



## DFS Test Report

**Report No.:** RJ190523C16-2

**Test Model:** DBA-2820P

**Received Date:** May 23, 2019

**Test Date:** Jun. 15 ~ Jun. 21, 2019

**Issued Date:** Jun. 24, 2019

**Applicant:** D-Link Corporation

**Address:** No. 289, Sinhu 3rd Rd., Neihu District, Taipei City, 114, Taiwan

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)

**Test Location:** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
RJ190523C16-2	Original release	Jun. 24, 2019



## 1 Certificate of Conformity

**Product:** Nuclias Cloud-Managed AC2600 Wave 2 Access Point

**Brand:** D-Link

**Test Model:** DBA-2820P

**Sample Status:** Engineering sample

**Applicant:** D-Link Corporation

**Test Date:** Jun. 15 ~ Jun. 21, 2019

**Standards:** ARIB STD-T71, MIC notice 88 Appendix 45

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Jun. 24, 2019  
Celine Chou / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Jun. 24, 2019  
Bruce Chen / Project Engineer



## 2 Dynamic Frequency Selection

The manufacturer shall state whether the UUT is capable of operating as a Master and/or a Slave. If the UUT is capable of operating in more than one operating mode then each operating mode shall be tested separately. See tables A and B for the applicability of DFS requirements prior to use a channel (Channel Availability Check) and during normal operation (In-Service Monitoring) for each of the operational modes.

Table A: Applicability of DFS requirements prior to use a channel

Requirement	Operational Mode
	Master
Interference Detection Threshold	✓
Channel Availability Check Time	✓
Non-Occupancy Period	✓

Table B: Applicability of DFS requirements during normal operation

Requirement	Operational Mode
	Master
Interference Detection Threshold	✓
Channel Closing Transmission Time	✓
Channel Move Time	✓
Non-Occupancy Period	✓



## 2.1 Test Limits and Radar Signal Parameters

### Interference Threshold Values

Master Device

Maximum Transmit Power	Power Value
$\geq 200\text{mW}$ ( $\geq 23\text{dBm}$ )	-64dBm
$< 200\text{mW}$ ( $< 23\text{dBm}$ )	-62dBm
This level is only for 0dBi EUT antenna gain	

### DFS Requirement Time Values

Parameter	Value
Channel Availability Check Time	60 s
Non-occupancy Period	30 minutes
Channel Move Time	10 s
Channel Closing Transmission Time	260 ms

### Parameters of DFS Test Signals

#### W53

Radar Test Signal	Pulse Repetition Frequency (PRF)	Pulse Width (us)	Number of Pulses per Burst	Burst Period (sec)	Radar Detection Probability
DFS-J1-1	700	1	18	15	60% or more
DFS-J1-2	260	2.5	18	15	60% or more

\*1. The Channel Loading is 50% of Maximum Transmission Data Rate.

\*2. The receiving threshold level is the following. (This is the average power while receiving radar with an absolute gain 0 dBi antenna.)

The case of  $P_o \geq 200\text{mW}$ ;  $\geq -64\text{dBm}(\text{avg.})$  / The case of  $P_o < 200\text{mW}$ ;  $\geq -62\text{dBm}(\text{avg.})$

( $P_o$ ; Max. Transmit Power (EIRP) of EUT)



**W56**

Radar Type	Pulse Repetition Frequency (PRF)	Pulse Width (μsec)	Number of Pulses	Radar Detection Probability
DFS-J2-1	720	0.5	18	60% or more
DFS-J2-2	250	2	18	60% or more
DFS-US-1	700	1	18	60% or more
DFS-US-2	4347 – 6667	1-5	23-29	60% or more
DFS-US-3	2000 – 5000	6-10	16-18	60% or more
DFS-US-4	2000 – 5000	11-20	12-16	60% or more
Aggregate (Radar Types 1-6)				80% or more

\*1. The Channel Loading is 17% of Maximum Transmission Data Rate.

\*2. The aggregate is the average of the percentage of successful detections of 6 Radar Types.

\*3. The receiving threshold level is the following. (This is the average power while receiving radar with an absolute gain 0 dBi antenna.)

The case of  $P_o \geq 200\text{mW}$ ;  $\geq -64\text{dBm}(\text{avg.})$  / The case of  $P_o < 200\text{mW}$ ;  $\geq -62\text{dBm}(\text{avg.})$

( $P_o$ ; Max. Transmit Power (EIRP) of EUT)

Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Number of Pulses per Burst	Radar Detection Probability
DFS-US-5	500-1000	50 - 100	1-3	80% or more

\*1. The Channel Loading is 17% of Maximum Transferred Data Rate.

\*2. The transmission period for Long Pulse Radar test signal is 12 seconds.

\*3. Each pulse has a liner frequency modulated chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulse in different Bursts may have different chirp widths.

\*4. There are a total of 8 to 20 Bursts in the 12 second period. The interval of Burst is the time when divided 12 seconds by the number of the bursts.

\*5. In the case of being lots pulse in the Burst, each pulse is same as them.

\*6. In the case of being lots pulse in the Burst, each Burst within the 12 second sequence must have a different number of pulses.

\*7. The receiving threshold level is the following. (This is the average power while receiving radar with an absolute gain 0 dBi antenna.)

The case of  $P_o \geq 200\text{mW}$ ;  $\geq -64\text{dBm}(\text{avg.})$  / The case of  $P_o < 200\text{mW}$ ;  $\geq -62\text{dBm}(\text{avg.})$

( $P_o$ ; Max. Transmit Power (EIRP) of EUT)



Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Pulses per Hop	Radar Detection Probability
DFS-US-6	3000	1	9	70% or more

\*1. The Channel Loading is 17% of Maximum Transferred Data Rate.  
\*2. The frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250MHz to 5724MHz.  
\*3. The Switching Interval of Hopping Sequence is 3 millisecond, and the Hopping Sequence Length is 300 millisecond.  
\*4. The Burst Interval is 3 millisecond.  
\*5. The receiving threshold level is the following. (This is the average power while receiving radar with an absolute gain 0 dBi antenna.)  
The case of  $P_o \geq 200\text{mW}$ ;  $\geq -64\text{dBm}(\text{avg.})$  / The case of  $P_o < 200\text{mW}$ ;  $\geq -62\text{dBm}(\text{avg.})$   
( $P_o$ ; Max. Transmit Power (EIRP) of EUT)





## 2.2 Test Instruments

Description & Manufacturer	Model No.	Brand	Date of Calibration	Due Date of Calibration	Calibration Authority	Calibration Method
Spectrum analyzer	ESR	R&S	Mar 06, 2019	Mar 05, 2020	ETC	Refer to Note 2
Signal generator	MXG	KEYSIGHT	Dec 24, 2018	Dec 23, 2019	ETC	Refer to Note 2
Horn antenna	BBHA 9120 D	Schwarzbeck	Nov 25, 2018	Nov. 24, 2019	BV CPS E&E	Refer to Note 2
RF coaxial cable	SUCOFLEX 104	HUBER SUHNER	Aug. 23, 2018	Aug. 22, 2019	BV CPS E&E	Refer to Note 2

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency. (1) Electronics Testing Center, Taiwan. (2) Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

## 2.3 EUT Information

### EUT Software and Firmware Version

No.	Product	Test Model No.	Software/Firmware Version
1	Nucias Cloud-Managed AC2600 Wave 2 Access Point	DBA-2820P	2.00.000

### Description of Available Antennas to the EUT

Ant.	Antenna Type	Connector	Frequency range (MHz to MHz)	Gain (dBi)
1	PIFA	IPEX	5250-5725	4
2	PIFA	IPEX	5250-5725	4
3	PIFA	IPEX	5250-5725	4
4	PIFA	IPEX	5250-5725	4

## 2.4 Description of Support Units

### Support Unit information

No.	Product	Brand	Model No.	Software/Firmware Version
1	WiFi USB Adapter	NETGEAR	A6210	5.1.22.0

Note: This device was functioned as a ☐ Master ☒ Slave device during the DFS test.

