

TEST REPORT

Application No.: BTEK241108034A01-T03
Applicant: Shenzhen Union Aurora Technology Co., Ltd.
Address of Applicant: 1403A, Building 1, COFCO Innovation Park, Zone 67, Xingdong Community, Xin'an Street, Bao'an District, Shenzhen
Manufacturer: Shenzhen Union Aurora Technology Co., Ltd.
Address of Manufacturer: 1403A, Building 1, COFCO Innovation Park, Zone 67, Xingdong Community, Xin'an Street, Bao'an District, Shenzhen

Equipment Under Test (EUT):
EUT Name: Smart Projector
Test Model.: N1 pro
Adding Model(s): P601,P602,P603,P605,P606,P608,P609,N1,N1 Ultra ,N1Se,N1 Mini, N2,N2Pro,N2 Ultra,N2Se,N2 Mini,N3,N3Pro,N3 Ultra,N3Se,N3Mini, N5,N5Pro,N5 Ultra,N5Se,N5Mini,N6,N6Pro,N6 Ultra,N6Se,N6Mini, N8,N8Pro,N8 Ultra,N8Se,N8Mini N9,N9Pro,N9 Ultra,N9Se,N9Mini, M1,M1Pro,M1 Ultra,M1Se,M1 Mini,M2,M2Pro,M2 Ultra,M2Se,M2 Mini, M3,M3Pro,M3 Ultra,M3Se,M3 Mini,M5,M5Pro,M5 Ultra,M5Se,M5 Mini, M6,M6Pro,M6 Ultra,M6Se,M6 Mini,M8,M8Pro,M8 Ultra,M8Se,M8 Mini, M9,M9Pro,M9 Ultra,M9Se,M9 Mini,P1,P1Pro,P1 Ultra,P1Se,P1 Mini, P2,P2Pro,P2 Ultra,P2Se,P2 Mini,P3,P3Pro,P3 Ultra,P3Se,P3Mini, P5,P5Pro,P5 Ultra,P5Se,P5Mini,P6,P6Pro,P6 Ultra,P6Se,P6Mini, P8,P8Pro,P8 Ultra,P8Se,P8Mini,P9,P9Pro,P9 Ultra,P9Se,P9Mini, X1,X1Xro,X1 Ultra,X1Se,X1 Mini,X2,X2Xro,X2 Ultra,X2Se,X2 Mini, X3,X3Xro,X3 Ultra,X3Se,X3Mini,X5,X5Xro,X5 Ultra,X5Se,X5Mini, X6,X6Xro,X6 Ultra,X6Se,X6Mini,X8,X8Xro,X8 Ultra,X8Se,X8Mini, X9,X9Xro,X9 Ultra,X9Se,X9Mini,U1,U1Uro,U1 Ultra,U1Se,U1 Mini, U2,U2Uro,U2 Ultra,U2Se,U2 Mini,U3,U3Uro,U3 Ultra,U3Se,U3Mini, U5,U5Uro,U5 Ultra,U5Se,U5Mini,U6,U6Uro,U6 Ultra,U6Se,U6Mini, U8,U8Uro,U8 Ultra,U8Se,U8Mini,U9,U9Uro,U9 Ultra,U9Se,U9Mini, V1,V1Vro,V1 Vltra,V1Se,V1 Mini,V2,V2Vro,V2 Vltra,V2Se,V2 Mini, V3,V3Vro,V3 Vltra,V3Se,V3Mini,V5,V5Vro,V5 Vltra,V5Se,V5Mini, V6,V6Vro,V6 Vltra,V6Se,V6Mini,V8,V8Vro,V8 Vltra,V8Se,V8Mini, V9,V9Vro,V9 Vltra,V9Se,V9Mini,M6,M6S,M6 Pro,M6 Se,M6 Ultra, M6 Mini P200,K200, D200, E200, M200,V200,X200,MX1,MX1 Pro,M1S, N1S,M1S Pro,MX2, MX2 Pro,M2S, N2S,M2SPro,MX3, MX3 Pro, M3S,N3S,M3S Pro, MX4,MX4 Pro,M4S, N4S,M4S Pro, MX5,MX5 Pro,M5S,N5S,M5S Pro,MX6, MX6 Pro,M6S,N6S,M6S Pro, MX7,MX7 Pro,M7S, N7S,M7S Pro,MX8,MX8 Pro,M8S,N8S,M8S Pro, MX9,MX9 Pro,M9S,N9S,M9S Pro

