

TEST REPORT

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Report Number: 2601R49433E-RF-22H

Test Standard (s)

ETSI EN 301 893 V2.2.1 (2024-11)

Sample Description

Product Type: Smartphone
Model No.: KINGKONG ES 5
Multiple Model(s) No.: N/A
Trade Mark: CUBOT
Date Received: 2026-03-08
Issue Date: 2026-05-29

| | |
|--------------|-------|
| Test Result: | Pass▲ |
|--------------|-------|

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

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GaLa Liu
RF Engineer

Approved By:

Jim Cheng
RF Supervisor

Note: The information marked * is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.
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DOCUMENT REVISION HISTORY

| Revision Number | Report Number | Description of Revision | Date of Revision |
|-----------------|--------------------|-------------------------|------------------|
| 0 | 2601R49433E-RF-22H | Original Report | 2026-05-29 |

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

| | |
|----------------------|---|
| Frequency Range | 5G Wi-Fi: 5260-5320MHz; 5500-5700MHz |
| Modulation Technique | OFDM |
| Voltage Range | DC 5/9V from adapter or DC 3.91V from Battery |
| Sample serial number | 3IUC-1 (Assigned by BACL, Shenzhen) |
| Sample/EUT Status | Good condition |
| Adapter Information | Model: TD-203G200170VF01 Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5V/3A, 9V/3A, 12V/2.5A, 15V/2A, 20V/1.5A PPS: 3.3V-16V/2A, 3.3V-11V/3A |
| | |

Objective

The following type approved report of radio equipment is in accordance with ETSI EN 301 893 V2.2.1 (2024-11), Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of Directive 2014/53/EU.

The objective of the manufacturer is to determine compliance with ETSI EN 301 893 V2.2.1 (2024-11) for the following tests:

Dynamic Frequency Selection (DFS)

In order to determine compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in lowering the immunity should be checked to ensure that compliance has been maintained (i.e., harnessing and/or I/O cable change, etc.).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

Each test item follows test standards and with no deviation.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing according to EN 301 893.

EUT Exercise Software

No exercise software was used.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-----------------|---------------|
| DELL | PC | Vostro 3690 | E569659A9981 |
| DELL | LED display | E2423H | CN-OPTM1T |
| DELL | Keyboard | KB1421 | E134780 |
| DELL | Mouse | WM-100 | Unknown |
| Grandstream | Router | GWN7665 | C074AD251F0A |
| DELL | Notebook | DESKTOP-1630AQ3 | 9RVYFH2 |
| Unknown | Receptacle | Unknown | Unknown |

External Cable

| Cable Description | Length (m) | From Port | To |
|-----------------------------------|------------|------------|------------|
| Unshielded Un-detachable AC cable | 1 | AC Mains | Receptacle |
| Unshielded Detachable AC cable | 1 | Receptacle | POE |
| Unshielded Detachable RJ45 cable | 1 | PC | POE |
| Unshielded Detachable RJ45 cable | 1 | POE | Router |

SUMMARY OF TEST RESULTS

The following result table represents the list of measurements required under the ETSI EN 301 893 V2.2.1 (2024-11).

| Items | Description of Test | Result |
|--------------------------------|---|----------------|
| Detection Bandwidth | UNII Detection Bandwidth | Not applicable |
| Performance Requirements Check | Initial Channel Availability Check Time (CAC) | Not applicable |
| | Radar Burst at the Beginning of the CAC | Not applicable |
| | Radar Burst at the End of the CAC | Not applicable |
| In-Service Monitoring | Channel Move Time | Compliant |
| | Channel Closing Transmission Time | Compliant |
| | Non-Occupancy Period | Not applicable |
| Radar Detection | Statistical Performance Check | Not applicable |

Not applicable: the EUT is a client unit without radar detection.

APPLICABLE STANDARDS

DFS Requirement

EN 301 893 V2.2.1 §4.2.6 & Annex D

Table 5: Applicability of DFS requirements

| Requirement | DFS operational mode | | |
|---|----------------------|--|---|
| | Primary device | Secondary device without radar detection (see table D.2, note 2) | Secondary device with radar detection (see table D.2, note 2) |
| CAC | Required | Not required | Required (see note 2) |
| Off-channel CAC (see note 1) | Required | Not required | Required (see note 2) |
| In-service monitoring | Required | Not required | Required |
| Channel shutdown | Required | Required | Required |
| Non-occupancy period | Required | Not required | Required |
| Uniform spreading | Required | Not required | Not required |
| NOTE 1: If implemented. | | | |
| NOTE 2: A secondary device with radar detection is not required to perform a CAC or off-channel CAC at initial use of a channel but only before returning to the use of a channel where it has detected a radar signal by in-service monitoring. Where the secondary device with radar detection is under the control of its primary device and does not start transmissions on the channel until connected to that primary device, then the secondary device with radar detection does not have to perform a CAC or off-channel CAC and may rely on the CAC performed by the primary device to enable in-service monitoring. | | | |

The radar detection requirements specified in the present document assume that the centre frequencies of the radar signals fall within the central 80 % of the occupied bandwidth of the RLAN device.

Channel Availability Check (CAC): a mechanism by which an RLAN device checks channels for the presence of radar signals.

Off-Channel CAC: an optional mechanism by which an RLAN device monitors channel(s), different from the Operating Channel(s), for the presence of radar signals.

In-Service Monitoring: the process by which an RLAN device monitors each Operating Channel for the presence of radar signals.

