

Japan DFS Test Report

**Test report
On Behalf of
Winner Wave Limited
For
Pocket
Model No.: R-1D, R-1, R-2, R-2D, R-3, R-3D**

Prepared For : Winner Wave Limited
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Date of Test: Dec. 11, 2025 ~ Dec. 31, 2025

Date of Report: Dec. 31, 2025

Report Number: HK2512116509-4E

Test Result Certification

Applicant's name : Winner Wave Limited
Address : Unit 2003 Cheong Tai Commercial Building 287-289 Reclamation Street, Kowloon, Hong Kong
Manufacturer's Name : Actions Microelectronics Co., Ltd.
Address : 201, No.9 Building, Software Park, KeJiZhongEr Road, GaoXinQu, NanShan, Shenzhen, China

Product description

Trade Mark: EZCast
Product name : Pocket
Model and/or type reference : R-1D, R-1, R-2, R-2D, R-3, R-3D

Standards : Article 2 Paragraph 1 of Item 19-3

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Date of Test

Date (s) of performance of tests : Dec. 11, 2025 ~ Dec. 31, 2025

Date of Issue : Dec. 31, 2025

Test Result : Pass

Testing Engineer



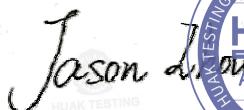
Len Liao

Technical Manager



Sliver Wan

Authorized Signatory



Jason Zhou



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**** Issued history ****

Revision	Description	Issued Date	Remark
Revision 1.0	Initial Test Report Release	Dec. 31, 2025	Jason Zhou

1. Summary of Test Results

Test procedures according to the technical standards:

Article 2 Paragraph 1 of Item 19-3

Table 5 lists the DFS related technical requirements and their applicability for every operational mode. If the RLAN device is capable of operating in more than one operational mode then every operating mode shall be assessed separately.

Article 2 Paragraph 1 of Item 19-3			
Requirement	Operational Mode		RESULTS
	Master	Client	
Non-Occupancy Period	Yes	Not required	Not required
DFS Detection Threshold	Yes	Not required	Not required
Channel Availability Check Time	Yes	Not required	Not required
Channel Closing Transmission Time	Yes	Yes	Pass
Channel Move Time	Yes	Yes	Pass
U-NII Detection Probability	Yes	Not required	Not required

Applicability of DFS requirements

1.1 Information of the Test Laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

1.2 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	DFS Threshold (radiated)	$\pm 1.50\text{dB}$
2	DFS Threshold (conducted)	$\pm 1.45\text{dB}$
7	Temperature	$\pm 0.5^{\circ}\text{C}$
8	Humidity	$\pm 2\%$

2. General Information

2.1 General Description of EUT

Equipment	Pocket											
Brand Name	EZCast											
Model Name	R-1D											
Series Model	R-1, R-2, R-2D, R-3, R-3D											
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: R-1D.											
Product Description	<table><tr><td>Operation Frequency:</td><td colspan="2">802.11a/n (HT20) 5.260GHz-5.320GHz 802.11n (HT40) 5.270GHz-5.310GHz 802.11a/n (HT20) 5.500GHz-5.700GHz 802.11n (HT40) 5.510GHz-5.670GHz</td></tr><tr><td>Modulation Type:</td><td colspan="2">IEEE 802.11a: DSSS (CCK, DQPSK,DBPSK) +OFDM(QPSK, BPSK, 16QAM, 64QAM) IEEE 802.11n: OFDM(MCS 0-7)</td></tr><tr><td>Antenna Gain(Peak):</td><td>5250~5350MHz: ANT A:2.22dBi</td><td>5470~5700MHz: ANT A:2.12dBi</td></tr></table> More details of EUT technical specification, please refer to the User's Manual.			Operation Frequency:	802.11a/n (HT20) 5.260GHz-5.320GHz 802.11n (HT40) 5.270GHz-5.310GHz 802.11a/n (HT20) 5.500GHz-5.700GHz 802.11n (HT40) 5.510GHz-5.670GHz		Modulation Type:	IEEE 802.11a: DSSS (CCK, DQPSK,DBPSK) +OFDM(QPSK, BPSK, 16QAM, 64QAM) IEEE 802.11n: OFDM(MCS 0-7)		Antenna Gain(Peak):	5250~5350MHz: ANT A:2.22dBi	5470~5700MHz: ANT A:2.12dBi
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Modulation Type:	IEEE 802.11a: DSSS (CCK, DQPSK,DBPSK) +OFDM(QPSK, BPSK, 16QAM, 64QAM) IEEE 802.11n: OFDM(MCS 0-7)											
Antenna Gain(Peak):	5250~5350MHz: ANT A:2.22dBi	5470~5700MHz: ANT A:2.12dBi										
Channel List	Please see Note 2.											
Adapter	DC5V From Type-C											
Hardware Version	V6.1											
Software Version	V26140012											

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- Antenna gain Refer to the antenna specifications.
- The cable loss data is obtained from the supplier.
- The test results in the report only apply to the tested sample.

