

# RF TEST REPORT

**Report No.:** 20250317G05164X-W8

**Product Name:** 5G Mobile Phone

**Model No.:** VTL-202402

**FCC ID:** 2BGHD-VTL202402

**IC:** 32468-VTL202402

**Applicant:** Chengdu Xiaochen Technology Co., Ltd

3rd Floor, Building B15, Ganzhizhongguo Chengdu Center, No. 777

**Address:** Huafu Avenue Shuangliu County, Chengdu City, Sichuan province, China

**Dates of Testing:** 03/18/2025 - 05/12/2025

**Issued by:** CCIC Southern Testing Co., Ltd.

**Lab Location:** Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Query E-Mail: manager@ccic-set.com

Feedback E-Mail: integrity@ccic-set.com

Report Query Tel: 0755-26627338

Feedback Tel: 0755-86185963

This test report consists of 23 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CCIC-SET. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CCIC-SET within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.

## Test Report

**Product**.....: 5G Mobile Phone

**Brand Name**.....: Vertu

**Applicant**.....: Chengdu Xiaochen Technology Co., Ltd

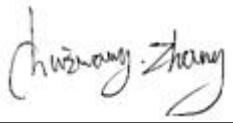
**Applicant Address**.....: 3rd Floor, Building B15, Ganzhizhongguo Chengdu Center, No. 777 Huafu Avenue Shuangliu County, Chengdu City, Sichuan province, China

**Manufacturer**.....: VERTU INTERNATIONAL CORPORATION LIMITED

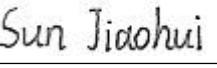
**Manufacturer Address**.....: Chase Business Centre 39-41 Chase Side London England N14 5BP

**Test Standards**.....: 47 CFR Part 15 Subpart E 15.407  
RSS-247 Issue 3, Aug 2023

**Test Result**.....: Pass

**Tested by** .....:  2025.05.12

Chuiwang Zhang, Test Engineer

**Reviewed by** .....:  2025.05.12

Sun Jiaohui, Senior Engineer

**Approved by** .....:  2025.05.12

Chris You, Manager

## Table of Contents

<b>1. GENERAL INFORMATION .....</b>	<b>5</b>
1.1. EUT Description .....	5
1.2. Test Standards and Results .....	6
1.3. Laboratory Facilities and Accreditation Certificate .....	7
<b>2. U-NII DFS RULE REQUIREMENTS .....</b>	<b>8</b>
2.1. Working modes and required test items .....	8
2.2. Test limits and radar signal parameters .....	9
<b>3. TEST PROCEDURE .....</b>	<b>12</b>
3.1. DFS Test Setup configuration .....	12
3.2. BVADT DFS Measurement system .....	13
<b>4. U-NII DFS RULE REQUIREMENTS .....</b>	<b>21</b>
<b>5. LIST OF MEASURING EQUIPMENT .....</b>	<b>23</b>

Change History		
Issue	Date	Reason for change
1.0	2025.05.12	First edition

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	5G Mobile Phone	
Model No.	VTL-202402	
Hardware Version	P10	
Software Version	15.0.0_4.02.02.01	
Operation	<input type="checkbox"/> Master device	
	<input type="checkbox"/> Slaver device with radar detection function	
	<input checked="" type="checkbox"/> Slaver device without radar detection function	
TPC	Not support	
EUT supports Radios application	WLAN5.0GHz 802.11a/n/ac/ax/be	
Modulation technology	802.11a/n/ac: OFDM 802.11ax/be: OFDM, OFDMA	
Modulation Type	802.11a: BPSK/QPSK/16QAM/64QAM	
	802.11n: BPSK/QPSK/16QAM/64QAM	
	802.11ac: BPSK/QPSK/16QAM/64QAM/256QAM	
	802.11ax: BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM	
	802.11be: BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM/4096QAM	
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6 Mbps	
	802.11n: up to 300 Mbps (2x2MIMO)	
	802.11ac: up to 1733.334 Mbps (2x2MIMO)	
	802.11ax: up to 2401.96 Mbps (2x2MIMO)	
	802.11be: up to 2882.2 Mbps (2x2MIMO)	
Frequency Range	UNII-1: 5150 ~ 5290MHz	
	UNII-2a: 5290 ~ 5350MHz	
	UNII-2c: 5500 ~ 5700MHz	
	UNII-3: 5725 ~ 5850MHz	
Channel Bandwidth	802.11a: 20MHz	
	802.11n: 20MHz/40MHz	
	802.11ac/ax/be: 20MHz/40MHz/80MHz/160MHz	
Antenna Type	Internal Antenna	
Antenna Gain	Antenna 4: -1.0dBi	
	Antenna 6: -2.0dBi	
Power supply	Upper:	Rechargeable Li-ion Polymer Battery DC3.93V/3370mAh
	Bottom:	Rechargeable Li-ion Polymer Battery DC3.93V/885mAh

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

## 1.2. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart E and RSS 247 Issue 2:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E §15.407	Radio Frequency Devices
2	RSS-247 Issue 3, Aug 2023	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
3	KDB Publication 905462 D02v02	UNII DFS Compliance Procedures New Rules
4	KDB Publication 905462 D03v01	UNII Clients Without Radar Detection New Rules

Test detailed items/section required by FCC/IC rules and results are as below:

No.	FCC Rule	IC Rule	Description	Result
1	15.407 (h)(2)	RSS-247, 6.3	Channel Move Time	PASS
2			Channel Closing Transmission Time	PASS
3			Non- Occupancy Period	PASS



### 1.3. Laboratory Facilities and Accreditation Certificate

#### CCIC-SET Lab 1

Address: Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

#### **FCC-Registration No.: CN1283**

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until Jun. 30th, 2025.