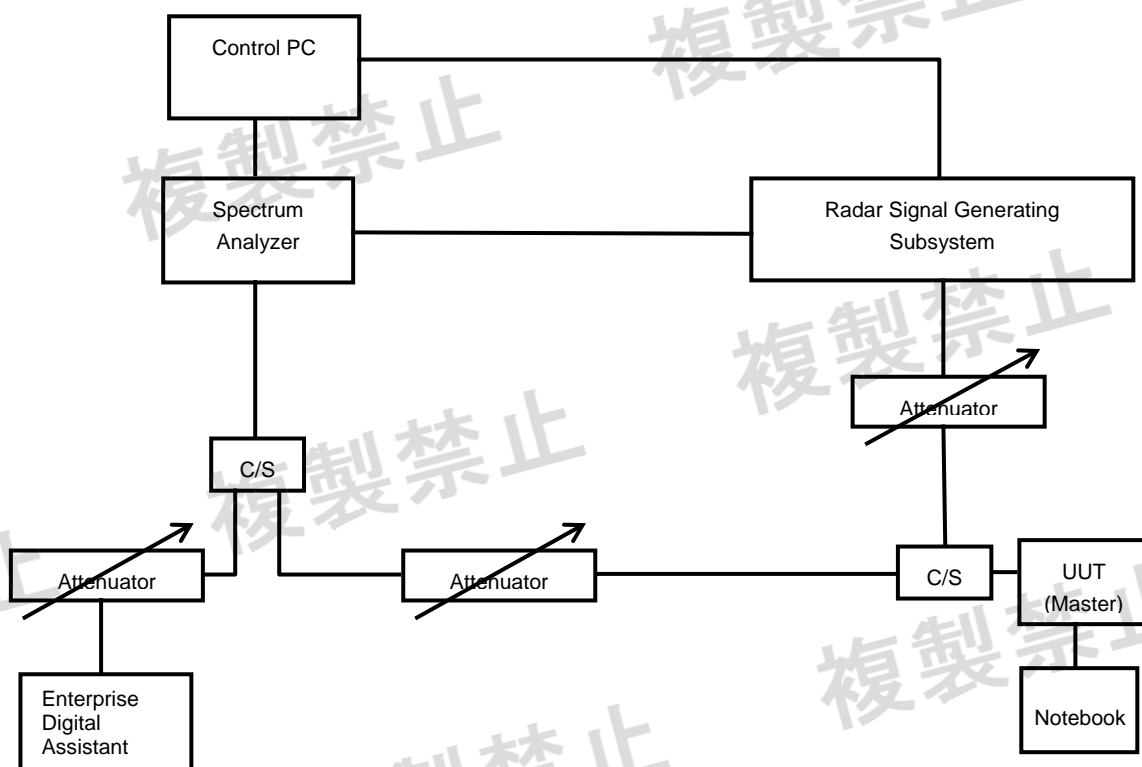
## 2.5 Test Procedure

The measured channels are in the W53 and W56 bands. The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) with  $-64\text{dBm}$  power level for W53 band and  $-64\text{dBm}$  power level for W56 band, measured the Channel Availability Check time and channel closing transmission time and channel move time and Non-Occupancy Period. The master transmitted the test data to slave, the half of Maximum Loading factor is  $13.309\text{Mbps}/26.618\text{Mbps}=50\%$  @  $54\text{Mbps}$  data rate, channel loading shall over 50%.

## 2.6 Deviation from Test Standard

No deviation.

## 2.7 Conducted Test Setup Configuration



The UUT is capable of operating as a Master mode. The radar test signals are injected into the Master Device.

## 2.8 Photographs of the Test Configuration



### 2.8.1 List of Measurements

Clause	Test Parameter	Remarks	Pass/Fail
6.3.5.6	Interference Detection Threshold	Applicable	Pass
6.3.5.6	Channel Availability Check Time	Applicable	Pass
6.3.5.6	Channel Closing Transmission Time	Applicable	Pass
6.3.5.6	Channel Move Time	Applicable	Pass
6.3.5.6	Non-Occupancy Period	Applicable	Pass