Channel List for 802.11a/n (HT20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	56	5280	60	5300	64	5320

Channel List for 802.11n (HT40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310				

Channel List for 802.11a/n (HT20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	116	5580	118	5600	140	5700
144	5720						

Channel List for 802.11n (HT40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	110	5550	134	5670	142	5710

Test Channel List for 802.11n		
Band Frequency	EUT Channel	Test Frequency (MHz)
Band 2	CH52	5260

Test Channel List for 802.11 n		
Band Frequency	EUT Channel	Test Frequency (MHz)
Band 3	CH100	5500

Remark: The measurements are performed at the highest available channels.

3. Equipment Under Test (EUT) Details

The manufacturer declared values for the EUT operational characteristics that affect DFS are as follows

Operating Modes (5250 – 5350 MHz, 5470 – 5725 MHz)

- ☐ Master Device
☒ Client Device (no In Service Monitoring, no Ad-Hoc mode)
☐ Client Device with In-Service Monitoring

Antenna Gains / EIRP (5250 – 5350 MHz, 5470 – 5725 MHz)

	5250 – 5350 MHz(802.11n)	5470 – 5725 MHz (802.11n)
Antenna Gain (dBi)	2.22	2.12
DFS Detection Threshold (dBm)	E.I.R.P(<0.2W); Threshold=-62dBm E.I.R.P(>0.2W); Threshold=-64dBm	E.I.R.P(<0.2W); Threshold=-62dBm E.I.R.P(>0.2W); Threshold=-64dBm

Channel Protocol

- ☒ IP Based
☐ Frame Based
☐ OTHER _____

The EUT did not require modifications during testing in order to comply with the requirements of the standard(s) referenced in this test report.

2.2 Test Conditions

Normal Test Conditions	
Temperature	15°C – 35°C
Relative Humidity	20% - 75%
Supply Voltage	DC 5V From Type-C

2.3 DFS Measurement Instrumentation

a. Radar Generation System

An Agilent PSG is used as the radar-generating source. The integral arbitrary wave form generators are programmed using Agilent's "Pulse Building" software and Elliott custom software to produce the required waveforms, with the capability to produce both unmodulated and modulated (FM Chirp) pulses. Where there are multiple values for a specific radar parameter then the software selects a value at random and, for EU tests, the software verifies that the resulting waveform is truly unique.

With the exception of the hopping waveforms required by the EU's rules (see below), the radar generator is set to a single frequency within the radar detection bandwidth of the EUT.

Frequency hopping radar waveforms are simulated using a time domain model. A randomly hopping sequence algorithm (which uses each channel in the hopping radar's range once in a hopping sequence) generates a hop sequence. A segment of the first 100 elements of the hop sequence are then examined to determine if it contains one or more frequencies within the radar detection bandwidth of the EUT. If it does not then the first element of the segment is discarded and the next frequency in the sequence is added. The process repeats until a valid segment is produced. The radar system is then programmed to produce bursts at time slots coincident with the frequencies within the segment that fall in the detection bandwidth. The frequency of the generator is stepped in 1 MHz increments across the EUT's detection range.

The radar signal level is verified during testing using a CW signal with the AGC function switched on. Correction factors to account for the fact that pulses are generated with the AGC functions switched off are measured annually and an offset is used to account for this in the software. The generator output is connected to the coupling port of the conducted set-up or to the radar-generating antenna.

b. Channel Monitoring System

Channel monitoring is achieved using a spectrum analyzer and digital storage oscilloscope. The analyzer is configured in a zero-span mode, center frequency set to the radar waveform's frequency or the center frequency of the EUT's operating channel.

The IF output of the analyzer is connected to one input of the oscilloscope and analyzer.

