



Test Report No.:  
**FCCSZ2024-0007-RF4**

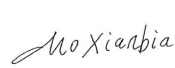
## RF Test Report

**FCC ID** : 2AOKI-AL7663BWGA  
**EUT** : WIFI Module  
**MODEL** : See Section 2.1  
**BRAND NAME** : N/A  
**APPLICANT** : Sichuan AI-Link Technology Co.,Ltd.  
**Classification Of Test** : N/A

**CVC Testing Technology (Shenzhen) Co., Ltd.**

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|                                                                                                                                               |            |                                                                                                                                                  |                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Applicant</b>                                                                                                                              |            | Name: Sichuan AI-Link Technology Co.,Ltd.<br>Address: Anzhou Industrial Park, Mianyang, Sichuan, P.R.C                                           |                                                                                                                                                   |
| <b>Manufacturer</b>                                                                                                                           |            | Name: Sichuan AI-Link Technology Co.,Ltd.<br>Address: Anzhou Industrial Park, Mianyang, Sichuan, P.R.C                                           |                                                                                                                                                   |
| <b>Equipment Under Test</b>                                                                                                                   |            | Product Name: WIFI Module<br>Model/Type: See Section 2.1<br>Brand Name: N/A<br>Serial NO.: N/A<br>Sample NO.: 3-1                                |                                                                                                                                                   |
| Date of Receipt.                                                                                                                              | 2024.02.21 | Date of Testing                                                                                                                                  | 2024.02.21 ~ 2024.03.20                                                                                                                           |
| <b>Test Specification</b>                                                                                                                     |            |                                                                                                                                                  | <b>Test Result</b>                                                                                                                                |
| FCC Part 15, Subpart E, Section 15.407                                                                                                        |            |                                                                                                                                                  | PASS                                                                                                                                              |
| <b>Evaluation of Test Result</b>                                                                                                              |            | The equipment under test was found to comply with the requirements of the standards applied.<br><br>Seal of CVC<br><b>Issue Date: 2024.03.20</b> |                                                                                                                                                   |
| Tested by:<br><br><u>Cai Jianyu</u><br>Name      Signature |            | Reviewed by:<br><br><u>Mo Xianbiao</u><br>Name      Signature | Approved by:<br><br><u>Dong Sanbi</u><br>Name      Signature |
| <b>Other Aspects: NONE.</b>                                                                                                                   |            |                                                                                                                                                  |                                                                                                                                                   |
| Abbreviations: OK, Pass= passed      Fail = failed      N/A= not applicable      EUT= equipment, sample(s) under tested                       |            |                                                                                                                                                  |                                                                                                                                                   |

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.

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**RELEASE CONTROL RECORD**

| ISSUE NO.          | REASON FOR CHANGE | DATE ISSUED |
|--------------------|-------------------|-------------|
| FCCSZ2024-0007-RF4 | Original release  | 2024.03.20  |

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| STANDARD SECTION | TEST TYPE AND LIMIT                         | RESULT | REMARK                                           |
|------------------|---------------------------------------------|--------|--------------------------------------------------|
| FCC 15.407       | Channel Move Time                           | PASS   | 812.2 ms                                         |
| FCC 15.407       | Channel Closing Transmission Time           | PASS   | 200+aggregate of 26ms over remaining 10s period. |
| FCC 15.407       | Non-Occupancy Period and Client Beacon Test | PASS   | ≥30 min                                          |

Note: Since the product is client without radar detection function, only Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period and Client Beacon Test are required to be performed

**1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS**

| Equipment                                | Manufacturer  | Model No.    | Serial Number | Cal. interval | Cal. Due  |
|------------------------------------------|---------------|--------------|---------------|---------------|-----------|
| WIFI & Bluetooth Test System             |               |              |               |               | /         |
| Signal&Spectrum Analyzer                 | Rohde&Schwarz | FSV 30       | 104408        | 1 year        | 2024.5.21 |
| #3Shielding room                         | MORI          | 443          | N/A           | 3 year        | 2026.5.16 |
| Wideband radio communication tester      | Rohde&Schwarz | CMW 500      | 168778        | 1 year        | 2024.5.25 |
| Analog signal Generator (100kHz ~ 40GHz) | Rohde&Schwarz | SMB 100A     | 181934        | 1 year        | 2024.5.21 |
| Vector signal Generator (9kHz ~ 6GHz)    | Keysight      | N5182B       | MY57301451    | 1 year        | 2024.4.25 |
| Vector signal Generator (9kHz ~ 6GHz)    | Rohde&Schwarz | SGT 100A     | 111724        | 1 year        | 2024.5.21 |
| RF control unit(BT/WiFi)                 | Tonscend      | JS0806-2-8CH | 20E8060261    | 1 year        | 2024.5.21 |

**1.2 TEST LOCATION**

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology (Shenzhen) Co., Ltd.