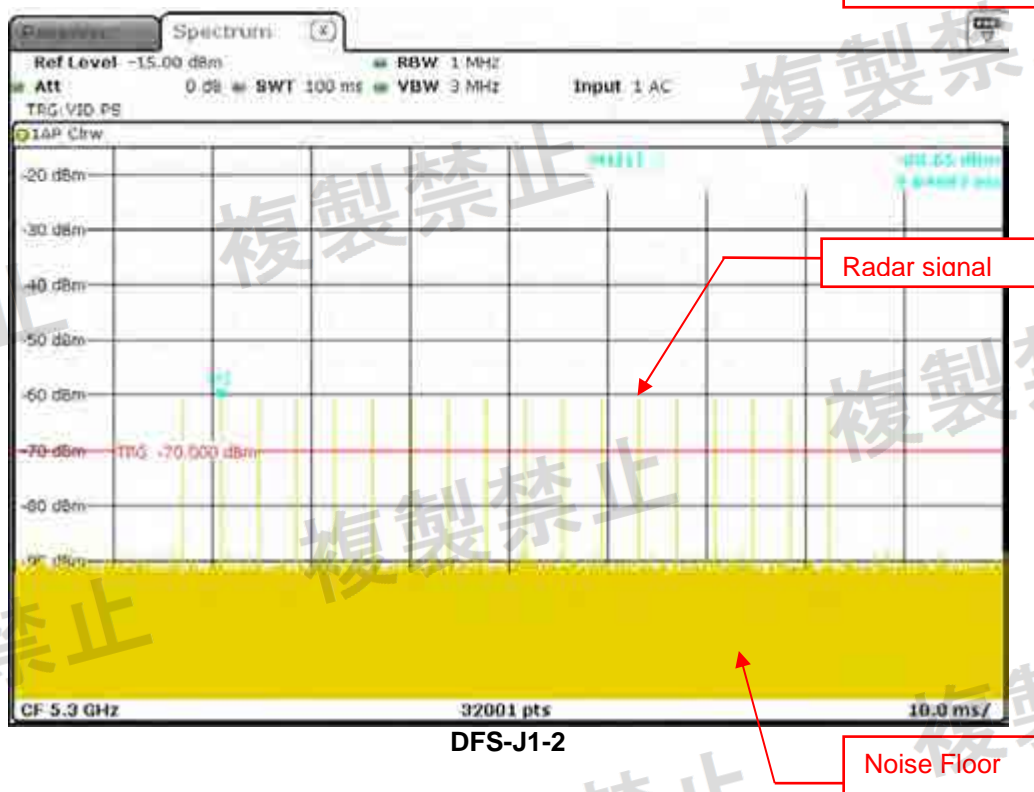
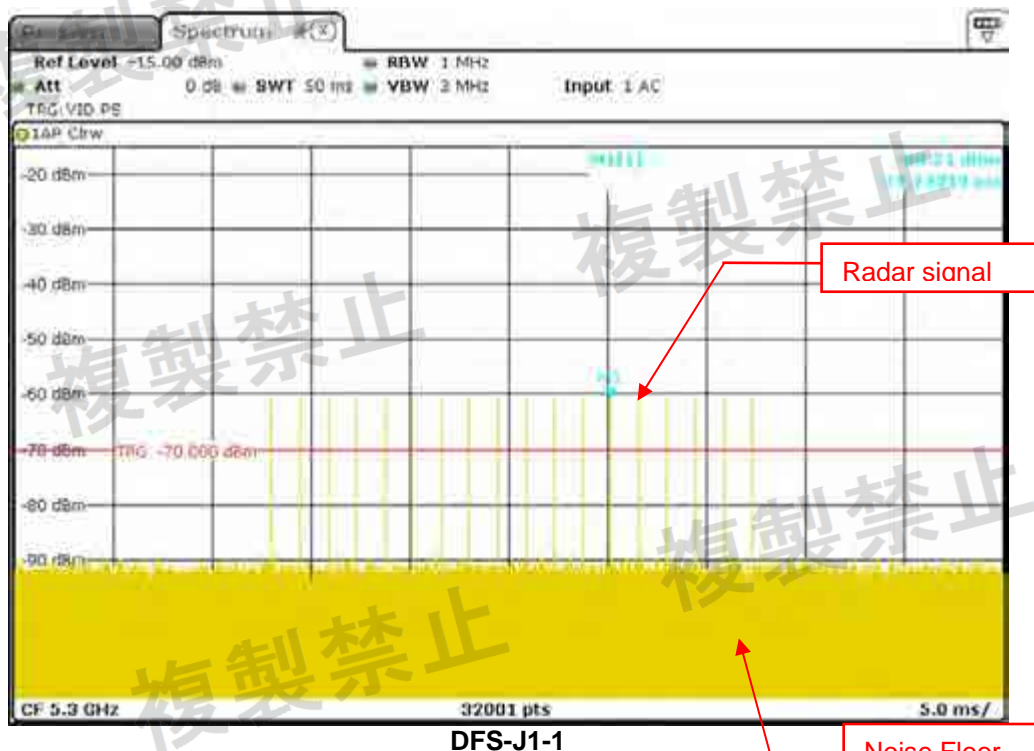
Note: This UUT is capable of operating as a master (with radar detection).

## 2.8.2 Test Result

### INTERFERENCE THRESHOLD VALUES INJECTED INTO AP

#### W53

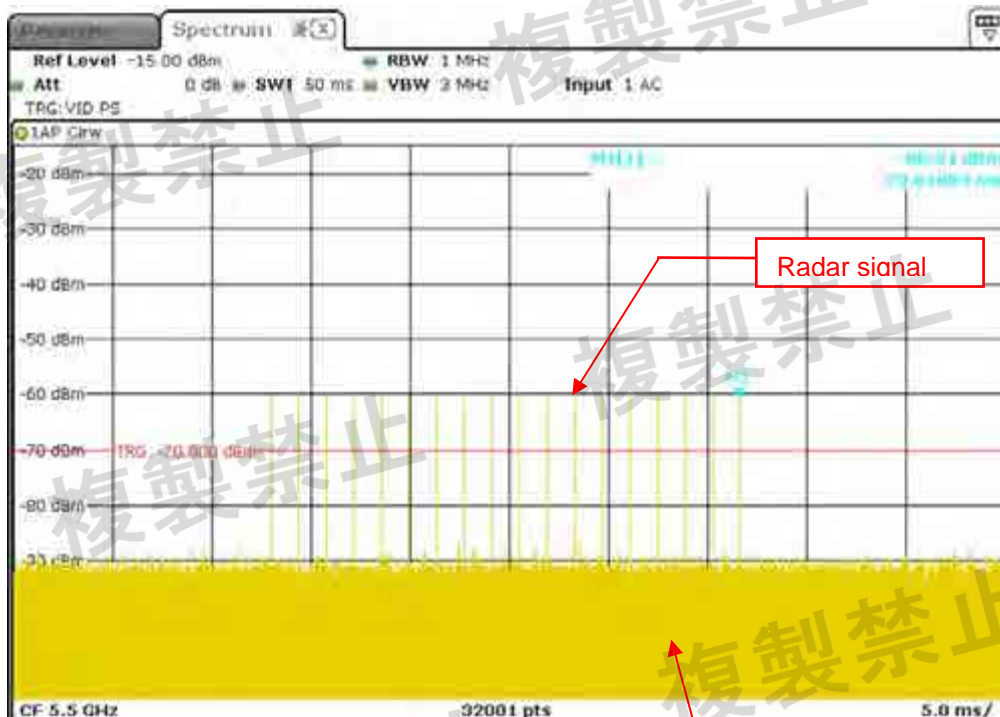
For an interference threshold level of  $-64\text{dBm}$  and the AP antenna gain is  $4\text{dBi}$ . Then the radar Burst signal level to the AP connector is  $-60\text{dBm}$ .