A signal generator output is set to send either the modulating signal directly or a pulse gate with an output pulse co-incident with each radar pulse. This output is connected to a second input on the oscilloscope and the oscilloscope displays both the channel traffic (via the if input) and the radar pulses on its display.

For in service monitoring tests the analyzer sweep time is set to > 20 seconds and the oscilloscope is configured with a data record length of 10 seconds for the short duration and frequency hopping waveforms, 20 seconds for the long duration waveforms. Both instruments are set for a single acquisition sequence. The analyzer is triggered 500ms before the start of the waveform and the oscilloscope is triggered directly by the modulating pulse train. Timing measurements for aggregate channel transmission time and channel move time are made from the oscilloscope data, with the end of the waveform clearly identified by the pulse train on one trace. The analyzer trace data is used to confirm that the last transmission occurred within the 10-second record of the oscilloscope. If necessary the record length of the oscilloscope is expanded to capture the last transmission on the channel prior to the channel move.

Channel availability check time timing plots are made using the analyzer. The analyzer is triggered at start of the EUT's channel availability check and used to verify that the EUT does not transmit when radar is applied during the check time.

The analyzer detector and oscilloscope sampling mode is set to peak detect for all plots.

2.4 Equipments List for All Test Items

Adaptively & Receiver Blocking						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	Spectrum analyzer	R&S	FSP40	HKE-025	2025/02/19	2026/02/18
2	Wireless Communication Test Set	R&S & DFS	CMU200	HKE-026	2025/02/19	2026/02/18
3	Wireless Communication Test Set	R&S	CMW500	HKE-027	2025/02/19	2026/02/18
4	RF automatic control unit	Tonscend	JS0806-2	HKE-060	2025/02/19	2026/02/18
5	RF test software	Tonscend	JS1120-3 V3.5.39	HKE-083	/	/

3. DFS Parameters and Radar Waveforms calibration

3.1 DFS Parameters

Spec	Item	Requirement			Applicable
Article 2-1	19-3	Radar Threshold	E.I.R.P < 0.2W	Threshold = -62 dBm	☐
			E.I.R.P ≥ 0.2W	Threshold = -64 dBm	☐
		Radar Type	--	W53 Fixed Pulse 1 W53 Fixed Pulse 2	☐
		Test Items	Closing time	≤260ms	☒
			Non-Occupancy Period	≥30 Minutes	☐
			CAC-Time	≥60 seconds	☐
			Channel Move time	≤10sec	☒
Article 2-1	19-3	Radar Threshold	E.I.R.P < 0.2W	Threshold = -62 dBm	☐
			E.I.R.P ≥ 0.2W	Threshold = -64 dBm	☐
		Radar Type	--	W56 Fixed Pulse 1 W56 Fixed Pulse 2 W56 Fixed Pulse 3 W56 Variable Pulse 1 W56 Variable Pulse 2 W56 Variable Pulse 3 W56 Chirp, W56 Hopping	☐
		Test Items	Closing time	≤260ms	☒
			Non-Occupancy Period	≥30 Minutes	☐
			CAC-Time	≥60 seconds	☐
			Channel Move time	≤10sec	☒
Article 2-1	19-3 5.26GHz	Radar Threshold	E.I.R.P < 0.2W	Threshold = -62 dBm	☐
			E.I.R.P ≥ 0.2W	Threshold = -64 dBm	☐
		Radar Type	--	W53 Fixed Pulse 1 W53 Fixed Pulse 2	☐
		Test Items	Closing time	≤260ms	☒
			Non-Occupancy Period	≥30 Minutes	☐
			CAC-Time	≥60 seconds	☐
			Channel Move time	≤10sec	☒