#### **ISED Registration: 11185A, CAB number: CN0064**

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

#### **A2LA Code: 5721.01**

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

#### **CNAS L1659**

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

#### CCIC-SET Lab 4

Address: No.125, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province, China

#### **CNAS L1659**

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

## 2. U-NII DFS Rule Requirements

### 2.1. Working modes and required test items

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

Table 1: Applicability of DFS Requirements prior to use a channel

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

Table 2: Applicability of DFS Requirements during normal operation

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

## 2.2. Test limits and radar signal parameters

DFS Detection thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Note 1 and 2)
$\geq 200$ milliwatt	-64 dBm
< 200 milliwatt	-62 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	100% of the UNII transmission power bandwidth. See Note 3.

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

- For the Short Pulse Radar Test Signals this instant is the end of the Burst.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
- For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

### Parameters of DFS test signals

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

### Short pulse radar test waveforms

Radar Type	Pulse width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	<p>Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a</p> <p>Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A</p>	<p>Roundup <math display="block">\left\lceil \left( \frac{1}{360} \cdot \frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\rceil</math></p>	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.

## 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 Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

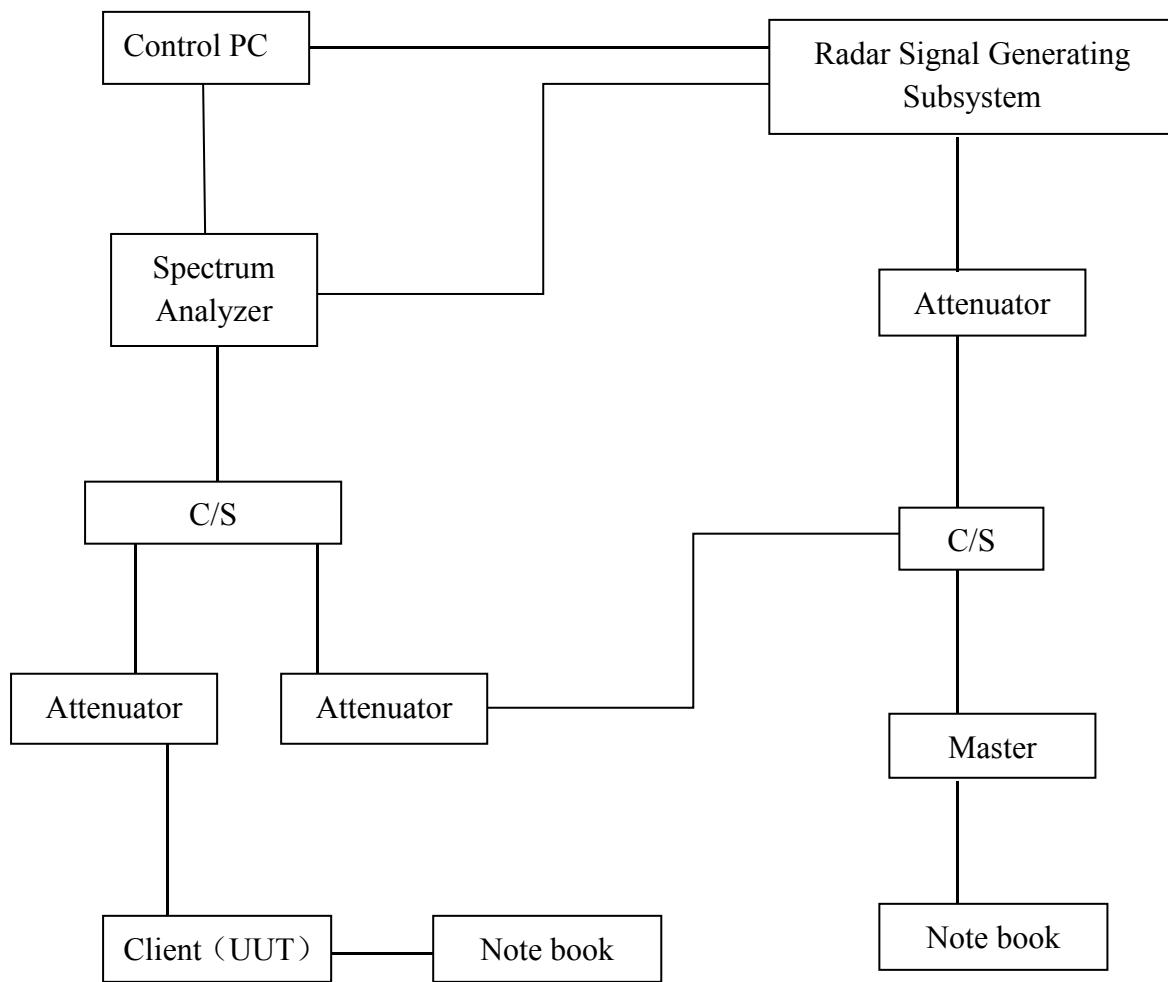
## Frequency hopping radar test waveform