# W56

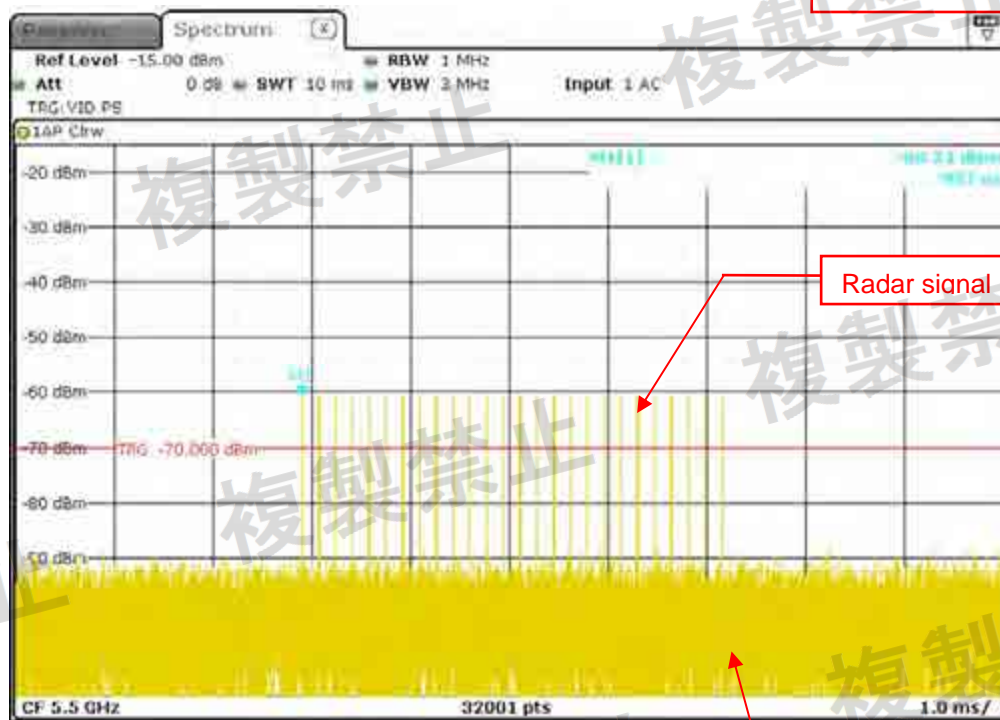
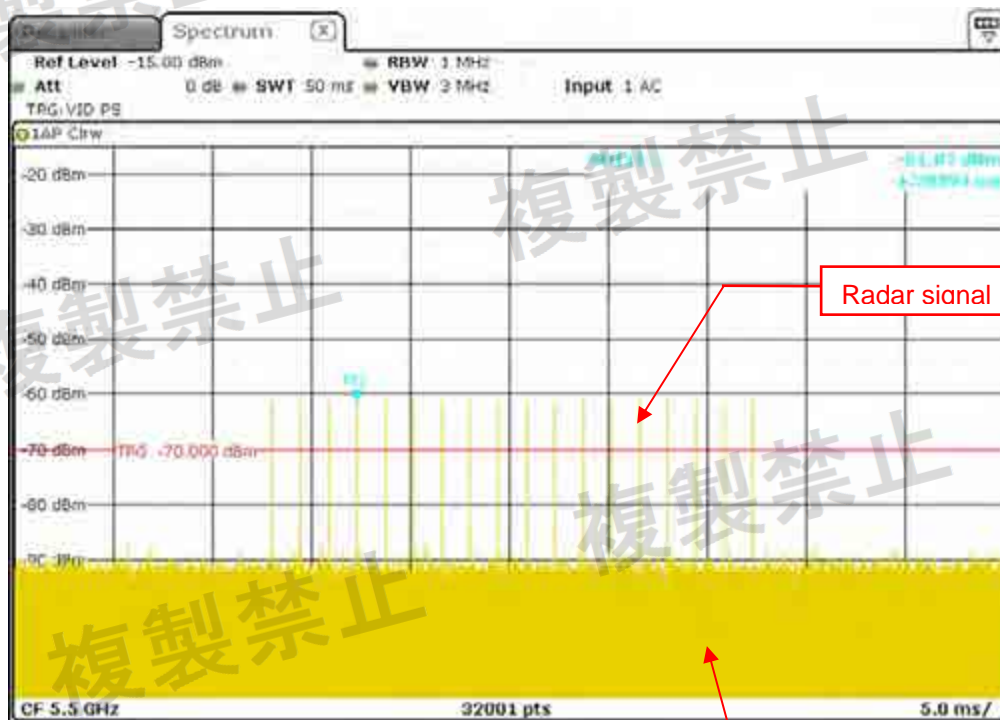
For an interference threshold level of  $-64\text{ dBm}$  and the AP antenna gain is  $4\text{ dBi}$ . Then the radar Burst signal level to the AP connector is  $-60\text{ dBm}$