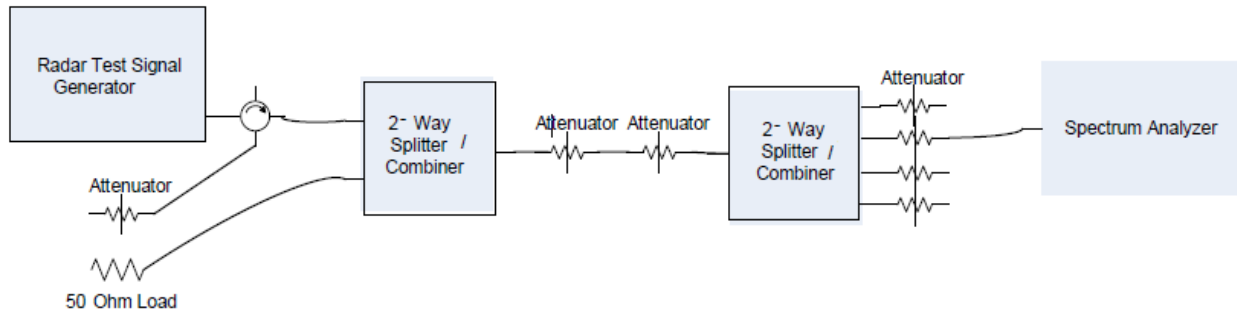
		Radar Threshold	E.I.R.P < 0.2W	Threshold = -62 dBm	☐
			E.I.R.P ≥ 0.2W	Threshold = -64 dBm	☐
Article 2-1	19-3 5.26GHz, 5.50GHz	Radar Type	--	W56 Fixed Pulse 1 W56 Fixed Pulse 2 W56 Fixed Pulse 3 W56 Variable Pulse 1 W56 Variable Pulse 2 W56 Variable Pulse 3 W56 Chirp, W56 Hopping	☐
Article 2-1	19-3 5.26GHz, 5.50GHz	Test Items	Closing time	≤260ms	☒
			Non-Occupancy Period	≥30 Minutes	☐
			CAC-Time	≥60 seconds	☐
			Channel Move time	≤10sec	☒

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 15 days only. The document is issued by Shenzhen HUAKE Testing Technology Co., Ltd., this document cannot be reproduced except in full with our prior written permission.



3.2 Radar Waveform Calibration

1. The following equipment setup was used to calibrate the conducted Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -62 dBm and -64 dBm.



Conducted Calibration Setup

3.3 DFS –Test Parameter

3.3.1 DFS Measurement Methods

Type Radar Reporting Notes

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time. The aggregate channel closing transmission time is calculated as follows: Aggregate Transmission Time = (Number of analyzer bins showing transmission) * (dwell time per bin) The observation period over which the aggregate time is calculated Begins at (Reference Marker) And Ends no earlier than (Reference Marker + 10 sec).

a. FS – Channel Closing Transmission Time and Channel Move Time

Channel clearing and closing times are measured by applying a burst of radar with the device configured to change channel and by observing the channel for transmissions. The time between the end of the applied radar waveform and the final transmission on the channel is the channel move time.

The aggregate transmission closing time is measured in one of two ways: Japan MIC – the total time of all individual transmissions from the EUT that are observed from the end of the last radar pulse in the waveform. This value is required to be less than 260ms.

b. DFS – Channel Non-Occupancy and Verification of Passive Scanning

The channel that was in use prior to radar detection by the master is additionally monitored for 30 minutes to ensure no transmissions on the vacated channel over the required non-occupancy period. This is achieved by tuning the spectrum analyzer to the vacated channel in zero-span mode and connecting the IF output to an oscilloscope. The oscilloscope is triggered by the radar pulse and set to provide a single sweep (in peak detect mode) that lasts for at least 30 minutes after the end of the channel move time.

c. Channel Availability Check Time

It is preferred that the EUT report when it starts the radar channel availability check. If the EUT does not report the start of the check time, then the time to start transmitting on a channel after switching the device on is measured to approximate the time from power onto the end of the channel availability check. The start of the channel availability check is assumed to be 60 seconds prior to the first transmission on the channel. To evaluate the channel availability check, a single burst of one radar type is applied within the first 2 seconds of the start of the channel availability check and it is verified that the device does not use the channel by continuing to monitor the channel for a period of at least 60 seconds. The test is repeated by applying a burst of radar in the last 2seconds (i.e. between 58 and 60 seconds after the start of CAC) of the channel availability check.

d. Control (TPC)

Compliance with the transmit power control requirements for devices is demonstrated through measurements showing multiple power levels and manufacturer statements explaining how the power control is implemented.

e. Detection Probability / Success Rate

The detection probability, or success rate, for any one radar waveform equals the number of successful trials divided by the total number of trials for that waveform.

f. Shold Level

The threshold level is to simulate radar waveform rf way. If the test is performed in a conducted fashion then the level at the rf input equals the level at the antenna plus the gain of the antenna assembly, in dBi. The gain of the antenna assembly equals the gain of the antenna minus the loss of the cabling between the rf input and the antenna. The lowest gain value for all antenna assemblies intended for use with the device is used when making this calculation. If the test is performed using the radiated method then the threshold level is the level at the antenna.