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

### 3. Test Procedure

#### 3.1. DFS Test Setup configuration

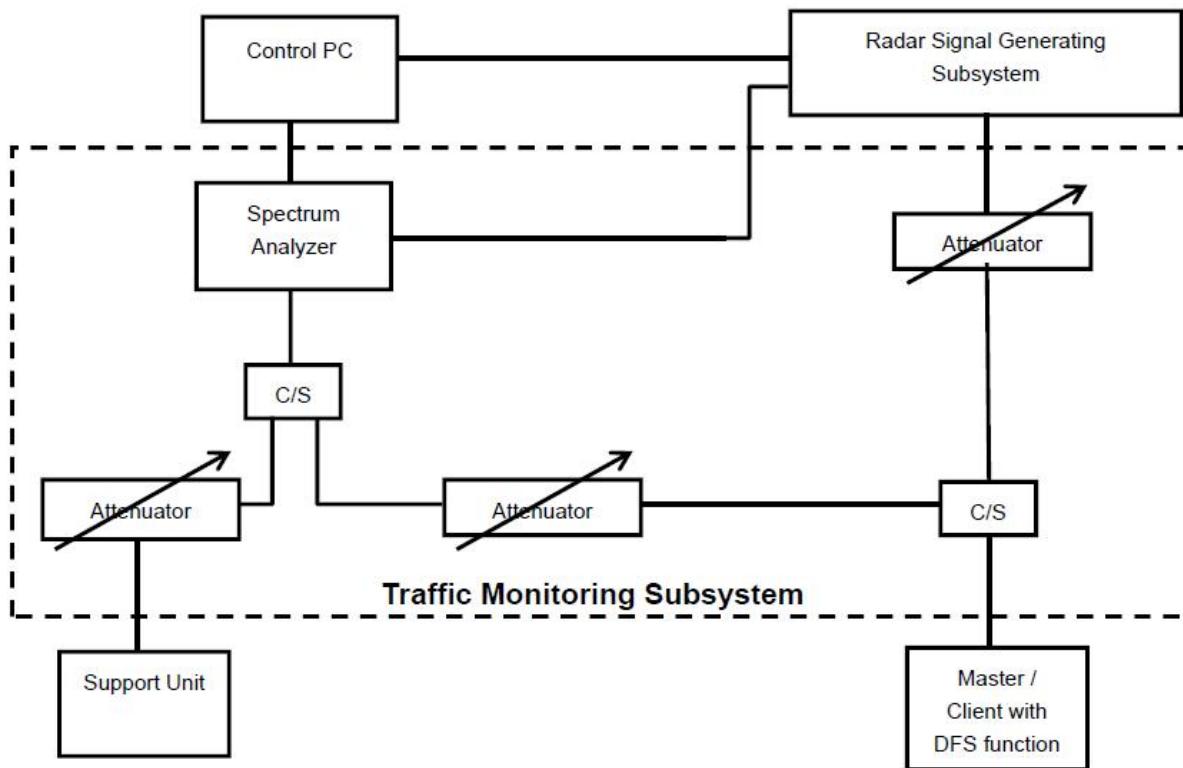
##### Client without Radar Detection Mode



The UUT is a UNII device operating in client mode without radar detection. The radar test signals are injected into the master device.

### 3.2. BVADT DFS Measurement system

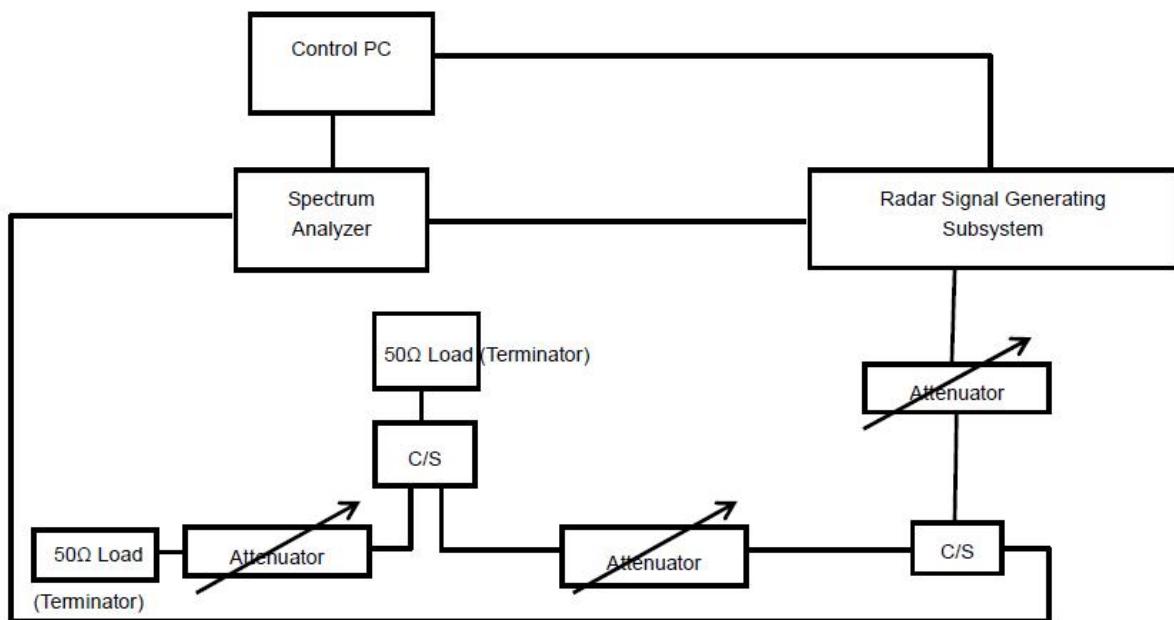
A complete BVADT DFS Measurement System consists of two subsystems: (1) the Radar Signal Generating Subsystem and (2) the Traffic Monitoring Subsystem. The control PC is necessary for generating the Radar waveforms in Table 1, 2. The traffic monitoring subsystem is specified to the type of unit under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