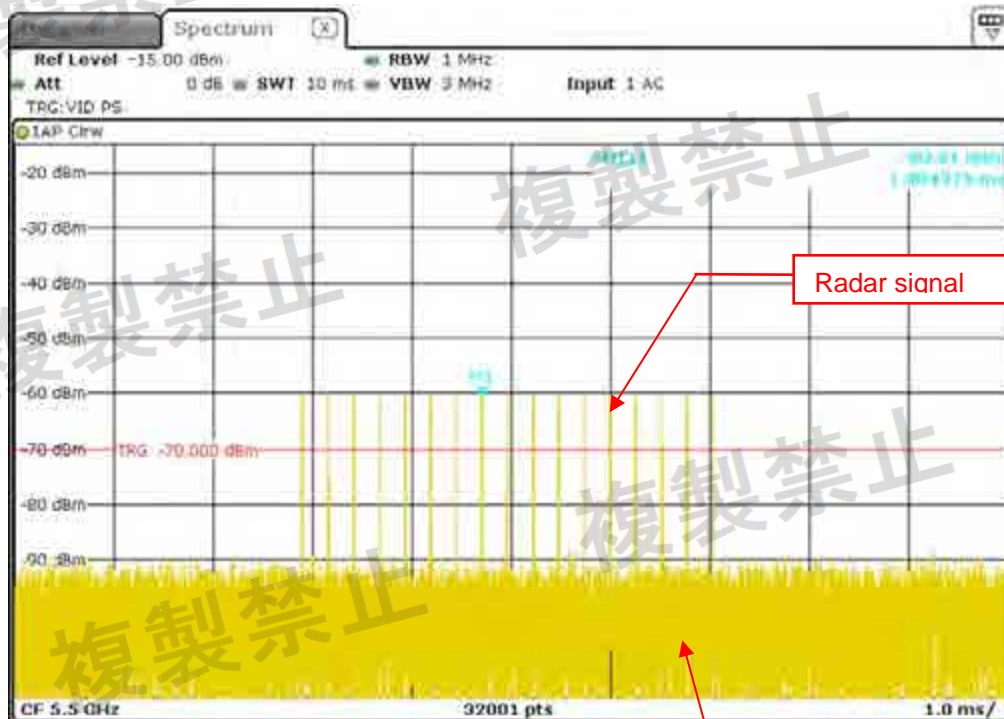
DFS-J2-1



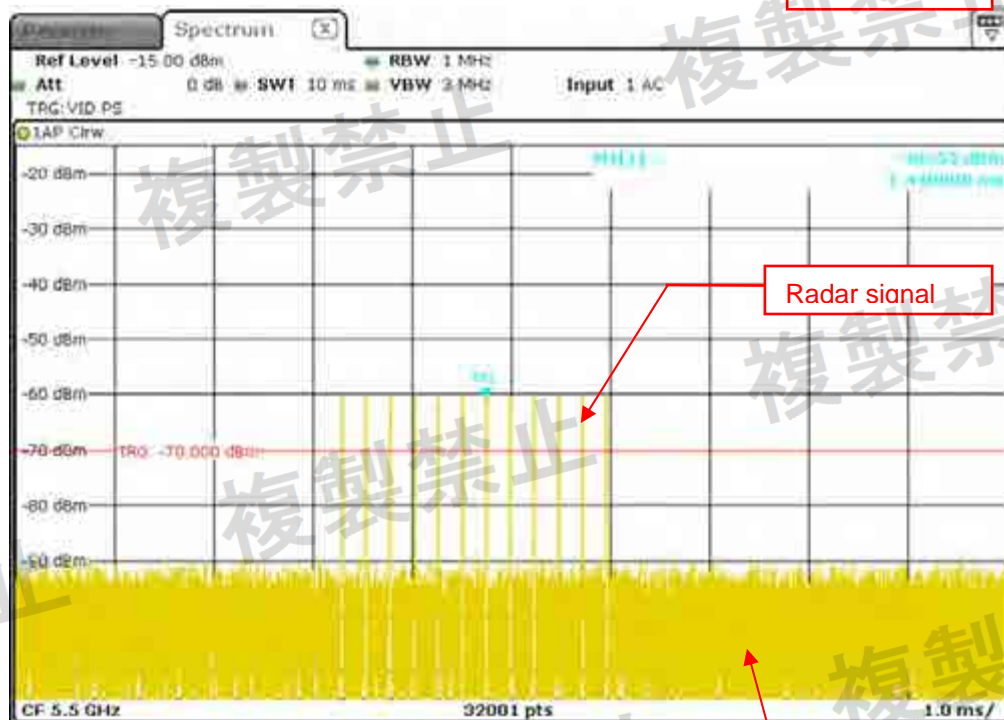
DFS-J2-2



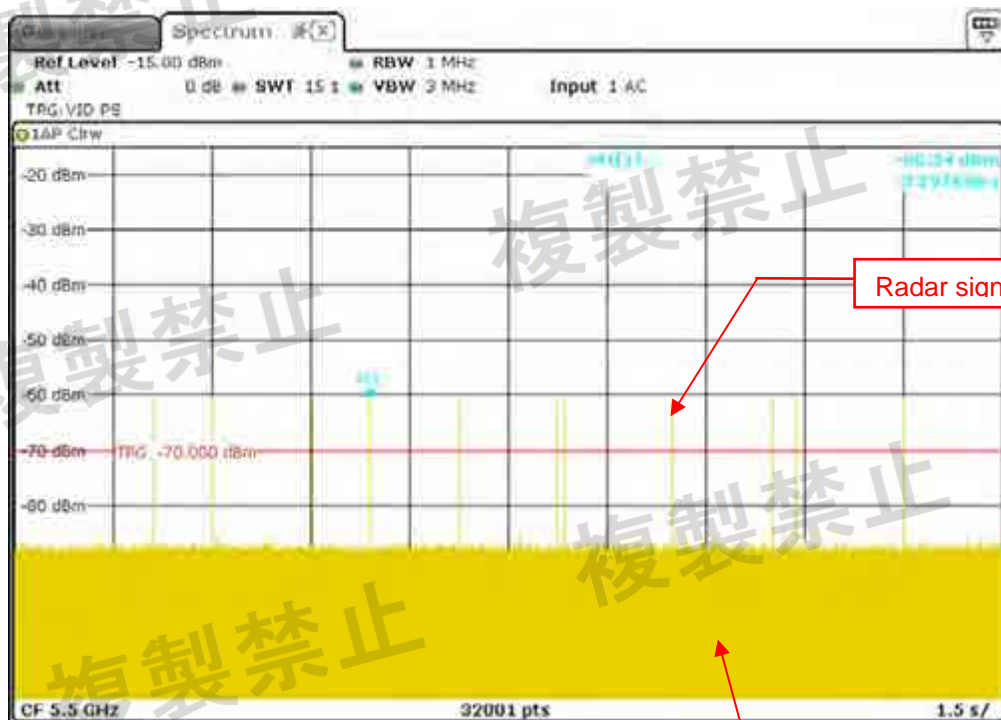




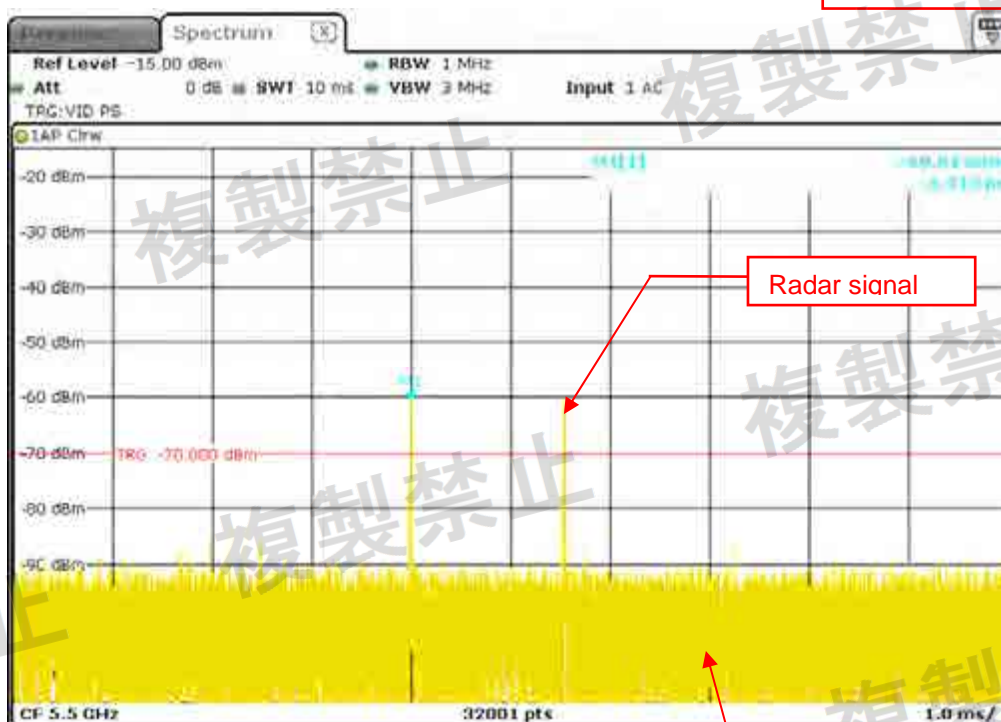
DFS-US-3



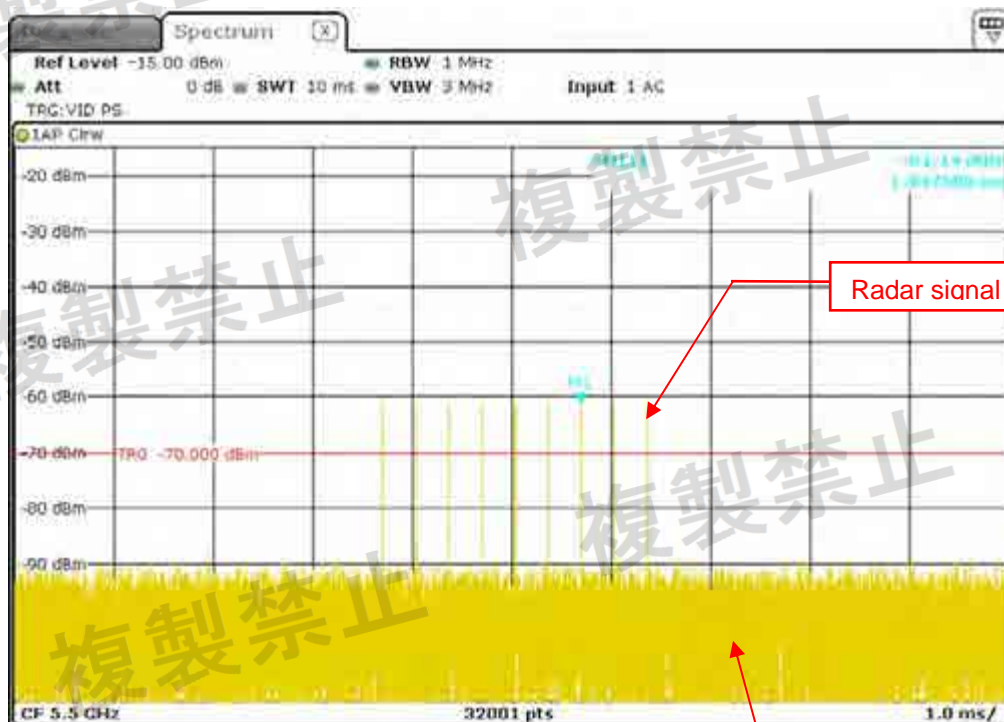
DFS-US-4



Long Pulse Radar



Long Pulse Radar Signal



Frequency Hopping Radar Signal

Noise Floor



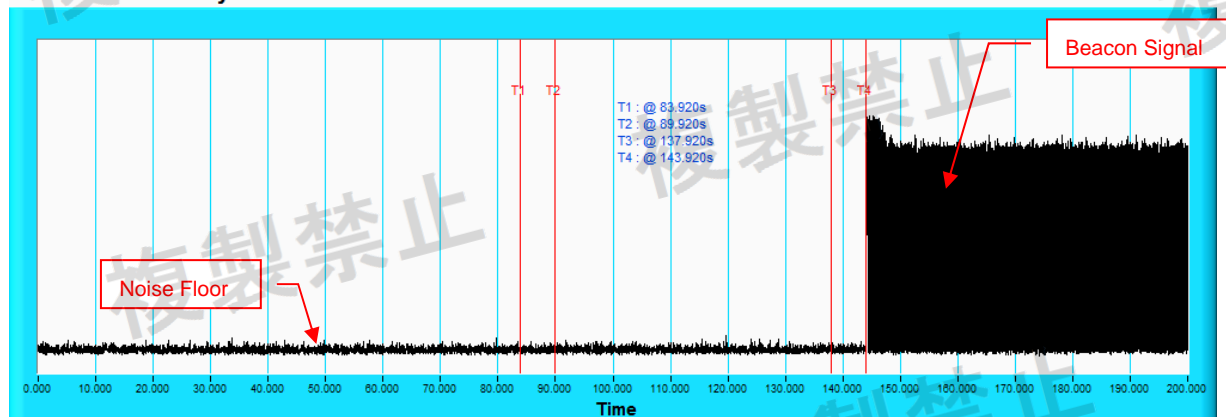
### 2.8.2.1 Channel Availability Check Time

#### For W53

If the UUT successfully detected the radar burst, it should be observed as the UUT has no transmissions occurred until the UUT starts transmitting on another channel.

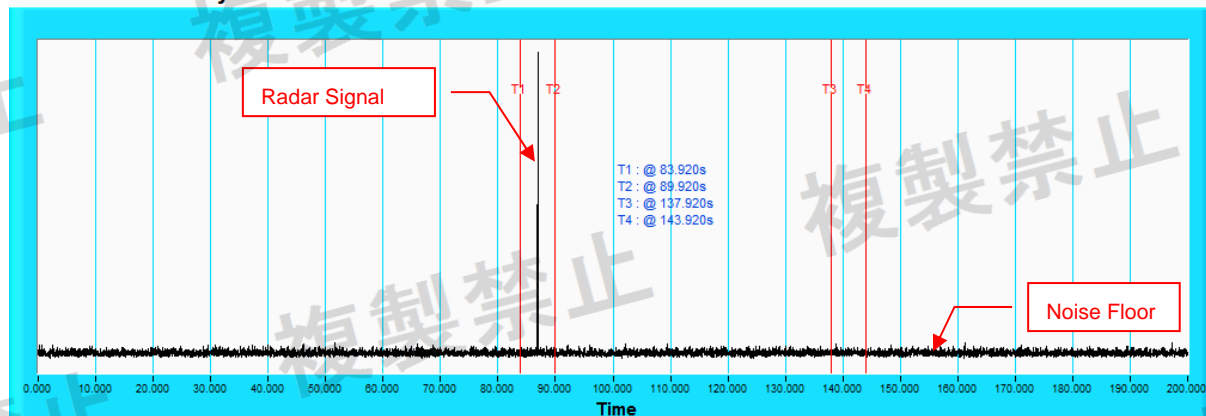
Timing of Radar Signal	Observation	
	UUT	Spectrum Analyzer
Within 1 to 6 second	Detected	No transmissions
Within 54 to 60 second	Detected	No transmissions

### Initial Channel Availability Check Time Channel Availability Check



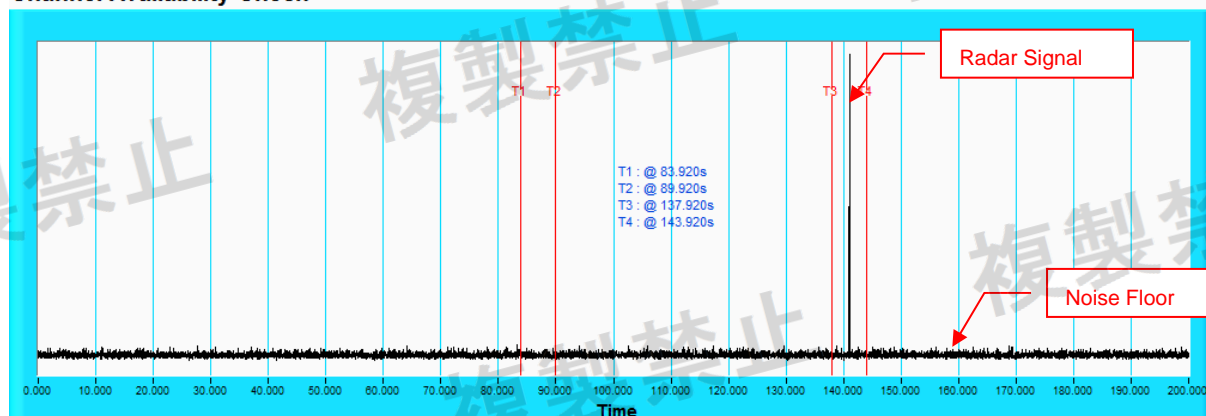
Note: T1 denotes the end of power-up time period is 83.92<sup>th</sup> second. T4 denotes the end of Channel Availability Check time is 143.92<sup>th</sup> second. Channel Availability Check time is equal to ( T4 – T1 ) 60 seconds.