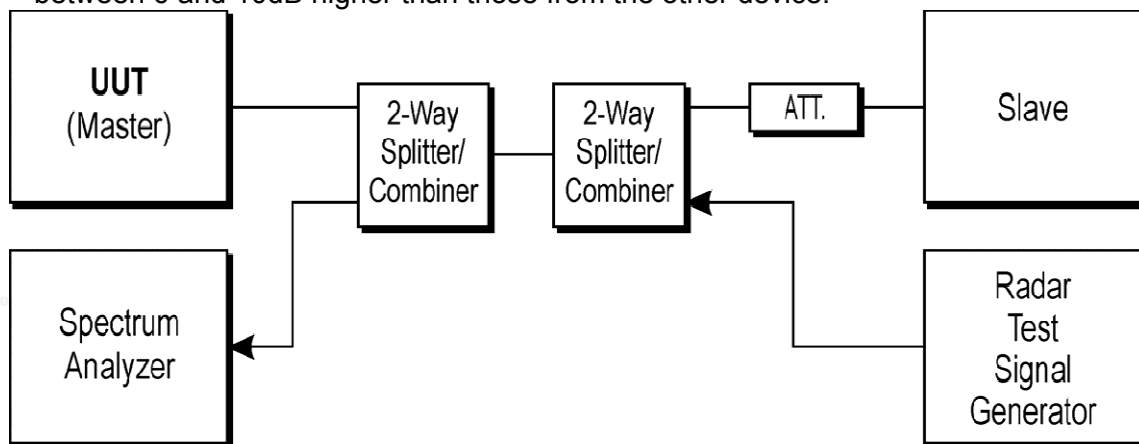
3.3.2 DFS Conduction test Method

- a. The signal level of the simulated waveform is set to a reference level equal to the threshold level (plus 1dB if testing against EU requirements). Lower levels may also be applied on request of the manufacturer.

The signal level is verified by measuring the CW signal level at the coupling point to the RDD antenna port. The radar signal level is calculated from the measured level, R (dBm) and the lowest gain antenna assembly intended for use with the RDD

If both master and client devices have radar detection capability then the radar level at the non RDD is verified to be at least 20dB below the threshold level to ensure that any responses are due to the RDD detecting radar.

The antenna connected to the channel monitoring subsystem is positioned to allow both master and client transmissions to be observed, with the level of the EUT's transmissions between 6 and 10dB higher than those from the other device.



- b. Set-up is a set-up whereby the UUT is an RLAN device operating in master mode. Radar test signals are injected into the UUT. This set-up also contains an RLAN device operating in slave mode which is associated with the UUT. Figure 4 shows an example for Set-up A. The set-up used shall be documented in the test report.

3.4 DFS –Test Results

3.4.1 Channel Closing transmission Time and Channel Move Time

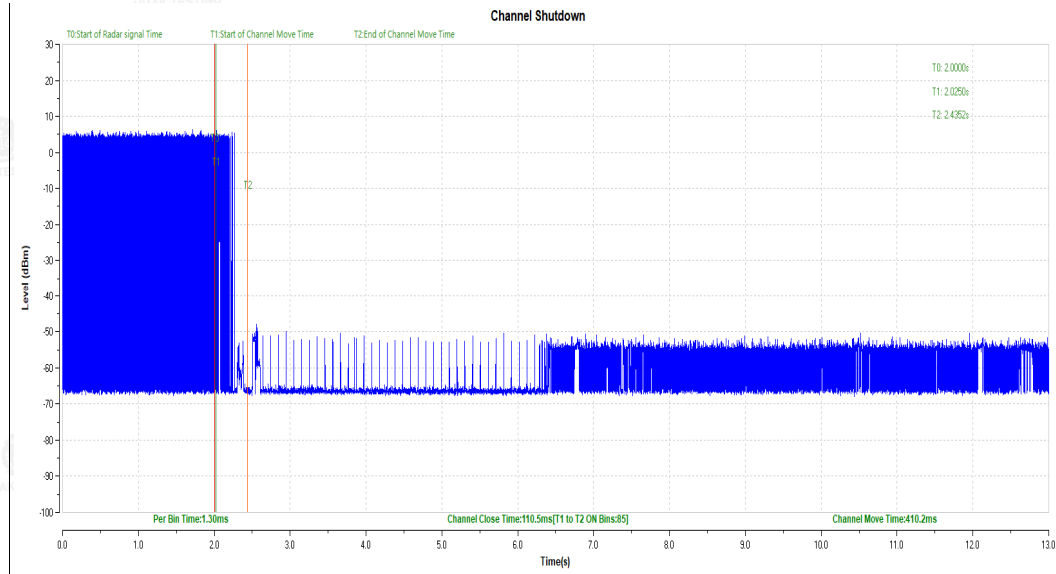
Test Result Summary					
Description	Radar Type	Radar Frequency	Measured Value	Requirement	Status
Channel closing transmission time	W53 Fixed Pulse 1 W53 Fixed Pulse 2	5260	110.5ms	<260ms	Complies
Channel move time		5260	0.4102s	<10s	Complies