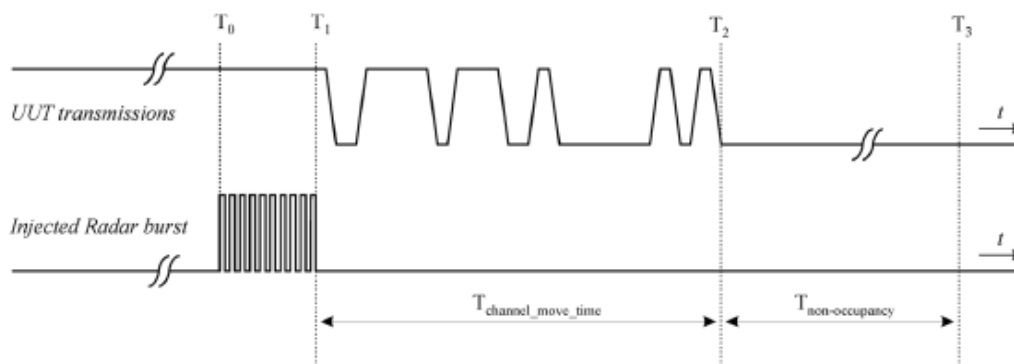
Channel Shutdown: the process initiated by the RLAN device on an Operating Channel after a radar signal has been detected during the In-Service Monitoring on that channel.

Non-Occupancy Period: the time during which the RLAN device shall not make any transmissions on a channel after a radar signal was detected on that channel.

Uniform Spreading: a mechanism to be used by the RLAN to provide, on aggregate, a uniform loading of the spectrum across all devices.

Table D.1: DFS requirement values

| Parameter | Value |
|---|------------------------|
| Channel Availability Check Time | 60 s (see note 1) |
| Minimum Off-Channel CAC Time | 6 minutes (see note 2) |
| Maximum Off-Channel CAC Time | 4 hours (see note 2) |
| Channel Move Time | 10 s |
| Channel Closing Transmission Time | 1 s |
| Non-Occupancy Period | 30 minutes |
| NOTE 1: For channels whose nominal bandwidth falls completely or partly within the band 5 600 MHz to 5 650 MHz, the <i>Channel Availability Check Time</i> shall be 10 minutes. | |
| NOTE 2: For channels whose nominal bandwidth falls completely or partly within the band 5 600 MHz to 5 650 MHz, the <i>Off-Channel CAC Time</i> shall be within the range 1 hour to 24 hours. | |

**Figure 16: Channel closing transmission time, channel move time and non-occupancy period****Table D.2: Radar Detection Threshold Levels**

| e.i.r.p. Spectral Density (dBm/MHz) | Value (see note 1 and note 2) |
|---|-------------------------------|
| 10 | -62 dBm |
| NOTE 1: This is the level at the input of the receiver of an RLAN device with a maximum e.i.r.p. density of 10 dBm/MHz and assuming a 0 dBi receive antenna. For devices employing different e.i.r.p. spectral density and/or a different receive antenna gain G (dBi) the Radar Detection Threshold Level at the receiver input follows the following relationship: DFS Detection Threshold (dBm) = -62 + 10 - e.i.r.p. Spectral Density (dBm/MHz) + G (dBi); however the Radar Detection Threshold Level shall not be less than -64 dBm assuming a 0 dBi receive antenna gain. | |
| NOTE 2: Slave devices with a maximum e.i.r.p. of less than 23 dBm do not have to implement radar detection unless these devices are used in fixed outdoor point to point or fixed outdoor point to multipoint applications (see clause 4.2.6.1.3). | |

Table D.3: Parameters of the reference DFS test signal

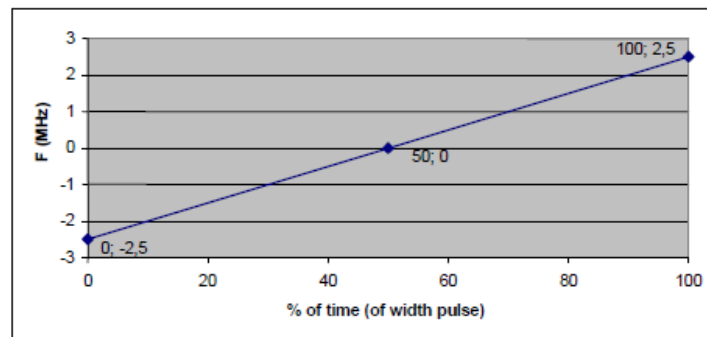
| Pulse width W (μs) | Pulse repetition frequency PRF (PPS) | Pulses per burst (PPB) |
|-----------------------|---|---------------------------|
| 1 | 700 | 18 |

Table D.4: Parameters of radar test signals

| Radar test signal # (see note 1 to note 3) | Pulse width W (μs) | | Pulse repetition frequency PRF (PPS) | | Number of different PRFs | Pulses per burst for each PRF (PPB) (see note 5) |
|---|-----------------------|-----|---|-------|--------------------------------|---|
| | Min | Max | Min | Max | | |
| 1 | 0,5 | 5 | 200 | 1 000 | 1 | 10 (see note 6) |
| 2 | 0,5 | 15 | 200 | 1 600 | 1 | 15 (see note 6) |
| 3 | 0,5 | 15 | 2 300 | 4 000 | 1 | 25 |
| 4 | 20 | 30 | 2 000 | 4 000 | 1 | 20 |
| 5 | 0,5 | 2 | 300 | 400 | 2/3 | 10 (see note 6) |
| 6 | 0,5 | 2 | 400 | 1 200 | 2/3 | 15 (see note 6) |

NOTE 1: Radar test signals #1 to #4 are constant PRF based signals. See figure D.1. These radar test signals are intended to simulate also radars using a packet based Staggered PRF. See figure D.2.

NOTE 2: Radar test signal #4 is a modulated radar test signal. The modulation to be used is a chirp modulation with a $\pm 2,5$ MHz frequency deviation which is described below.



NOTE 3: Radar test signals #5 and #6 are single pulse based Staggered PRF radar test signals using 2 or 3 different PRF values. For radar test signal #5, the difference between the PRF values chosen shall be between 20 PPS and 50 PPS. For radar test signal #6, the difference between the PRF values chosen shall be between 80 PPS and 400 PPS. See figure D.3.