CABID:CN0137

Lab Address: No. 1301, Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen City, Guangdong Province 518110 P.R.China

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FCC(Test firm designation number: CN1363)

IC(Test firm CAB identifier number: CN0137)

CNAS(Test firm designation number: L16091)

## 2 GENERAL INFORMATION

### 2.1 GENERAL PRODUCT INFORMATION

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | WIFI Module                                                                                                                                                   |
| <b>BRAND</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                                                                                                                                           |
| <b>TEST MODEL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | AL-7663B-WG-A                                                                                                                                                 |
| <b>ADDITIONAL MODEL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | AL-7663B-WG-A(FCC);<br>AL-7663B-WG-A-1(FCC);<br>AL-7663B-WG-A-2(FCC);<br>AL-7663B-WG-A-3(FCC);<br>AL-7663B-WG-A-4(FCC);<br>AL-7663B-WG-A-5(FCC);              |
| <b>POWER SUPPLY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DC 5V                                                                                                                                                         |
| <b>OPERATING FREQUENCY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5260MHz ~ 5320MHz, 5500MHz ~ 5720MHz                                                                                                                          |
| <b>ANTENNA TYPE (Note 4)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ANT 1:<br>PIFA Antenna with 1.96dBi gain<br>Ant 2:<br>PIFA Antenna with 1.96dBi gain                                                                          |
| <b>I/O PORTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Refer to user's manual                                                                                                                                        |
| <b>CABLE SUPPLIED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | N/A                                                                                                                                                           |
| <b>HARDWARE VERSION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | JUI7.820.0962 series                                                                                                                                          |
| <b>SOFTWARE VERSIOIN</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | QAtool series                                                                                                                                                 |
| <b>DEVICE TYPE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/> Master<br><input checked="" type="checkbox"/> Client without radar detection<br><input type="checkbox"/> Client with radar detection |
| <p>Note:</p> <ol style="list-style-type: none"><li>For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.</li><li>For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.</li><li>EUT photo refer to report (Report NO.: FCCSZ2024-0007-EUT).</li><li>Since the above data and/or information is provided by the client, CVC is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.</li></ol> |                                                                                                                                                               |

## 2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

| BANDWIDTH | CHAIN         | CHANNEL | TEST TYPE AND LIMIT                         |
|-----------|---------------|---------|---------------------------------------------|
| 20MHz     | CHAIN1+CHAIN2 | CH100   | Channel Move Time                           |
|           |               |         | Channel Closing Transmission Time           |
|           |               |         | Non-Occupancy Period and Client Beacon Test |

**This test was investigated for different bandwidth (20MHz, 40MHz,80MHz). The following plots done on 20MHz was worst case.**

## 2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Support Equipment |                 |                      |               |                         |                       |                   |             |
|-------------------|-----------------|----------------------|---------------|-------------------------|-----------------------|-------------------|-------------|
| NO                | Description     | Brand                | Model No.     | FCC ID                  | SN                    | Supplied by       |             |
| 1                 | Wireless router | LINKSYS              | WRT3200ACM    | Q87-WRT3200A<br>CM      | 19811609801<br>281    | Lab               |             |
| 1                 | Laptop          | Lenovo               | K4e-ARE120    | /                       | MP20kshe              | Lab               |             |
|                   |                 |                      |               |                         |                       |                   |             |
| Support Cable     |                 |                      |               |                         |                       |                   |             |
| NO                | Description     | Quantity<br>(Number) | Length<br>(m) | Detachable<br>(Yes/ No) | Shielded<br>(Yes/ No) | Cores<br>(Number) | Supplied by |
| 1                 | N/A             | N/A                  | N/A           | N/A                     | N/A                   | N/A               | N/A         |
|                   |                 |                      |               |                         |                       |                   |             |