Test Result Summary					
Description	Radar Type	Radar Frequency	Measured Value	Requirement	Status
Channel closing transmission time	W56 Fixed Pulse 1 W56 Fixed Pulse 2 W56 Fixed Pulse 3 W56 Variable Pulse 1	5500	100.1ms	<260ms	Complies
Channel move time	W56 Variable Pulse 2 W56 Variable Pulse 3 W56 Chirp, W56 Hopping				

Remark: Tests were performed using the conduction test method.

5.3G (Worst case)

IEEE 802.11n20-(5260MHZ) Channel move time & Channel Closing Transmission Time for W53 Fixed Pulse 1 Radar



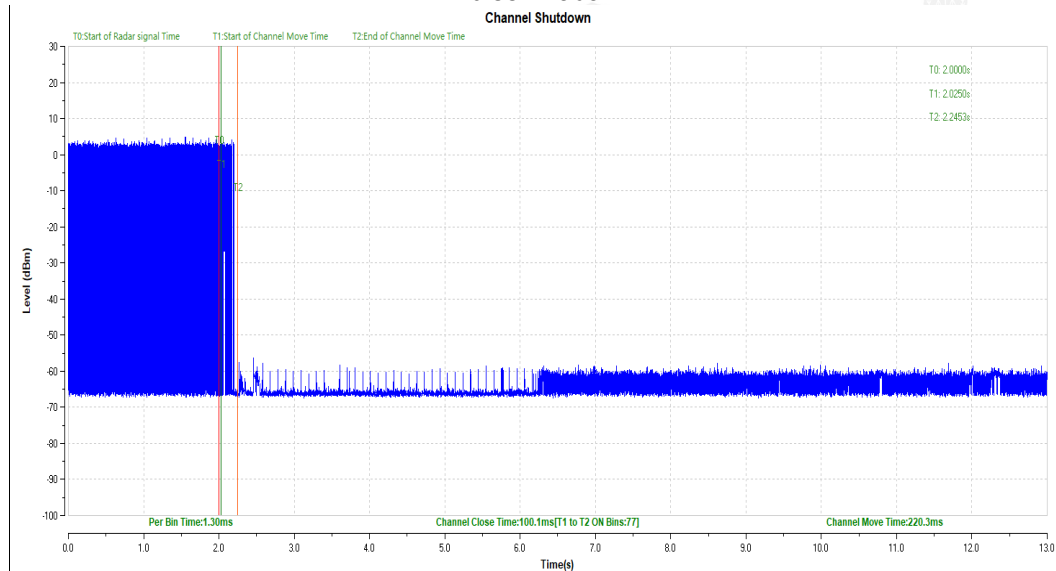
Note:

Dwell (20ms) = Sweep Time (20020ms) / Sweep Point Bins (1001)

Channel Closing Transmission Time (200 + 0ms) = 200 + Number (0) X Dwell (20ms) < 1000ms

5.6G (Worst case)

IEEE 802.11n20-(5500MHZ) Channel move time & Channel Closing Transmission Time for W56 Fixed Pulse 1 radar.



Note:

Dwell (20ms) = Sweep Time (20020ms) / Sweep Point Bins (1001)

Channel Closing Transmission Time (200 + 0ms) = 200 + Number (0) X Dwell (20ms) < 1000ms

3.4.2 Non-Occupancy Period

Not applicable, the EUT is a slave RLAN device without radar detection.
Therefore the Non-Occupancy Period is not required.

3.4.3 Radar Detection Threshold

Not applicable, the EUT is a slave RLAN device without radar detection.
Therefore the Radar Detection Threshold is not required.