NOTE 4: Apart for the Off-Channel CAC testing, the radar test signals above shall only contain a single burst of pulses. See figure D.1, figure D.3 and figure D.4. For the Off-Channel CAC testing, repetitive bursts shall be used for the total duration of the test. See figure D.2 and figure D.5. See also clause 4.2.6.2.3, clause 5.4.8.2.1.4.2 and clause 5.4.8.2.1.4.3.

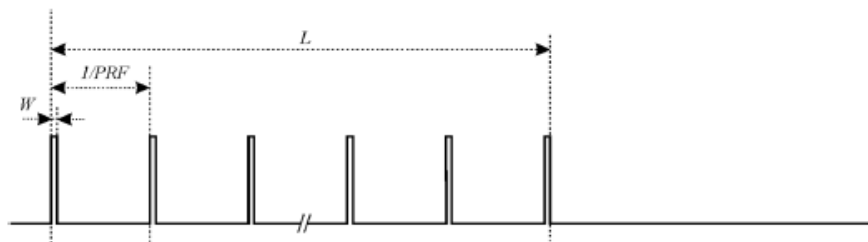
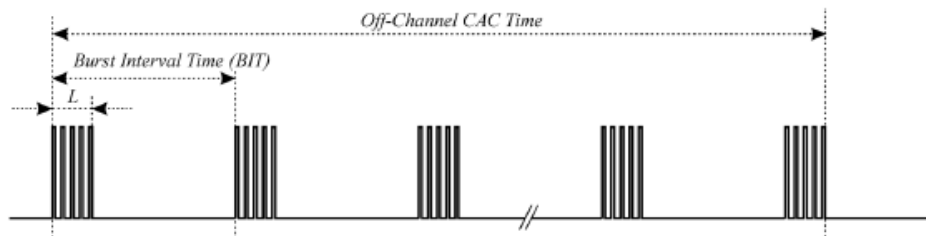
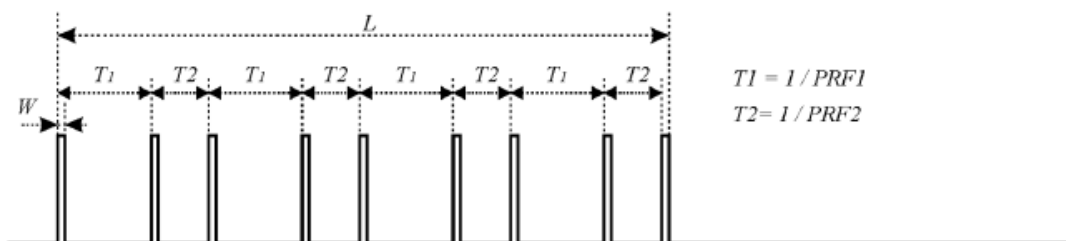
NOTE 5: The total number of pulses in a burst is equal to the number of pulses for a single PRF multiplied by the number of different PRFs used.

NOTE 6: For the CAC and Off-Channel CAC requirements, the minimum number of pulses (for each PRF) for any of the radar test signals to be detected in the band 5 600 MHz to 5 650 MHz shall be 18.

Table D.5: Detection probability

| Parameter | Detection Probability (P_d) | |
|-----------------------|--|----------------|
| | Channels whose nominal bandwidth falls partly or completely within the 5 600 MHz to 5 650 MHz band | Other channels |
| CAC, Off-Channel CAC | 99,99 % | 60 % |
| In-Service Monitoring | 60 % | 60 % |

NOTE: P_d gives the probability of detection per simulated radar burst and represents a minimum level of detection performance under defined conditions. Therefore P_d does not represent the overall detection probability for any particular radar under real life conditions.

**Figure D.1: General structure of a single burst/constant PRF based radar test signal****Figure D.2: General structure of a multiple burst/constant PRF based radar test signal****Figure D.3: General structure of a single burst/single pulse based staggered PRF radar test signal**

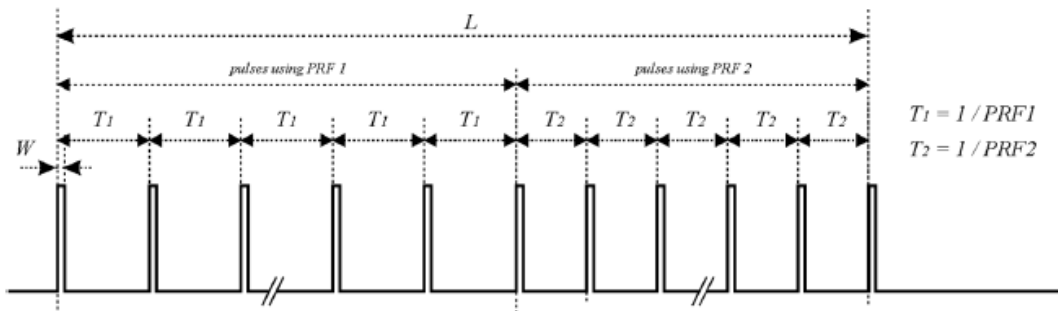


Figure D.4: General structure of a single burst/packet based staggered PRF radar test signal