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

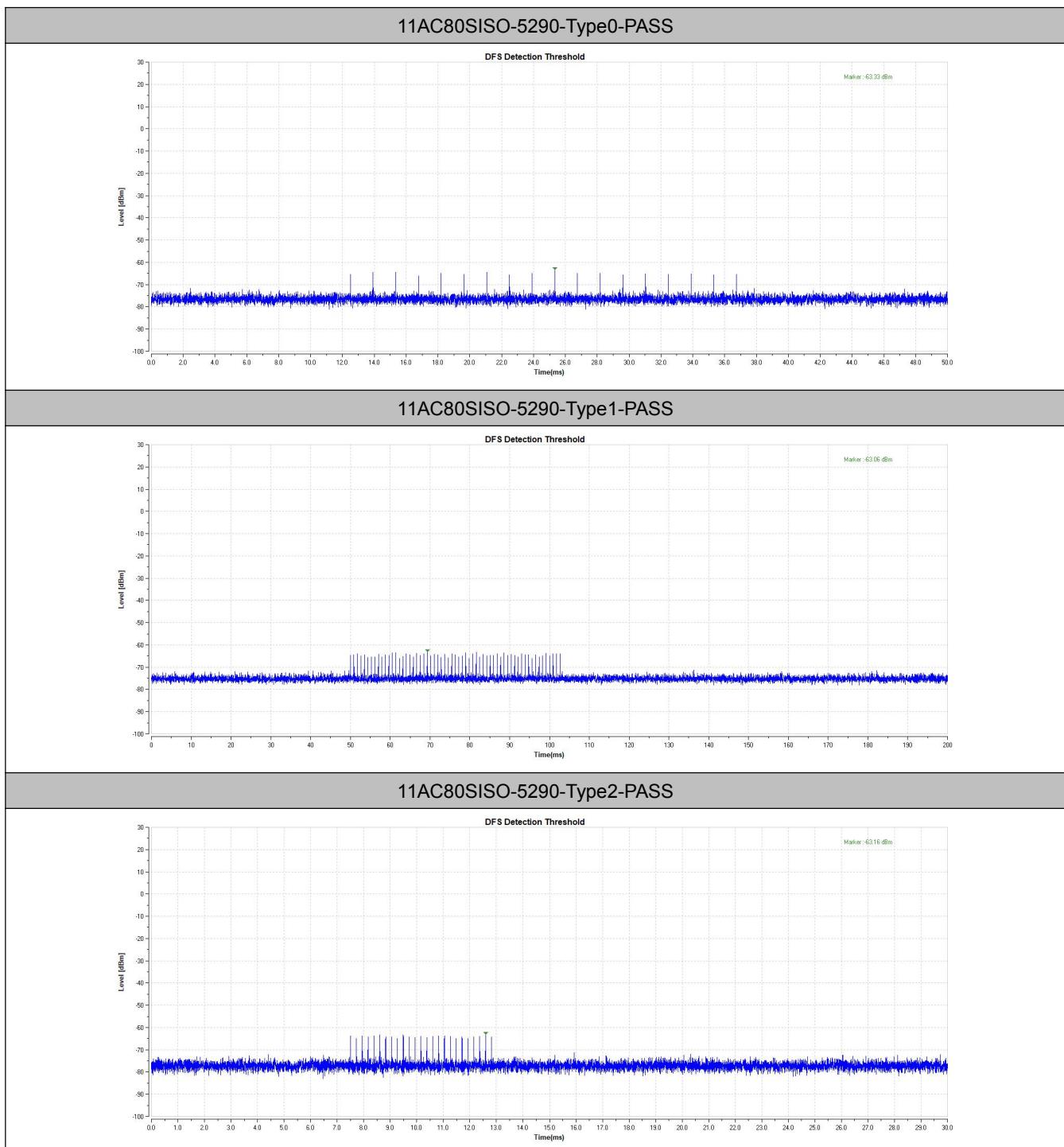
**Calibration of DFS detection threshold level:**

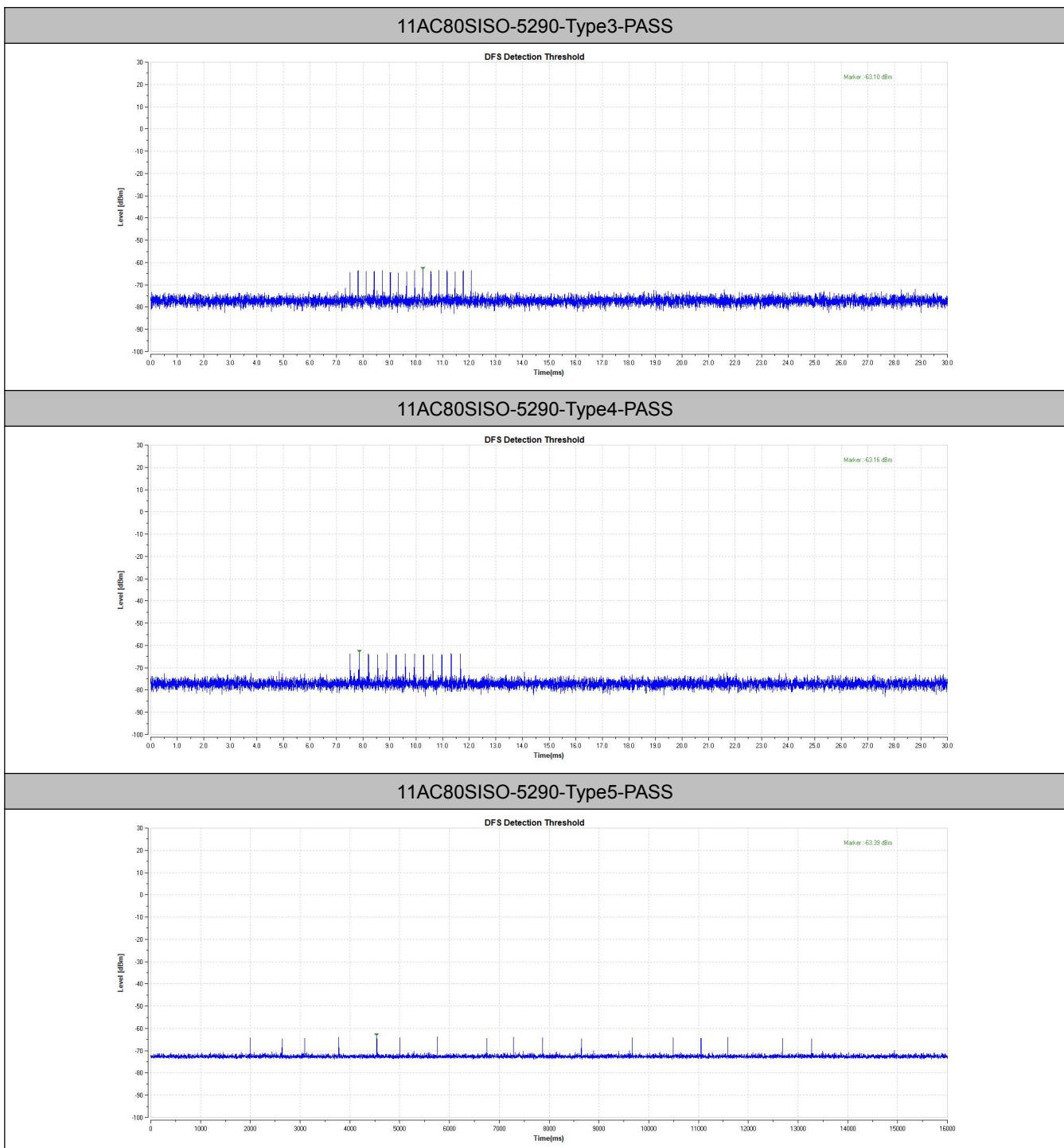
The measured channel is 5290 MHz and 5530MHz in 80MHz Bandwidth. The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) or Client Device with Radar Detection, measured the channel closing transmission time and channel move time.