### 3 REQUIREMENTS AND PARAMETERS FOR DFS TEST

#### 3.1 APPLICABILITY OF DFS REQUIREMENTS

##### APPLICABILITY OF DFS REQUIREMENTS PRIOR TO USE A CHANNEL

| REQUIREMENT                     | OPERATIONAL MODE |                                |                             |
|---------------------------------|------------------|--------------------------------|-----------------------------|
|                                 | MASTER           | CLIENT WITHOUT RADAR DETECTION | CLIENT WITH RADAR DETECTION |
| Non-Occupancy Period            | ✓                | ✓                              | ✓                           |
| 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                   | ✓                           |

##### 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                   | ✓                           |

### 3.2 DETECTION THRESHOLD VALUES

DFS DETECTION THRESHOLDS FOR MASTER DEVICES AND CLIENT DEVICES WITH RADAR DETECTION

| MAXIMUM TRANSMIT POWER                                                                                                                                                                                                                                                                                                                                                                                                | VALUE (SEE Note 1 and 2) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| ≥ 200 milliwatt                                                                                                                                                                                                                                                                                                                                                                                                       | -64 dBm                  |
| < 200 milliwatt                                                                                                                                                                                                                                                                                                                                                                                                       | -62 dBm                  |
| <p><b>Note 1:</b> This is the level at the input of the receiver assuming a 0 dBi receive antenna.</p> <p><b>Note 2:</b> 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.</p> |                          |

### 3.3 DFS RESPONSE REQUIREMENT VALUES

| PARAMETER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | VALUE                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Non-occupancy period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Minimum 30 minutes                                                                                        |
| Channel Availability Check Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 60 seconds                                                                                                |
| Channel Move Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 seconds<br>See Note 1.                                                                                 |
| Channel Closing Transmission Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.<br>See Notes 1 and 2. |
| U-NII Detection Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 100% of the UNII transmission power bandwidth.<br>See Note 3.                                             |
| <p><b>Note 1:</b> The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:</p> <ul style="list-style-type: none"> <li>• For the Short Pulse Radar Test Signals this instant is the end of the Burst.</li> <li>• For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.</li> <li>• For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform.</li> </ul> <p><b>Note 2:</b> 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.</p> <p><b>Note 3:</b> 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.</p> |                                                                                                           |

### 3.4 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                  | Test A<br>Test B | $\text{Roundup} \left( \frac{1}{360} \right) \cdot \left( \frac{19 \cdot 10^9}{\text{PRI}_{\mu\text{sec}}} \right)$ | 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. |                    |                  |                                                                                                                     |                                            |                          |

#### LONG PULSE RADAR TEST WAVEFORM

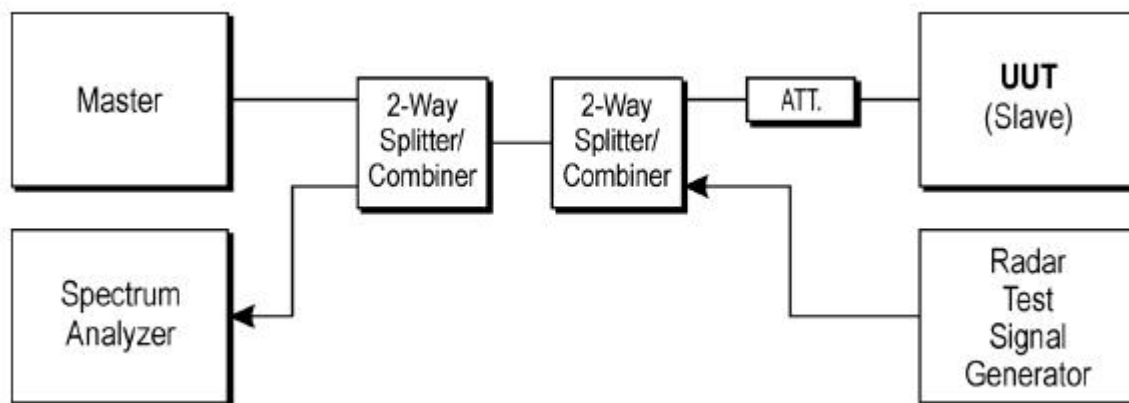
| RADAR TYPE | PULSE WIDTH (μsec) | CHIRP WIDTH (MHz) | PRI (μsec) | NUMBER OF PULSES PER BURST | NUMBER OF BURSTS | MINIMUM PERCENTAGE OF SUCCESSFUL DETECTION | MINIMUM NUMBER OF TRIALS |
|------------|--------------------|-------------------|------------|----------------------------|------------------|--------------------------------------------|--------------------------|
| 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                       |