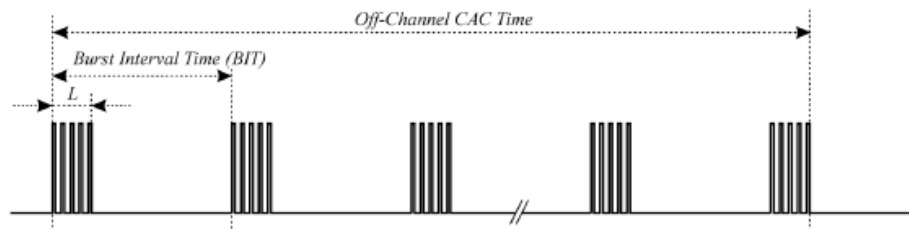
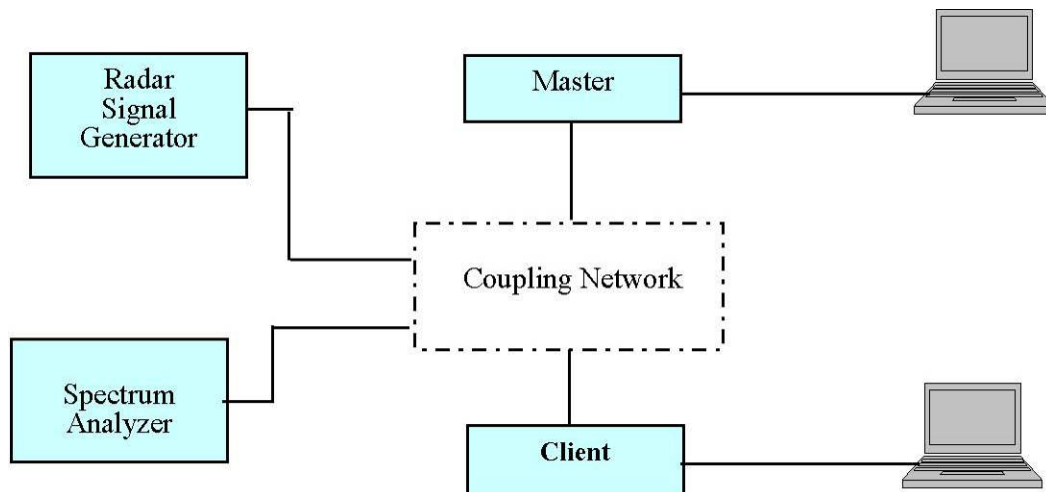


Figure D.5: General structure of a multiple burst/packet based staggered PRF based radar test signal

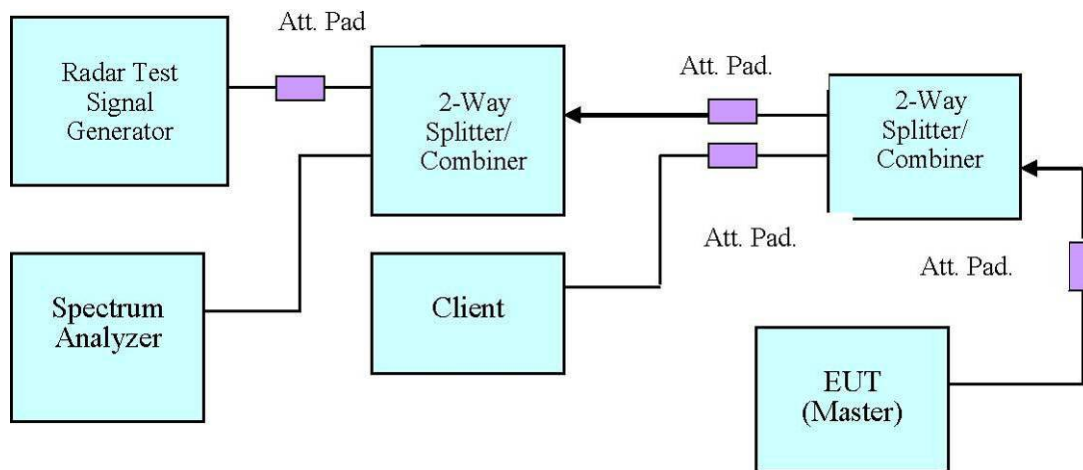
DFS Measurement System

BACL DFS measurement system consists of two subsystems: (1) The radar signal generating subsystem and (2) the traffic monitoring subsystem.