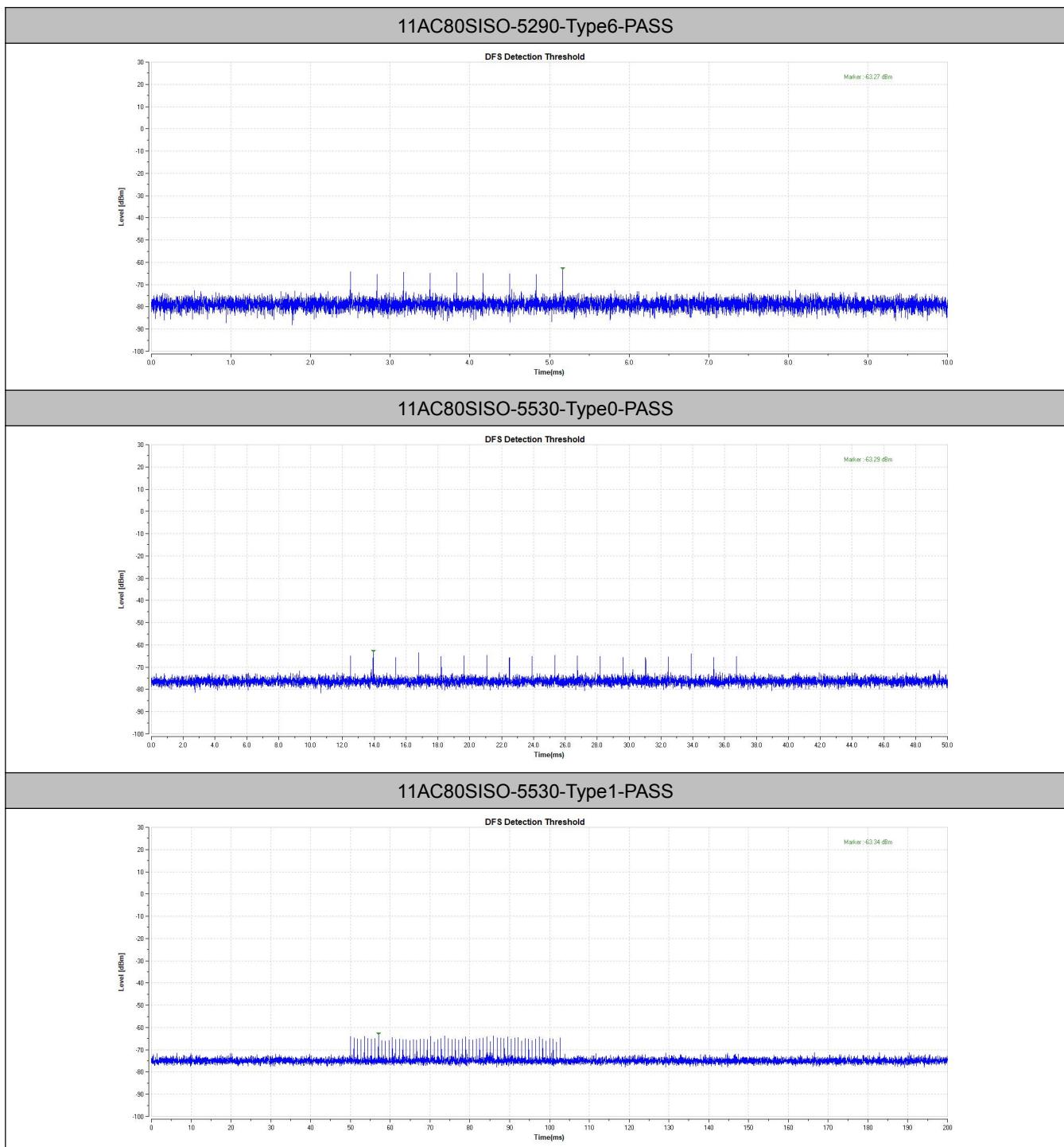
**Conducted setup configuration of calibration of DFS detection threshold level**