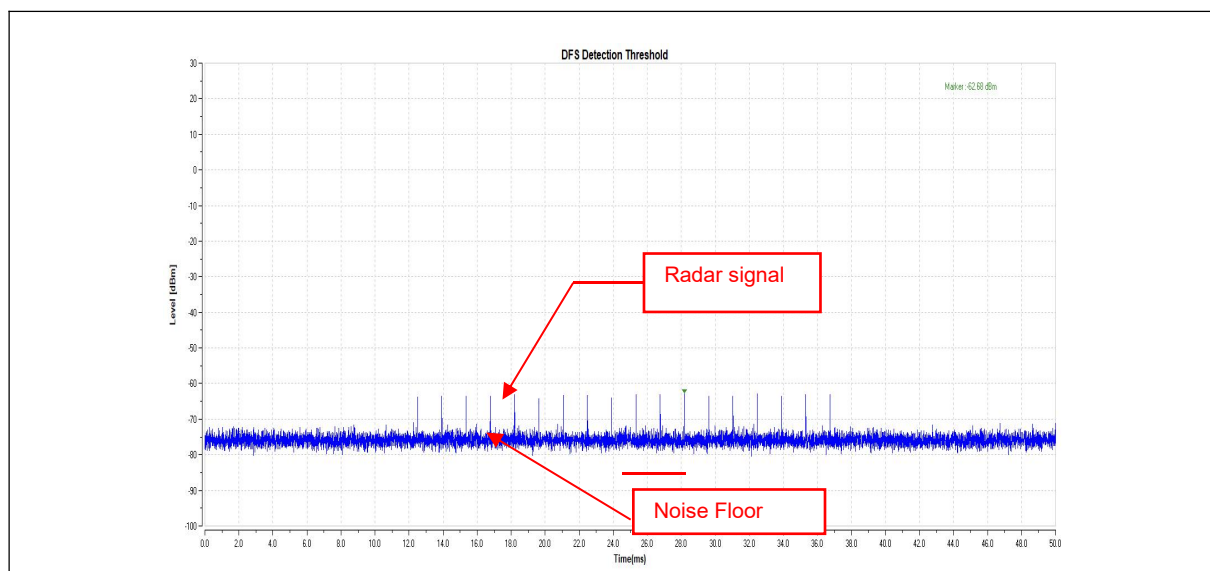
## 4 TEST RESULTS

### 4.1 TEST SETUP OF DFS



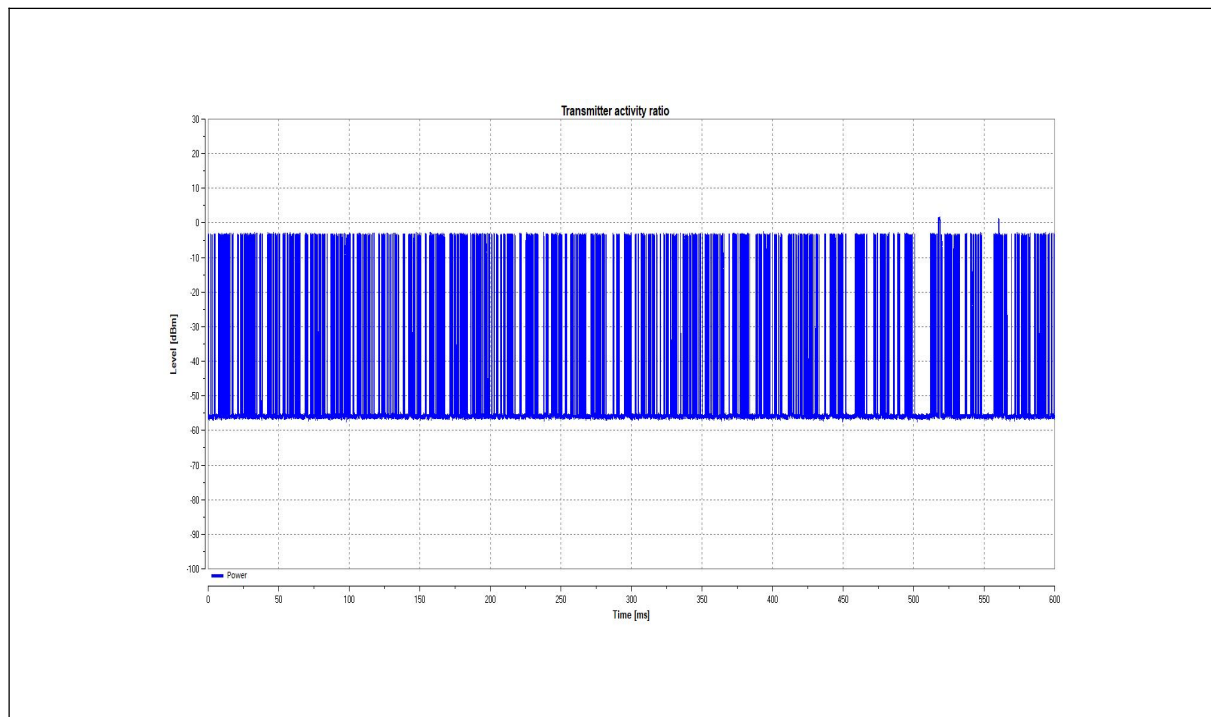
## 4.2 DFS DETECTION THRESHOLD

The antenna gain of the device is 1.99dBi, The Required detection threshold is  $-62.01\text{dBm} = -64 + 1.96\text{dBi}$ . The conducted radar burst level is set to  $-62.68\text{dBm}$ .