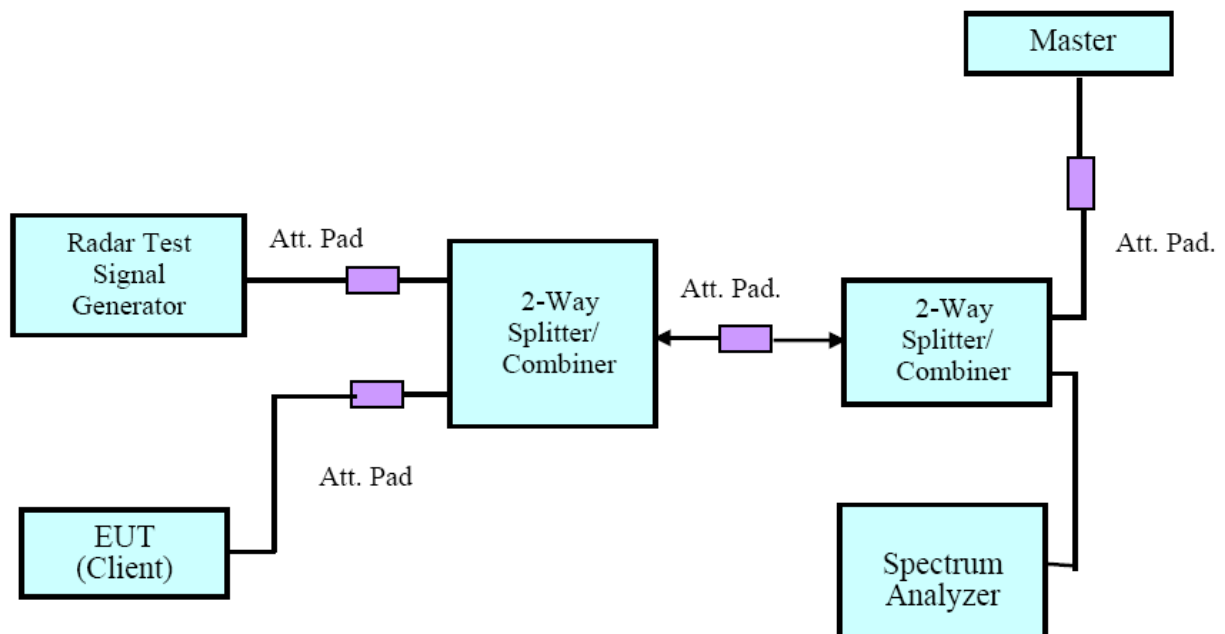
System Block Diagram



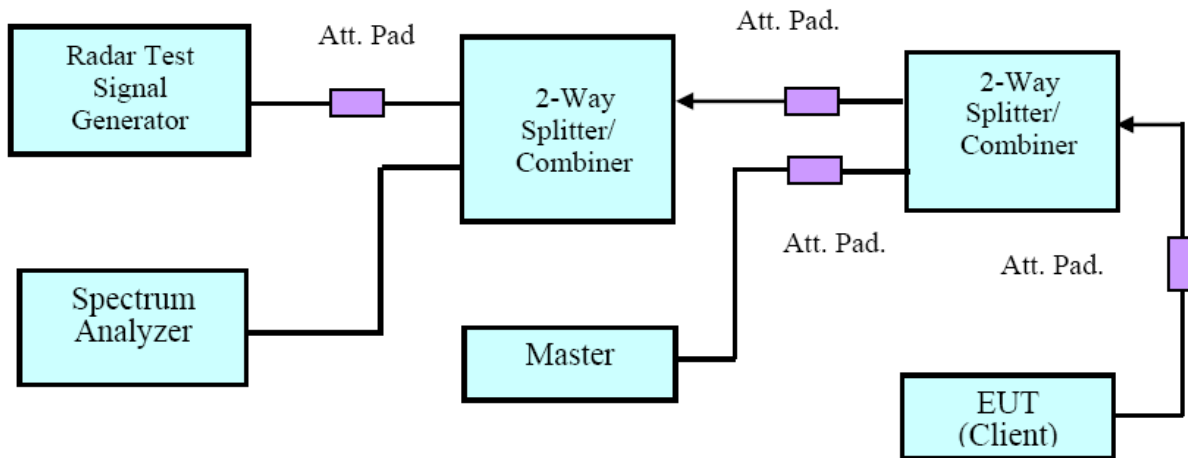
Conducted Method



Setup for Master with injection at the Master

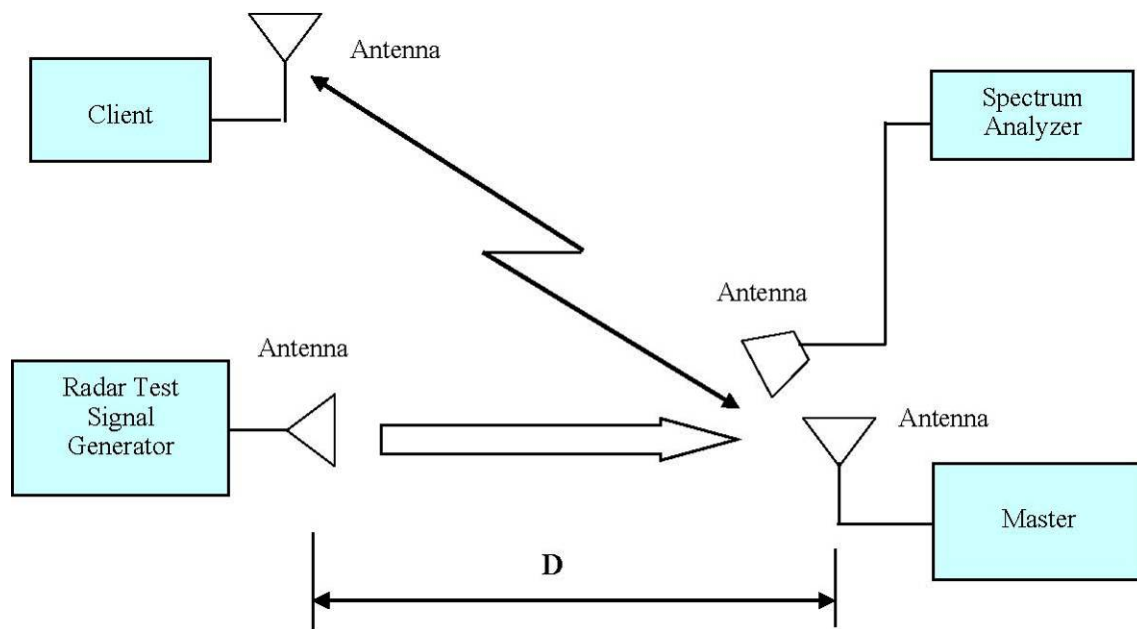


Setup for Client with injection at the Master



Setup for Client with injection at the Client

Radiated Method



Test Procedure

A spectrum analyzer is used as a monitor verifies that the EUT status including Channel Closing Transmission Time and Channel Move Time.

TEST RESULTS

Description of EUT

The calibrated radiated DFS detection threshold level is set to -62 dBm.

Datapakge streamed from the Access Point to the Client using the software “LanTest”.

Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|--------------|-----------------------------|----------|---------------|------------------|----------------------|
| Tonscend | RF control Unit | JS0806-2 | 19D8060154 | 2025/07/18 | 2026/07/17 |
| Tonscend | Test software | JS1120-3 | V3.3.38 | NCR | NCR |
| Keysight | MXA Signal Analyzer | N9020A | MY48490106 | 2025/7/29 | 2026/7/29 |
| Keysight | MXG Vector Signal Generator | N5182B | MY53051503 | 2025/09/18 | 2026/09/17 |
| Unknown | 10dB Attenuator | Unknown | F-03-EM224 | 2025/06/26 | 2026/06/25 |
| HP | Power Splitter | 11667A | 1610A | 2025/06/26 | 2026/06/25 |

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

| | |
|--------------------|---------|
| Temperature: | 25.9 °C |
| Relative Humidity: | 50 % |
| ATM Pressure: | 101 kPa |

The testing was performed by Ciel Jiang on 2026-04-02.