### Radar Burst at the Beginning of the Channel Availability Check Time Channel Availability Check



Note: T1 denotes the end of power up time period is 83.92<sup>th</sup> second. the radar burst was commenced within a 6 second window starting from the end of power-up sequence. T4 denotes the 143.92<sup>th</sup> second.

### Radar Burst at the End of the Channel Availability Check Time Channel Availability Check



Note: T1 denotes the end of power up time period is 83.92<sup>th</sup> second. T3 denotes 137.92<sup>th</sup> second and T4 denotes the 143.92<sup>th</sup> second. The radar burst was commenced within 54<sup>th</sup> second to 60<sup>th</sup> second window starting from the end of power-up sequence.





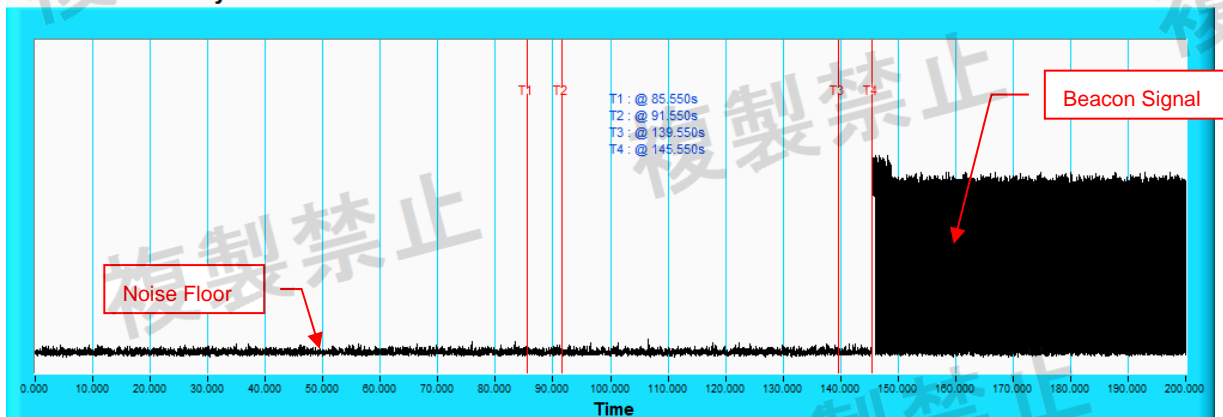
**For W56**

If the UUT successfully detected the radar burst, it should be observed as the UUT has no transmissions occurred until the UUT starts transmitting on another channel.