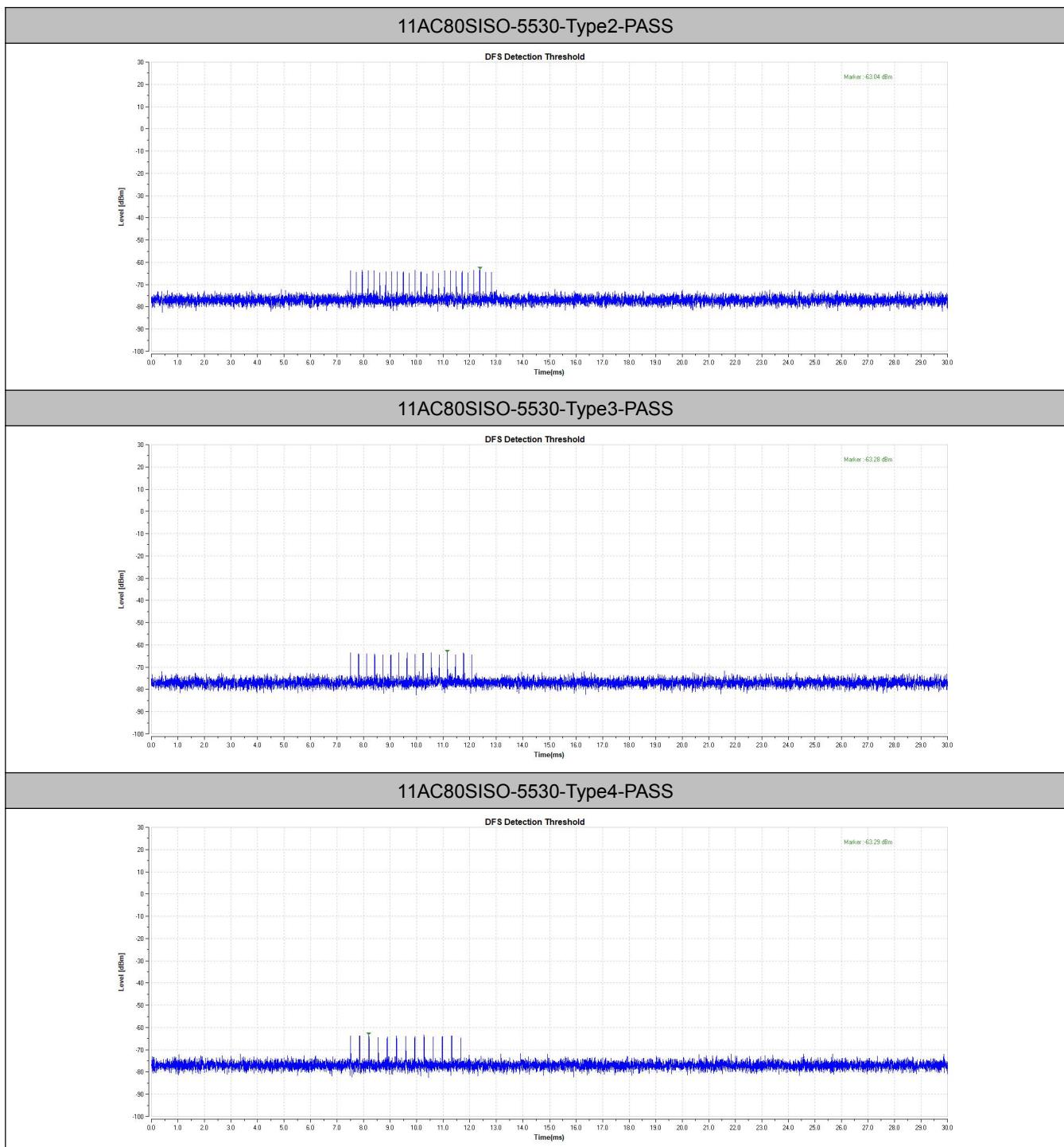
**Calibration plots for each of the required radar waveforms**