3.4.4 In-Service Monitoring

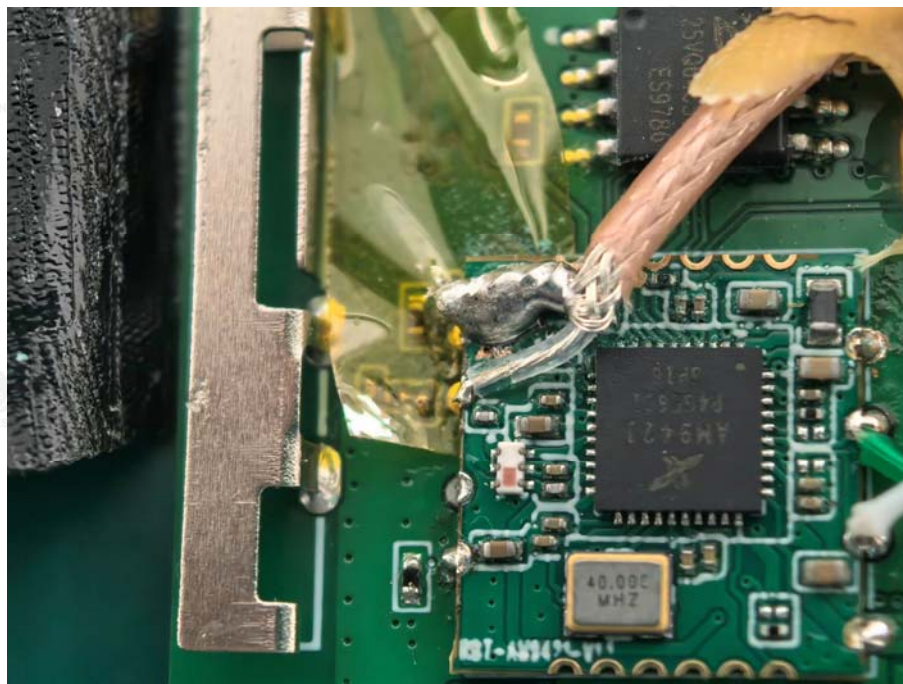
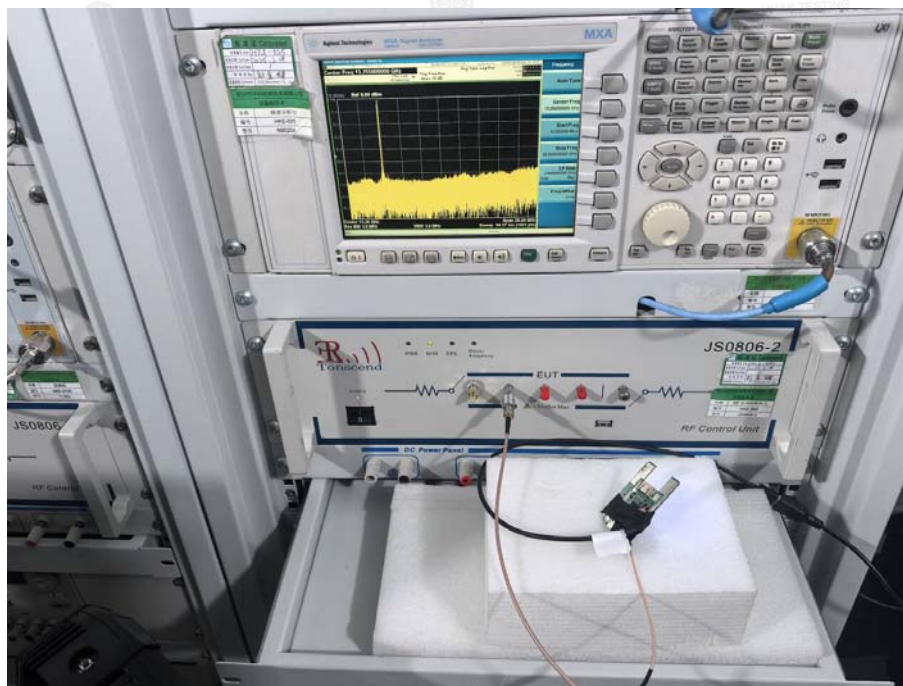
Not applicable, the EUT is a slave RLAN device without radar detection.
Therefore the In-Service Monitoring is not required.

3.4.5 Channel Availability Check Time

Not applicable, the EUT is a slave RLAN device without radar detection.

Therefore the Channel Availability Check Time is not required.

4. DFS Test Photo



-----End of report-----