### 4.3 CHANNEL LOADING

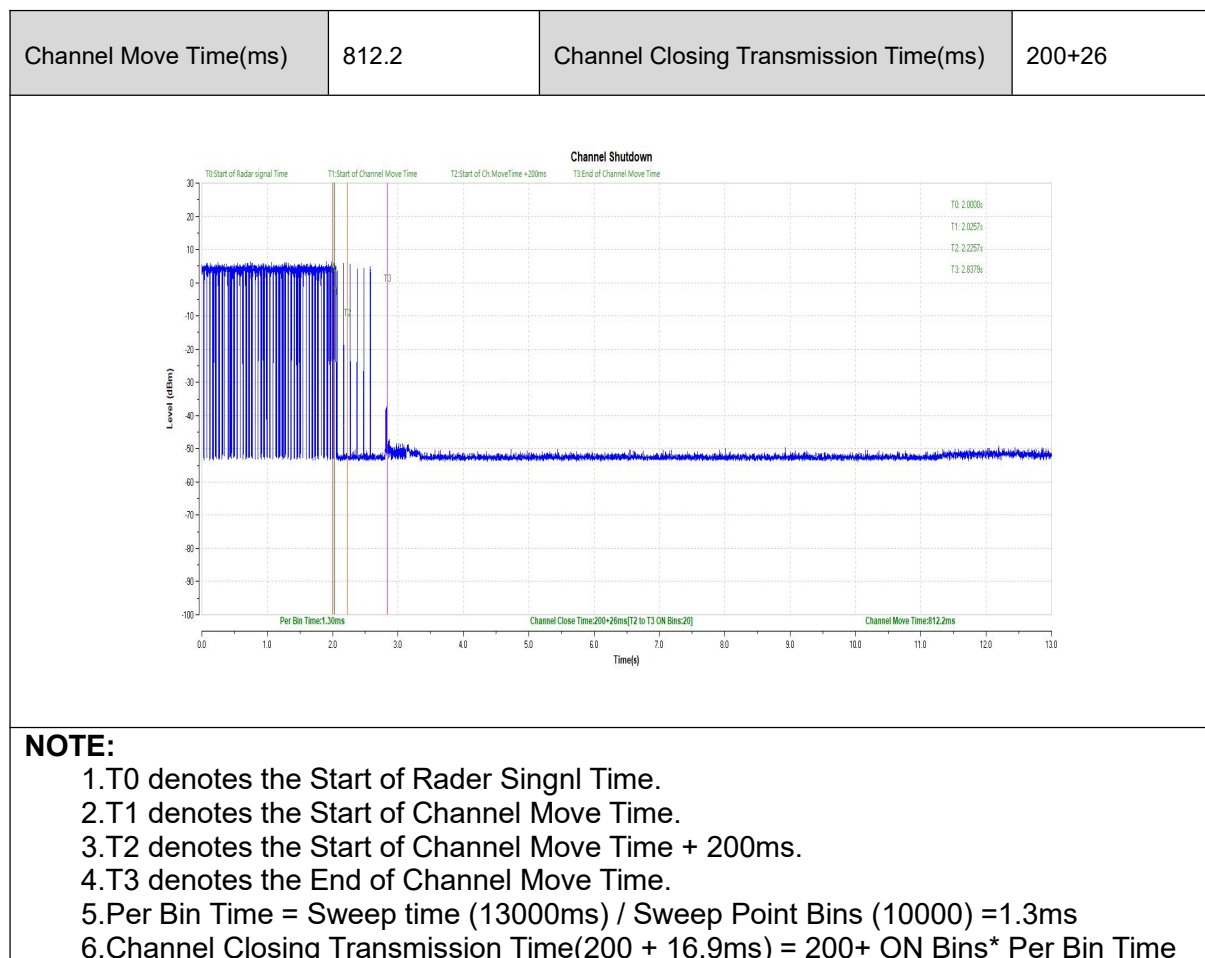
The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) with radar signal, measured the channel shutdown. The slave transmitted the test data to master, the transmitted duty cycle is 33.4%.