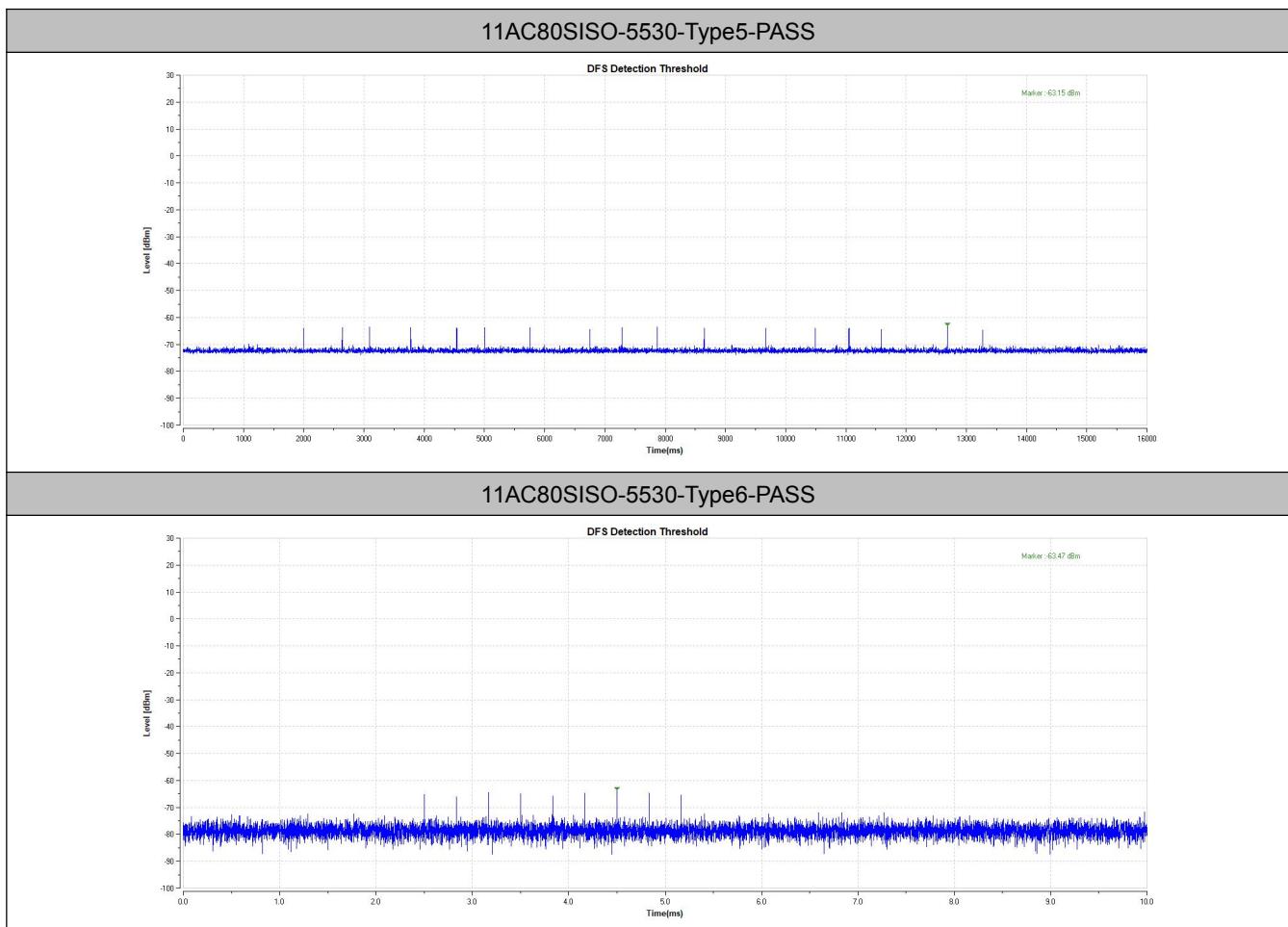
Test Mode	Frequency[dbm]	Radar Type	Result	Limit[dbm]	Verdict
11AC80SISO	5290	Type0	-63.33	-63.00	PASS
11AC80SISO	5290	Type1	-63.06	-63.00	PASS
11AC80SISO	5290	Type2	-63.16	-63.00	PASS
11AC80SISO	5290	Type3	-63.10	-63.00	PASS
11AC80SISO	5290	Type4	-63.16	-63.00	PASS
11AC80SISO	5290	Type5	-63.39	-63.00	PASS
11AC80SISO	5290	Type6	-63.27	-63.00	PASS
11AC80SISO	5530	Type0	-63.29	-63.00	PASS
11AC80SISO	5530	Type1	-63.34	-63.00	PASS
11AC80SISO	5530	Type2	-63.04	-63.00	PASS
11AC80SISO	5530	Type3	-63.28	-63.00	PASS
11AC80SISO	5530	Type4	-63.29	-63.00	PASS
11AC80SISO	5530	Type5	-63.15	-63.00	PASS
11AC80SISO	5530	Type6	-63.47	-63.00	PASS