Timing of Radar Signal	Observation	
	UUT	Spectrum Analyzer
Within 1 to 6 second	Detected	No transmissions
Within 54 to 60 second	Detected	No transmissions

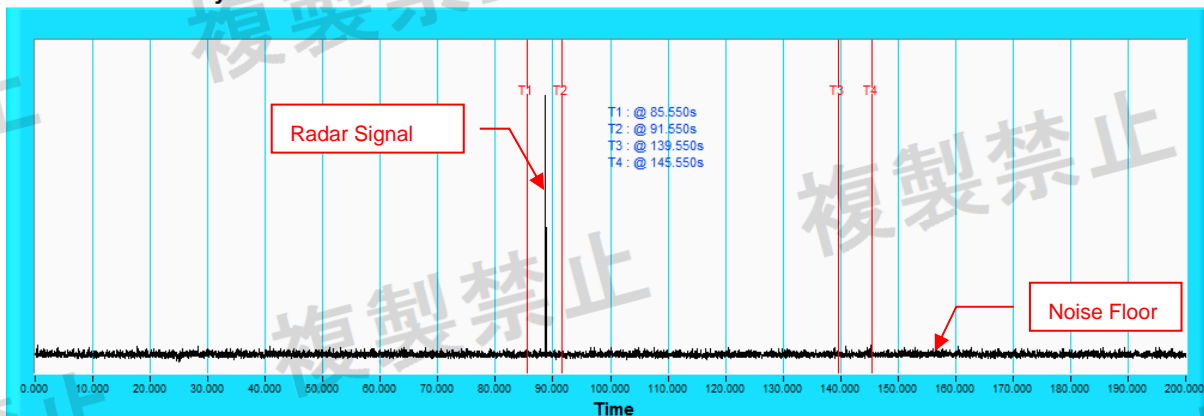


## Initial Channel Availability Check Time Channel Availability Check



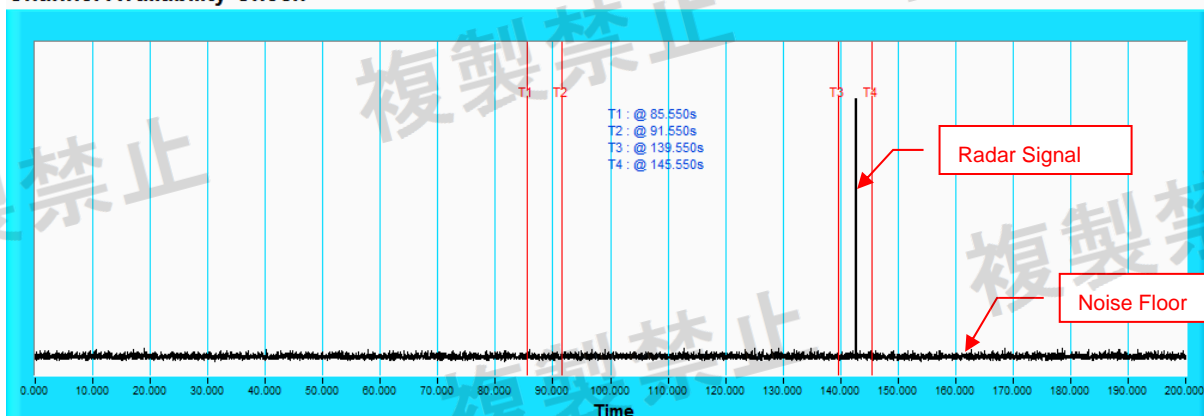
Note: T1 denotes the end of power-up time period is 85.55<sup>th</sup> second. T4 denotes the end of Channel Availability Check time is 145.55<sup>th</sup> second. Channel Availability Check time is equal to ( T4 – T1) 60 seconds.

## Radar Burst at the Beginning of the Channel Availability Check Time Channel Availability Check



Note: T1 denotes the end of power up time period is 85.55<sup>th</sup> second. the radar burst was commenced within a 6 second window starting from the end of power-up sequence. T4 denotes the 145.55<sup>th</sup> second.

## Radar Burst at the End of the Channel Availability Check Time Channel Availability Check



Note: T1 denotes the end of power up time period is 85.55<sup>th</sup> second. T3 denotes 139.55<sup>th</sup> second and T4 denotes the 145.55<sup>th</sup> second. The radar burst was commenced within 54<sup>th</sup> second to 60<sup>th</sup> second window starting from the end of power-up sequence.

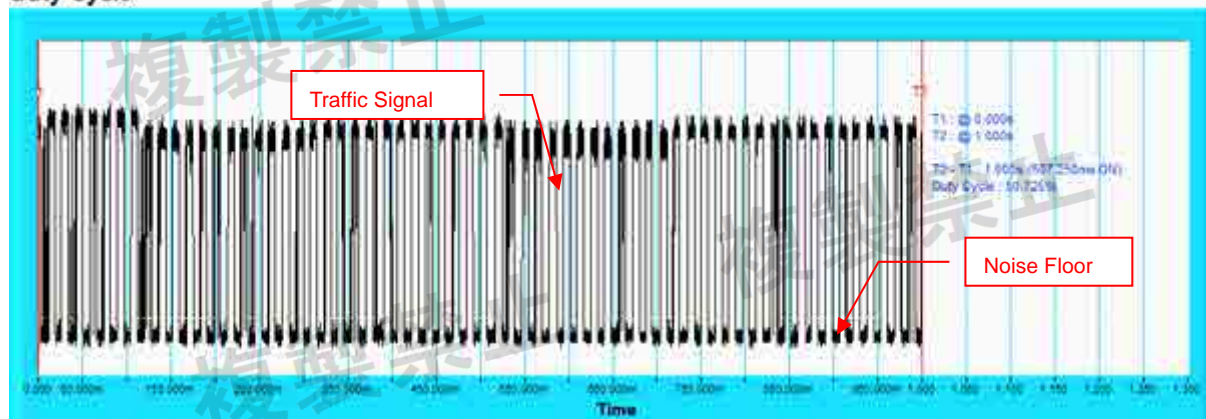
## CHANNEL CLOSING TRANSMISSION TIME AND CHANNEL MOVE TIME

The channel closing time is aggregated duration of all transmissions from the UUT during the channel move time. The Aggregate duration of all transmission of the UUT does not include quiet periods in between transmissions of the UUT.