Test Result: Compliant. Please refer to the plots in the Appendix.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

Test Procedure

Channel Move Time and the Channel Closing Transmission Time should be performed with the reference DFS test signal defined in table D.3. The measurement timing begins at the end of the the reference DFS test signal burst.

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.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = $N \times \text{Dwell Time}$

N is the number of spectrum analyzer bins showing a device transmission Dwell Time is the dwell time per bin (i.e. $\text{Dwell Time} = S/B$, S is the sweep time and B is the number of bin, i.e. 8192)

Test Results

Test Result: Compliant. Please refer to the plots in the Appendix.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the report number is 2601R49433E-EUT.

EXHIBIT B - TEST SETUP PHOTOGRAPHS



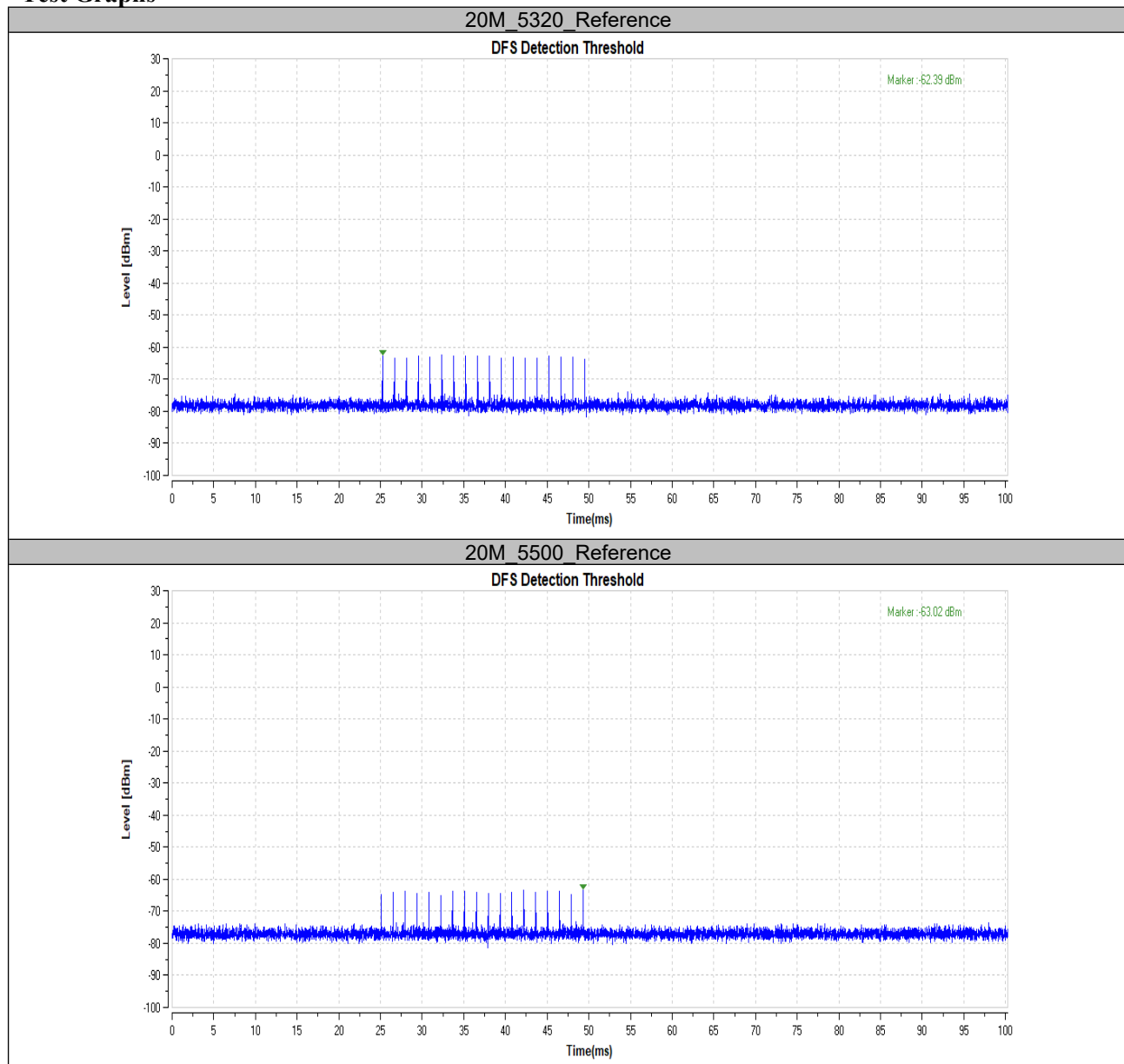
APPENDIX

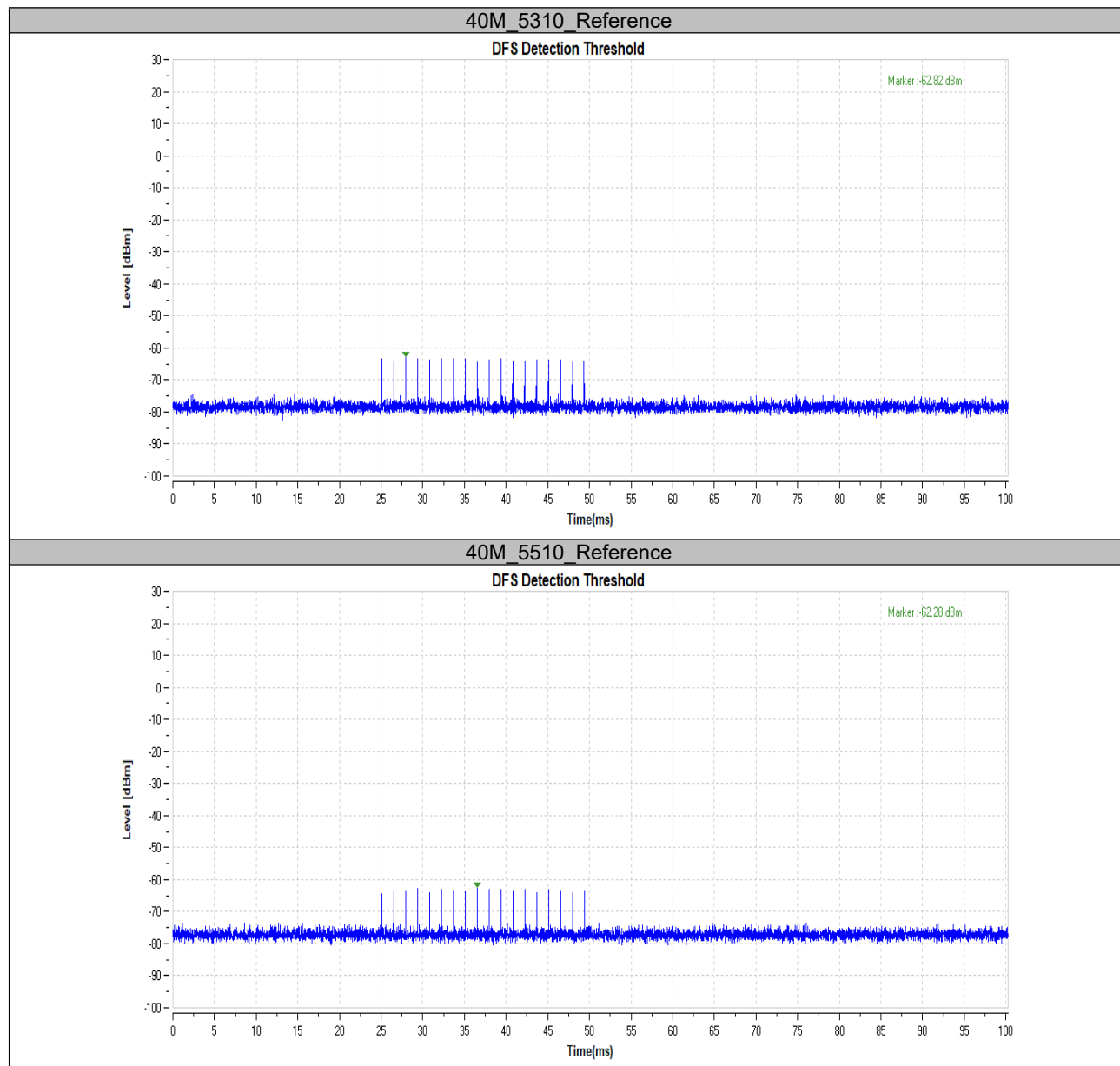
Appendix A: DFS Detection Thresholds

Test Result

| Test Mode | Frequency[MHz] | Radar Type | Result[dBm] | Limit[dBm] | Verdict |
|-----------|----------------|------------|-------------|------------|---------|
| 20M | 5320 | Reference | -62.39 | -62.00 | PASS |
| | 5500 | Reference | -63.02 | -62.00 | PASS |
| 40M | 5310 | Reference | -62.82 | -62.00 | PASS |
| | 5510 | Reference | -62.28 | -62.00 | PASS |