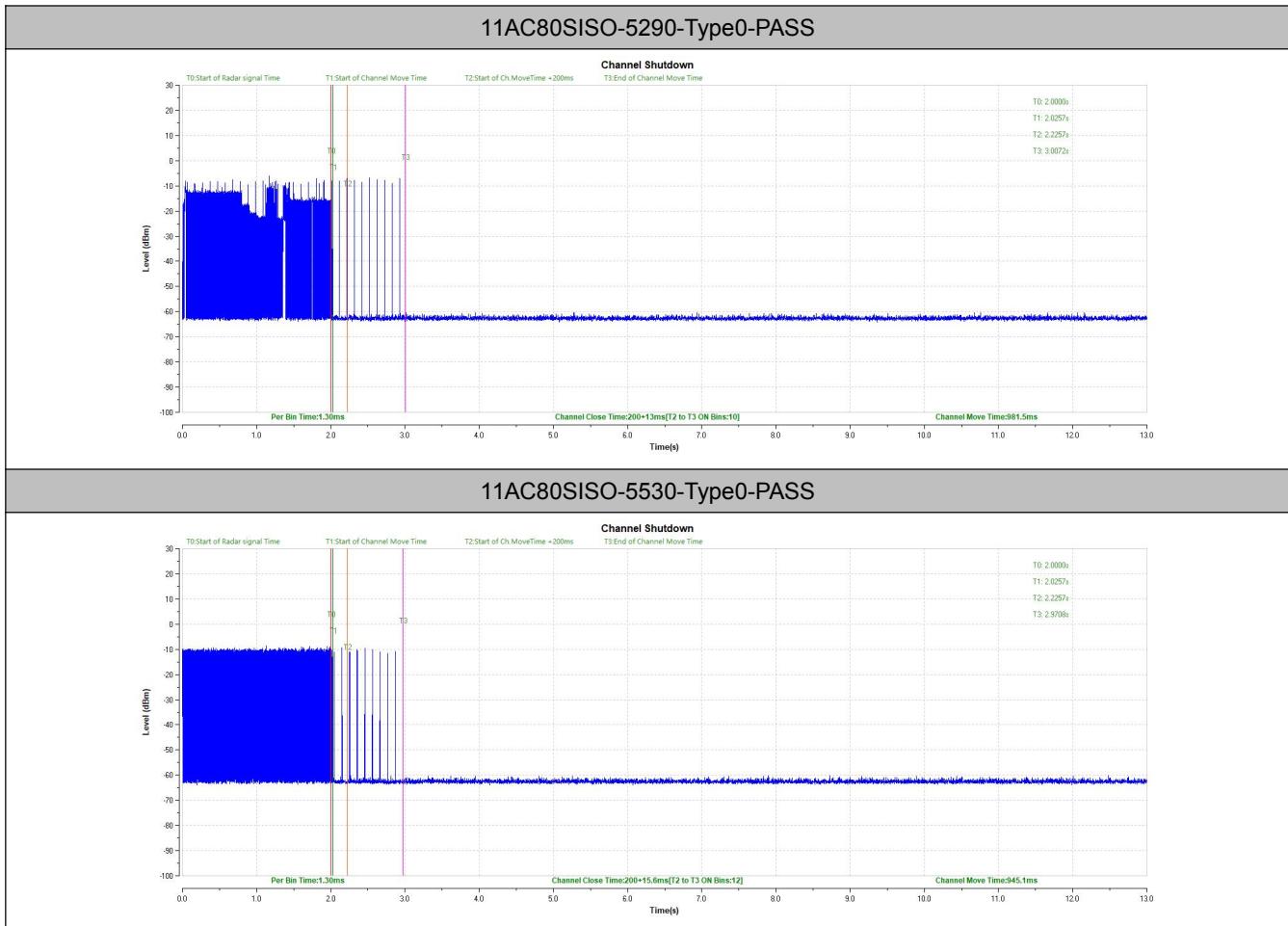




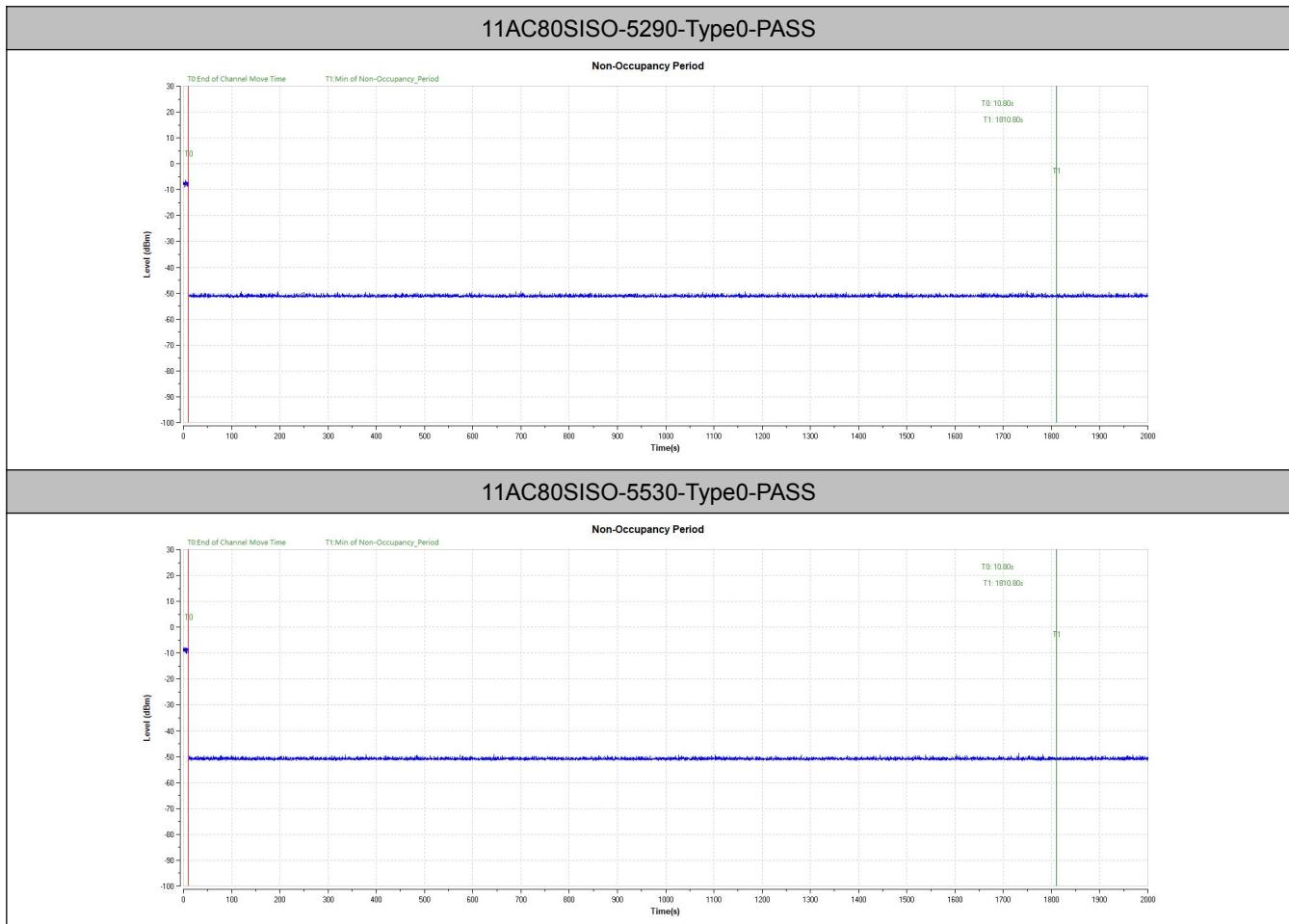


## 4. U-NII DFS Rule Requirements

Test Mode	Frequency[MHz]	CCTT[ms]	Limit[ms]	CMT[ms]	Limit[ms]	Verdict
11AC80SISO	5290	200+13	200+60	981.5	10000	PASS
11AC80SISO	5530	200+15.6	200+60	945.1	10000	PASS



Test Mode	Frequency[MHz]	Non-Occupancy Period	Limit[s]	Verdict
11AC80SISO	5290	see test graph	≥1800	PASS
11AC80SISO	5530	see test graph	≥1800	PASS



## 5. List of measuring equipment

DFS Test System						
No.	Equipment Name	Serial No.	Model No.	Manufacturer	Cal Date	Due Date
1	Spectrum Analyzer	A140801886	FSV-40	R&S	2024.08.22	2025.08.21
2	Vector Signal Generator	A240604406	SMBV100B	R&S	2024.06.19	2025.06.18

Support Unit used in test configuration and system			
Equipment	Brand Name	Model Name	FCC ID
WLAN AP	TP-LINK	Archer BE800	2AXJ4BE800
Notebook	HP	TPN-Q221	N/A

\*\* END OF REPORT \*\*