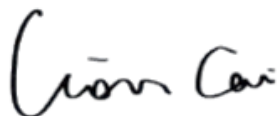
Trade Mark: /



FCC ID: 2BOJD-N1PRO
Standard(s) : 47 CFR Part 15, Subpart E 15.407
789033 D02 General UNII Test Procedures New Rules v02r01
ANSI C63.10:2013
Date of Receipt Sample(s): 2024-12-09
Date of Test: 2024-12-10 to 2025-03-11
Date of Issue: 2025-04-18

Test Result:**Pass***

* In the configuration tested, the EUT complied with the standards specified above.



Lion Cai/ Approved & Authorized
EMC Laboratory Manager



Revision Record			
Version	Issue Date	Revisions	Remarks
V0	2025-04-18	Initial	Valid

Authorized for issue by:			
		Karl Liu	
		Karl Liu / File Editor	
		June Li	
		June Li/Reviewer	

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



2 Test Summary

Standard	Item	Requirement	Result
47 CFR Part 15, Subpart E 15.407	Dynamic Frequency Selection (DFS)	47 CFR Part 15, Subpart E 15.407(h)	Pass

Note:

N/A Mean's not Application.

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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4 General Information

4.1 Details of E.U.T.

Power supply:	AC/DC ADAPTERMODEL:MC80-190530Y INPUT:100-240V~50/60Hz 2.0A OUTPUT:19V=6A
Support Standards:	802.11a, 802.11n(HT20) ,802.11n-HT40, 802.11ac-VHT20, 802.11ac-VHT40,802.11ac-VHT80
Operation Frequency	U-NII-1:5180-5240MHz U-NII-2A: 5260-5320MHz U-NII-2C: 5500-5700MHz U-NII-3: 5745-5825MHz
Modulation Type:	OFDM
Channel Spacing:	802.11a/n(HT20/HT40)/ac(VHT20/VHT40/VHT80): 20MHz/40MHz/80MHz
DFS Function:	Slave
TPC Function:	No Support TPC function
Antenna Type:	FPC Antenna
Antenna Gain:	3.96 dBi
Model(s) Difference Statement	☐ Single Model. ☒ Multi-Models:N1 pro,P601,P602,P603,P605,P606,P608,P609,N1, N1 Ultra ,N1Se,N1 Mini, N2,N2Pro,N2 Ultra,N2Se,N2 Mini,N3,N3Pro, N3 Ultra,N3Se,N3Mini, N5,N5Pro,N5 Ultra,N5Se,N5Mini,N6,N6Pro, N6 Ultra,N6Se,N6Mini, N8,N8Pro,N8 Ultra,N8Se,N8Mini N9,N9Pro, N9 Ultra,N9Se,N9Mini, M1,M1Pro,M1 Ultra,M1Se,M1 Mini,M2,M2Pro, M2 Ultra,M2Se,M2 Mini, M3,M3Pro,M3 Ultra,M3Se,M3 Mini,M5,M5Pro, M5 Ultra,M5Se,M5 Mini, M6,M6Pro,M6 Ultra,M6Se,M6 Mini,M8,M8Pro, M8 Ultra,M8Se,M8 Mini, M9,M9Pro,M9 Ultra,M9Se,M9 Mini,P1,P1Pro, P1 Ultra,P1Se,P1 