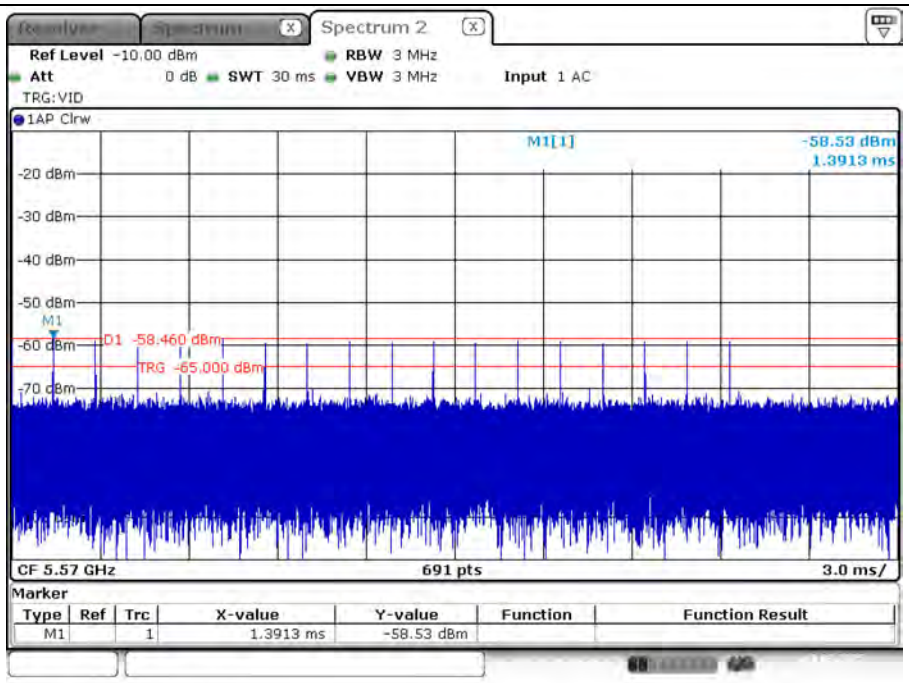
Radar #6 DFS detection threshold level



For Radio 4:

Test Frequency: 5570 MHz

Radar #0 DFS detection threshold level



Radar #1 DFS detection threshold level