Note: Traffic signal: from slave transmit to master.

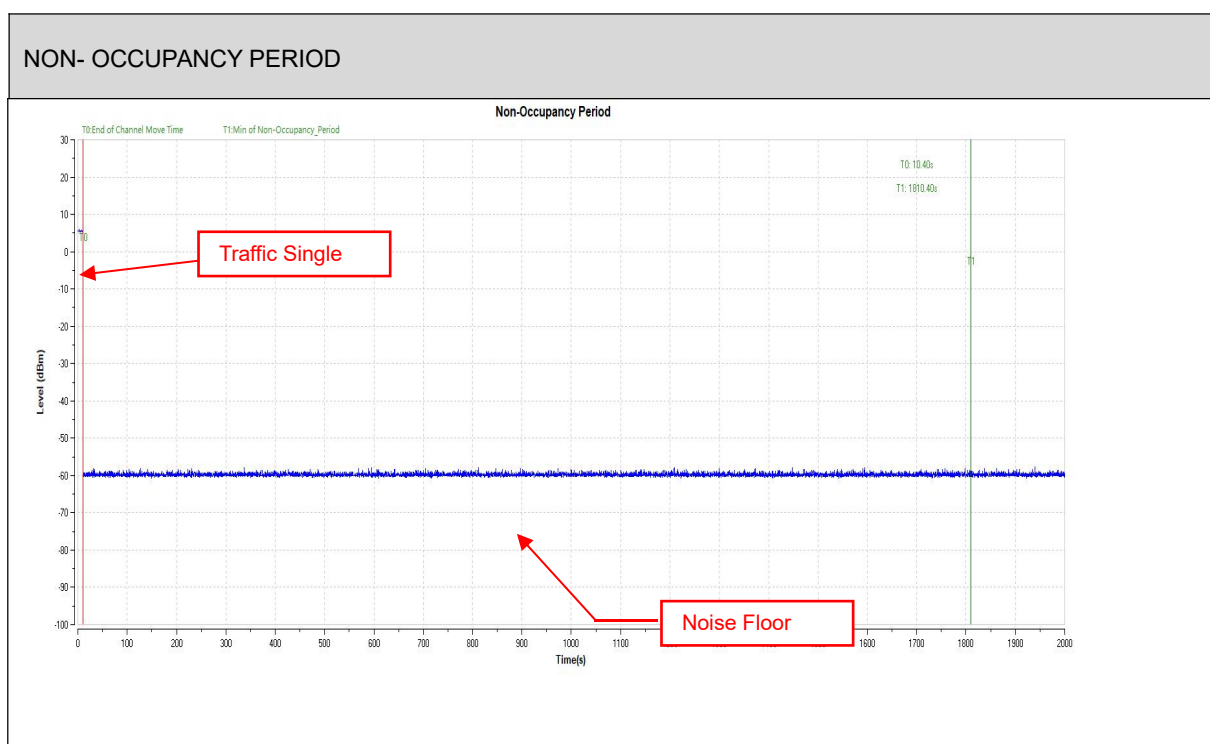
## 4.4 CHANNEL CLOSING TRANSMISSION AND CHANNEL MOVE TIME

### Radar Signal 0



## 4.5 NON- OCCUPANCY PERIOD

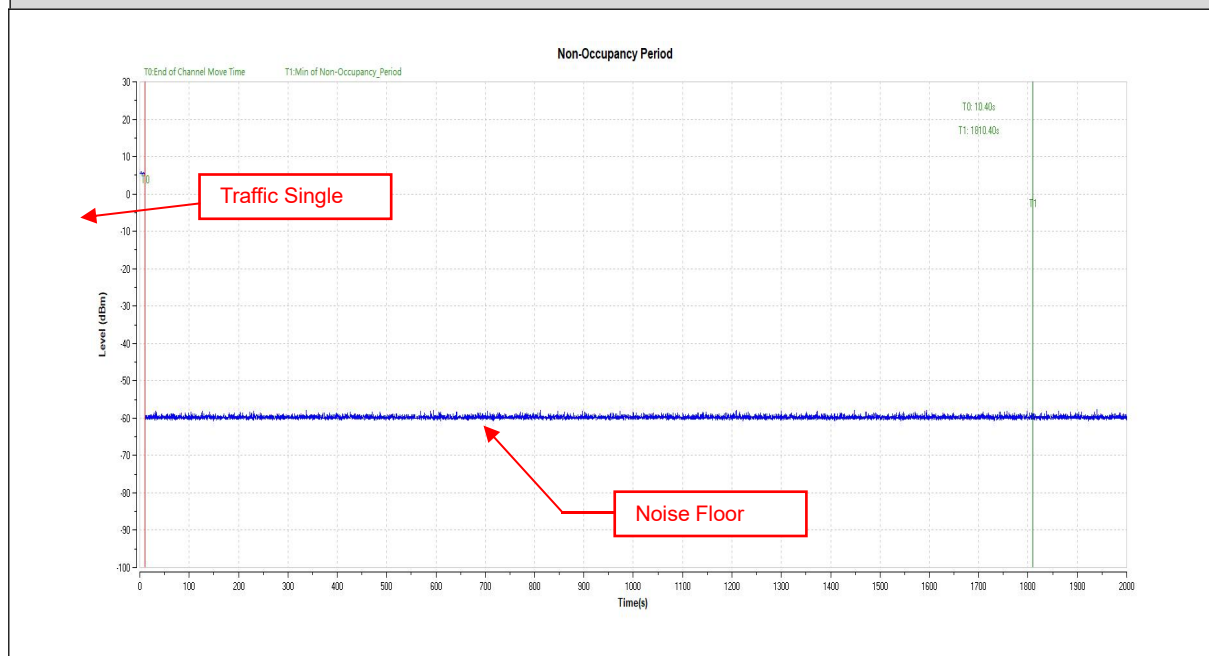
- 1) Test results demonstrating an associated client link is established with the master on a test frequency
- 2) The client and DFS-certified master device are associated, and system testing will be performed with channel-loading for a non-occupancy period test.
- 3). The device transmits one type of radar as specified in the DFS Order.
- 4) The test frequency has been monitored to ensure no transmission of any type has occurred for 30 minutes;  
Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear;
- 5)An analyzer plot that contains a single 30-minute sweep on the original test frequency.



Master was off.

During the 30 minutes observation time, The UUT did not make any transmissions in the DFS band after UUT power up

#### NON-ASSOCIATED TEST



## **5 PHOTOGRAPHS OF THE EUT**

Please refer to the attached file (External Photos report and Internal Photos).

----- End of the Report -----

## Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

*\*\*The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented. \*\**

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