Mini, P2,P2Pro,P2 Ultra,P2Se,P2 Mini,P3,P3Pro, P3 Ultra,P3Se,P3Mini, P5,P5Pro,P5 Ultra,P5Se,P5Mini,P6,P6Pro, P6 Ultra,P6Se,P6Mini, P8,P8Pro,P8 Ultra,P8Se,P8Mini,P9,P9Pro, P9 Ultra,P9Se,P9Mini, X1,X1Xro,X1 Ultra,X1Se,X1 Mini,X2,X2Xro, X2 Ultra,X2Se,X2 Mini, X3,X3Xro,X3 Ultra,X3Se,X3Mini,X5,X5Xro, X5 Ultra,X5Se,X5Mini, X6,X6Xro,X6 Ultra,X6Se,X6Mini,X8,X8Xro, X8 Ultra,X8Se,X8Mini, X9,X9Xro,X9 Ultra,X9Se,X9Mini,U1,U1Uro, U1 Ultra,U1Se,U1 Mini, U2,U2Uro,U2 Ultra,U2Se,U2 Mini,U3,U3Uro, U3 Ultra,U3Se,U3Mini, U5,U5Uro,U5 Ultra,U5Se,U5Mini,U6,U6Uro, U6 Ultra,U6Se,U6Mini, U8,U8Uro,U8 Ultra,U8Se,U8Mini,U9,U9Uro, U9 Ultra,U9Se,U9Mini, V1,V1Vro,V1 Vltra,V1Se,V1 Mini,V2,V2Vro, V2 Vltra,V2Se,V2 Mini, V3,V3Vro,V3 Vltra,V3Se,V3Mini,V5,V5Vro, V5 Vltra,V5Se,V5Mini, V6,V6Vro,V6 Vltra,V6Se,V6Mini,V8,V8Vro, V8 Vltra,V8Se,V8Mini, V9,V9Vro,V9 Vltra,V9Se,V9Mini,M6,M6S,M6 Pro, M6 Se,M6 Ultra,M6 Mini P200,K200, D200, E200, M200,V200,X200, MX1,MX1 Pro,M1S, N1S,M1S Pro,MX2, MX2 Pro,M2S, N2S,M2SPro,MX3, MX3 Pro,M3S,N3S,M3S Pro, MX4,MX4 Pro,M4S, N4S,M4S Pro, MX5,MX5 Pro,M5S,N5S,M5S Pro,MX6, MX6 Pro,M6S,N6S,M6S Pro, MX7,MX7 Pro,M7S, N7S,M7S Pro,MX8,MX8 Pro,M8S,N8S,M8S Pro, MX9,MX9 Pro,M9S,N9S,M9S Pro Only the model N1 pro was tested. According to the declaration from the applicant, the electrical circuit design, layout, components used, internal



	wiring and functions of other models are identical for the above models, with only difference on Model No
Sample No.:	BTEK241108034A01E-1

4.2 EUT Test Mode and Test Condition

Test Conditions	
Temperature:	22.2 °C
Relative Humidity:	33 %
ATM Pressure:	1010 mbar

Test Mode

Test Mode	Description	Remark
1	802.11ac-HT(80)	5290MHz,5530MHz,
Remark:1.only show the worst case in the test report.		

4.3 Description of Support Units

Auxiliary Equipment			
Description	Manufacturer	Model No.	Serial No.
Wireless-AX5700 Dual-band Gigabit Router	ASUS	RT-AX86U	FCC ID: MSQ-RTAX600
Laptop	Lenovo	Legion Y7000 IRX9	-

4.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
Maximum Conducted output power	± 0.75dB



4.5 Test Location

All tests were performed at:

Shenzhen BANTEK Testing Co., Ltd.