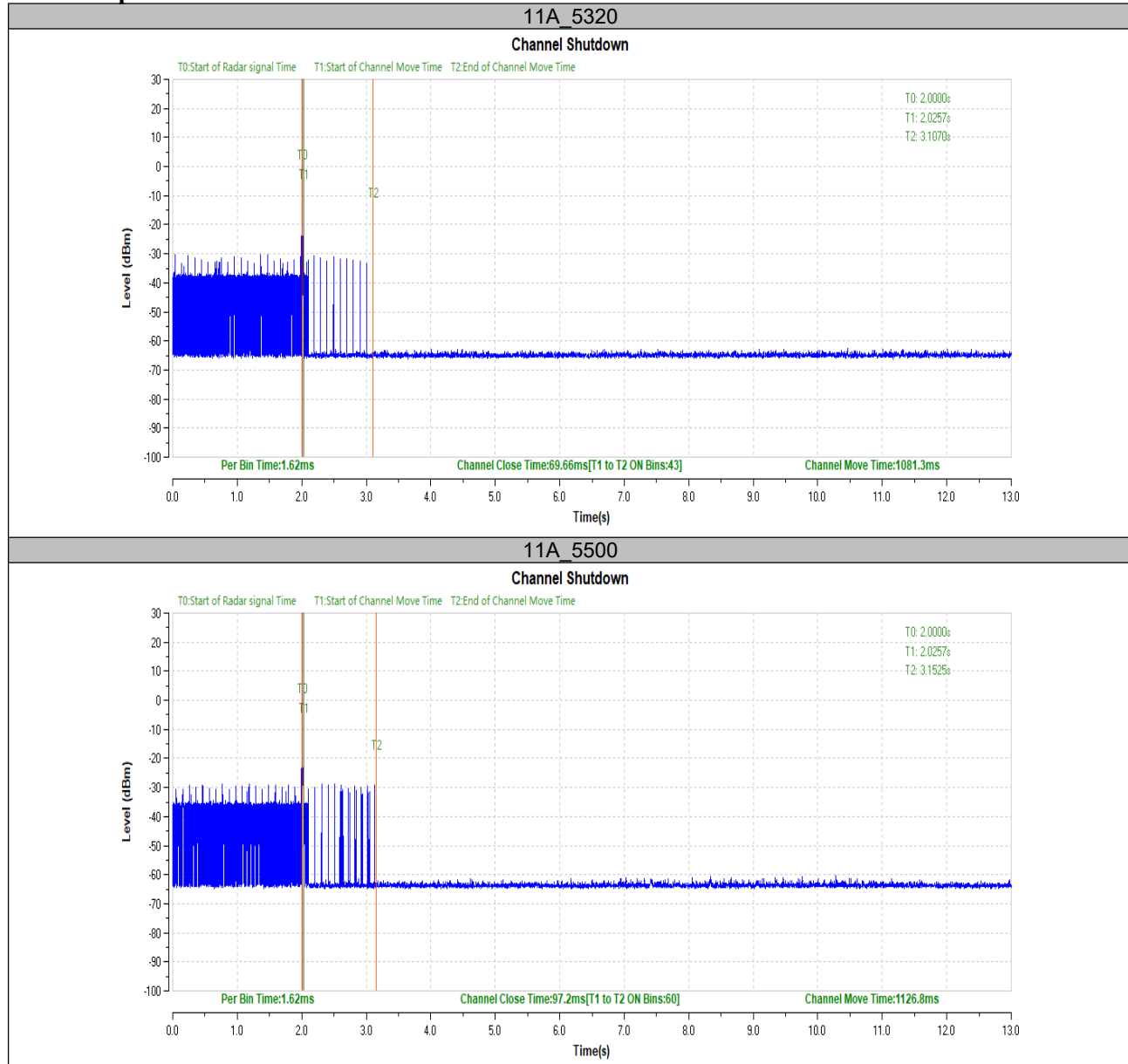
Test Graphs

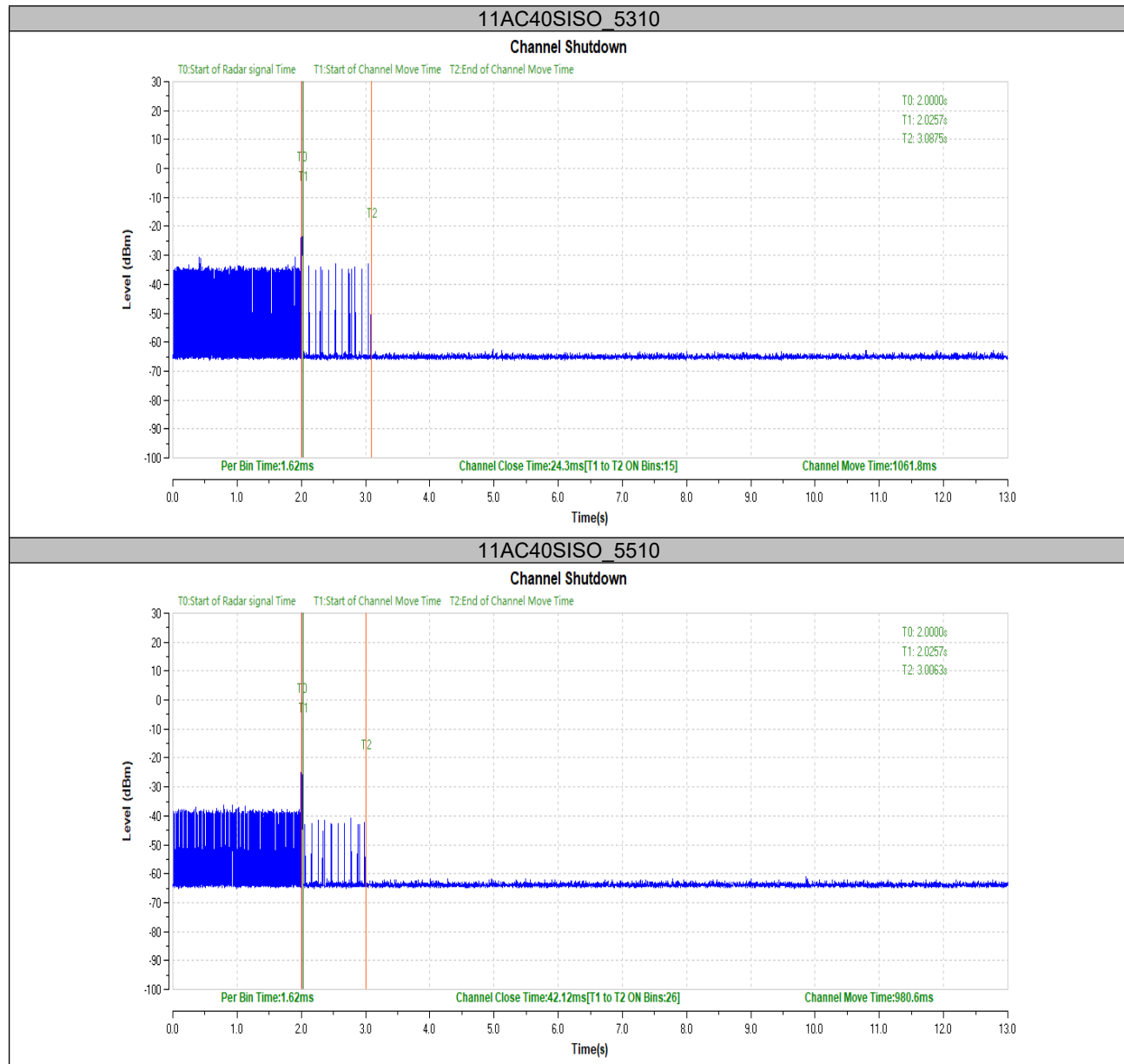




Appendix B: Channel Move Time and Channel Closing Transmission Time**Test Result**

| Test Mode | Frequency[MHz] | CCTT[ms] | Limit[ms] | CMT[ms] | Limit[ms] | Verdict |
|------------|----------------|----------|-----------|---------|-----------|---------|
| 11A | 5320 | 69.66 | 1000 | 1081.3 | 10000 | PASS |
| | 5500 | 97.2 | 1000 | 1126.8 | 10000 | PASS |
| 11AC40SISO | 5310 | 24.3 | 1000 | 1061.8 | 10000 | PASS |
| | 5510 | 42.12 | 1000 | 980.6 | 10000 | PASS |

Test Graphs



***** END OF REPORT *****