A5&A6, Building B1&B2, No.45 Gangtou Road, Bogang Community, Shajing Street, Bao'an District, Shenzhen, Guangdong, China 518104

Tel: +86 0755-2334 4200 Fax: +86 0755-2334 4200

FCC Registration Number: 264293

Designation Number: CN1356

No tests were sub-contracted.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

RF Conducted					
Equipment	Manufacturer	Model No	Serial No	Cal Date	Cal Due Date
Shielding Room	YIHENG ENECTRONIC	5.5*3.1*3	YH-BT- 220304-03	2025-02-15	2028-02-14
EXA Signal Analyzer	KEYSIGHT	N9020A	MY54230486	2024-06-11	2025-06-10
DC Power Supply	E3632A	E3642A	KR75304416	2024-06-11	2025-06-10
Attenuator	RswTech	SMA-JK-6dB	N/A	2024-06-11	2025-06-10
Attenuator	RswTech	SMA-JK-3dB	N/A	2024-06-11	2025-06-10
RF Control Unit	Techy	TR1029-1	N/A	2024-06-11	2025-06-10
RF Sensor Unit	Techy	TR1029-2	N/A	2024-06-11	2025-06-10
WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	141258	2024-06-11	2025-06-10
MXG Vector Signal Generator	Agilent	N5182A	US46240522	2024-06-11	2025-06-10
Programmable Temperature&Humidity Chamber	GRT	GR-HWX1000	GR22051001	2024-06-11	2025-06-10
Measurement Software	TACHOY	RF TestSoft	N/A	N/A	N/A



6 Dynamic Frequency Selection (DFS)

6.1 Requirement

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	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

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

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.



6.2 Limit

1. DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-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 662911 D01.	

2. DFS Response Requirements

Table 4: 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	Minimum 100% of the U-NII 99% transmission 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 facilitating 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.	

6.3 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.



Table 5 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	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{SEC}}} \right) \right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

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

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 μsec is selected, the number of pulses would be Round up = Round up {17.2} = 18.

$$\left\lceil \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\rceil$$



Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Table 6 – 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

The parameters for this waveforms are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type wave forms, then each additional waveform must also be unique and not repeated from the previous waveforms.



Table 7 – 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

For the Frequency Hopping Radar Type, the same Burst parameters are used for each wave form. The hopping sequence is different for each wave form 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 5250–5724MHz. 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.

6.4 Calibration Of Radar Waveform

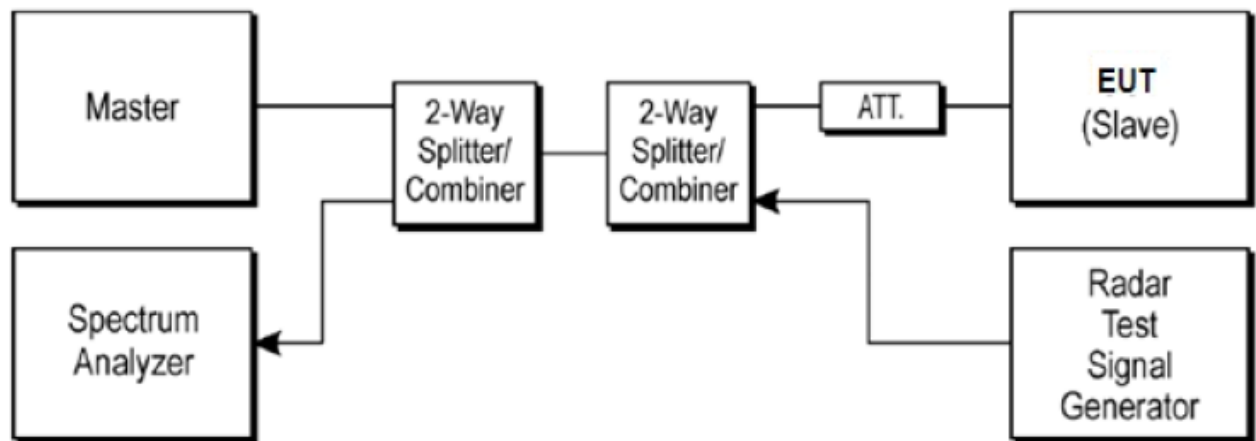
1). Interference threshold values, master or client incorporation in service monitoring. For device power less than 23dBm (E.I.R.P.), the threshold level is -62 dBm at the antenna port after correction for antenna gain and procedural adjustments.

Because of conducted measurement performed, the calibration power from radar signal generator to antenna port of DFS test equipment is -62 dBm.

Maximum Transmit Power	Value
> 200 mW	-64 dBm
< 200 mW	-62 dBm

The radar Detection Threshold, lowest antenna gain is the parameter of interference radar DFS detection threshold.

6.5 Test Configuration

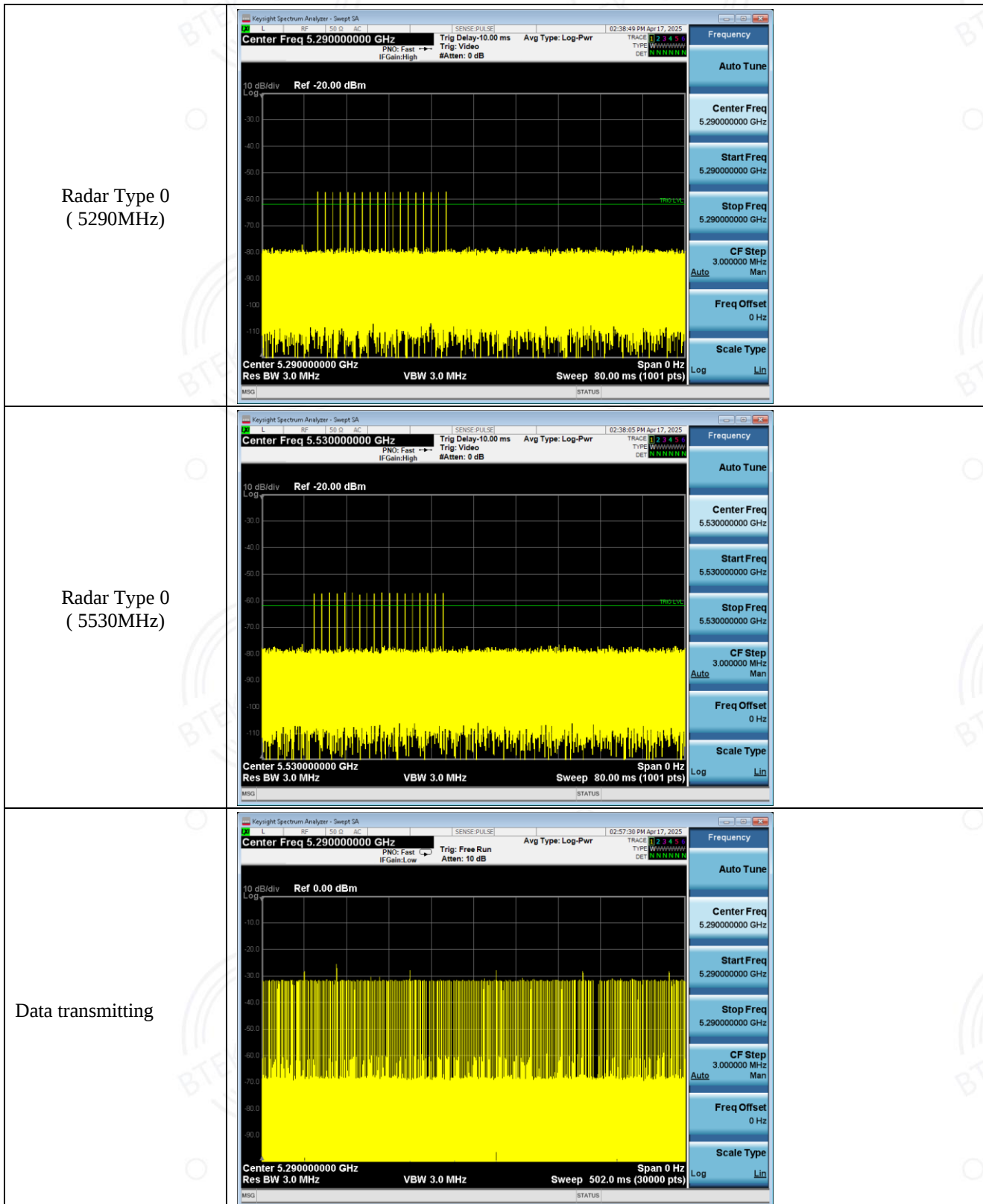


6.6 Measurement Procedure and Data

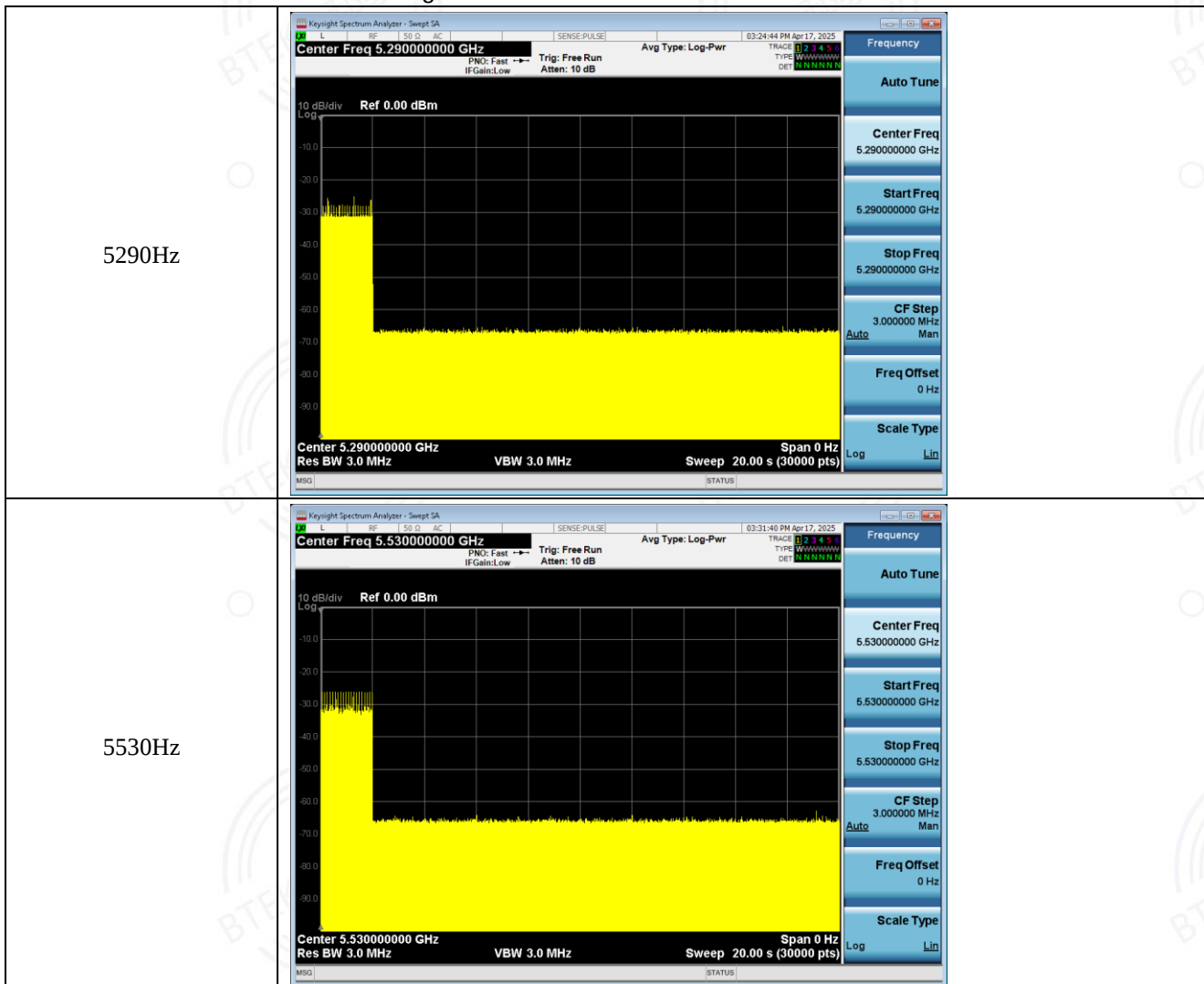
(1) The below figure shows the DFS setup, where the EUT is a WLAN device operating in slave mode, without Radar Interference Detection function. This setup also contains a device operating in master mode. The radar test signals are injected into the master device. The EUT (slave device) is associated with the master device. WLAN traffic is generated by streaming the mpeg file from the master to the slave in full monitor video mode using the media player.



Radar Waveform Calibration Result



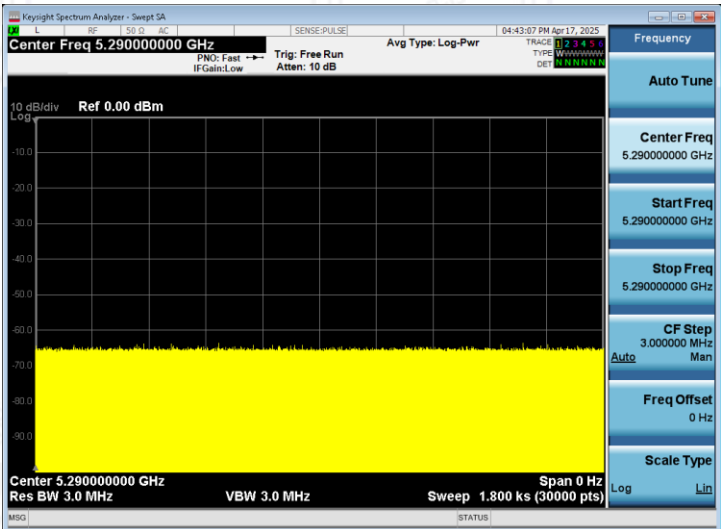
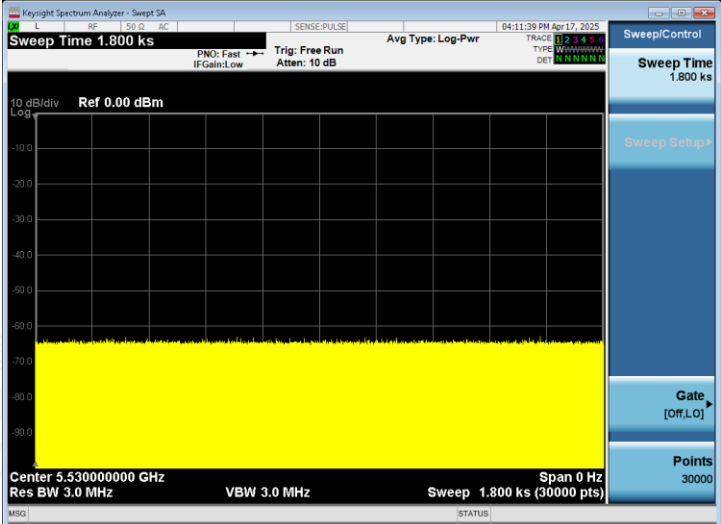
Channel Move Time& Channel Closing Transmission Time



BW/Channel	Test Item	Test Result(s)	Limit	Result
80MHz/5290MHz	Channel Move Time	0	< 10s	Pass
	Channel Closing Transmission Time	0	< 0.26s	Pass
80MHz/5610MHz	Channel Move Time	0	< 10s	Pass
	Channel Closing Transmission Time	0	< 0.26s	Pass



Non-Occupancy Period

5290Hz	
5530Hz	

Test Items	Limit
Non-Occupancy Period	> 1800 s



7 Test Setup Photo

Please refer to the Appendix Test Setup Photos

8 EUT Constructional Details (EUT Photos)

Please refer to the Appendix EUT Photos

- End of the Report -