### **W53 WLAN TRAFFIC**

#### **802.11a**

##### **Duty Cycle**



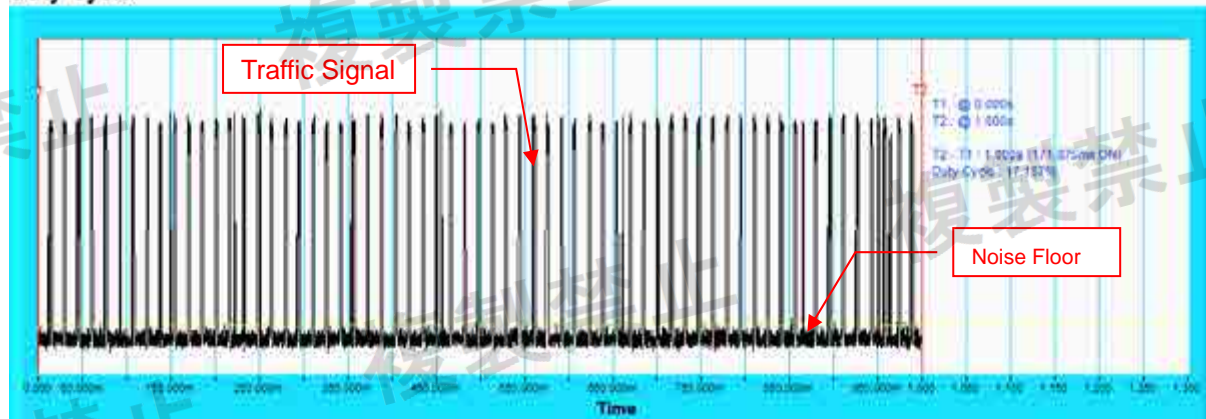
Note:

1. Traffic signal from master transmit to slave and average channel loading is 13.309Mbps.
2. T1 denotes the start of duty cycle period is 0<sup>th</sup> second. T2 denotes the end of duty cycle period is 1<sup>th</sup> second. T2 – T1= 1<sup>th</sup> seconds. Duty Cycle = 50.725%

### **W56 WLAN TRAFFIC**

#### **802.11a**

##### **Duty Cycle**



Note: T1 denotes the start of duty cycle period is 0<sup>th</sup> second. T2 denotes the end of duty cycle period is 1<sup>th</sup> second. T2 – T1= 1<sup>th</sup> seconds. Duty Cycle = 17.187%

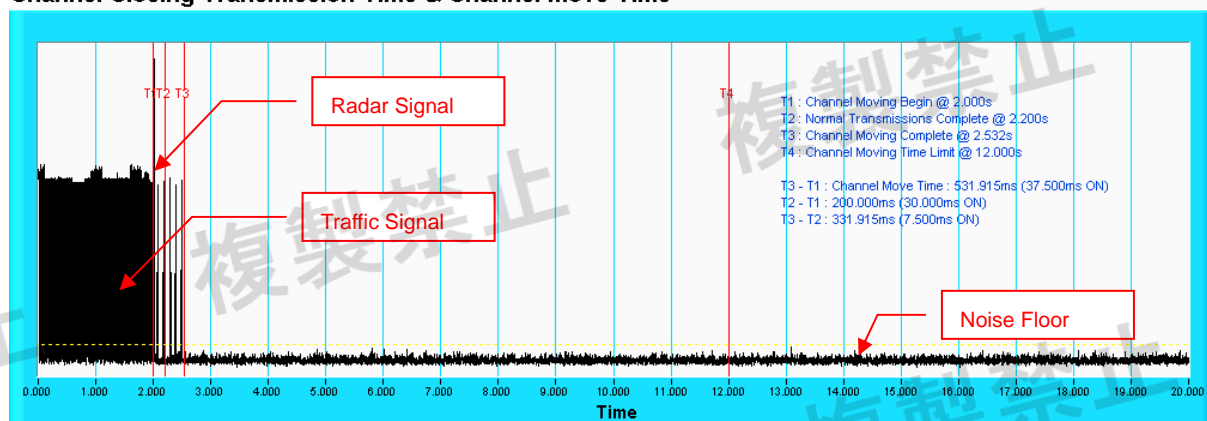


### W53 802.11a

Radar Test Signal	Pulse Repetition Frequency (pps)	Pulse Width (us)	Number of Pulses per Burst	Burst Period (sec)	Minimum Percentage of Successful Detection	Percentage of Successful Detection (%)
DFS-J1-1	700	1	18	15	60%	75%
DFS-J1-2	260	2.5	18	15	60%	75%

### DFS-J1-1

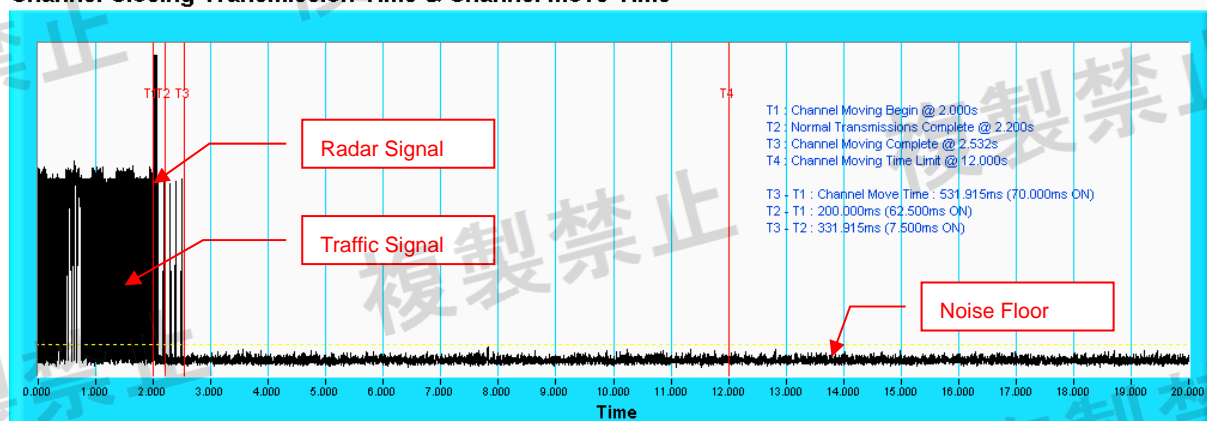
#### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

### DFS-J1-2

#### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

**W53 802.11a**

DFS-J1-1 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5300	Yes
2	5320	Yes
3	5300	Yes
4	5300	Yes
5	5300	Yes
6	5280	Yes
7	5320	Yes
8	5280	Yes
9	5320	No
10	5320	Yes
11	5320	No
12	5300	Yes
13	5280	Yes
14	5320	No
15	5320	No
16	5280	Yes
17	5300	Yes
18	5280	No
19	5280	Yes
20	5320	Yes
Detection Rate		75%
Minimum Percentage of Successful Detection		60 %
Result		Pass

**W53 802.11a**

DFS-J1-2 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5280	No
2	5260	Yes
3	5320	Yes
4	5320	Yes
5	5260	Yes
6	5280	Yes
7	5320	Yes
8	5280	Yes
9	5280	Yes
10	5300	Yes
11	5320	Yes
12	5260	Yes
13	5320	No
14	5300	No
15	5300	Yes
16	5320	Yes
17	5320	No
18	5300	Yes
19	5320	Yes
20	5320	No
Detection Rate		75%
Minimum Percentage of Successful Detection		60%
Result		Pass



**W56 802.11a**

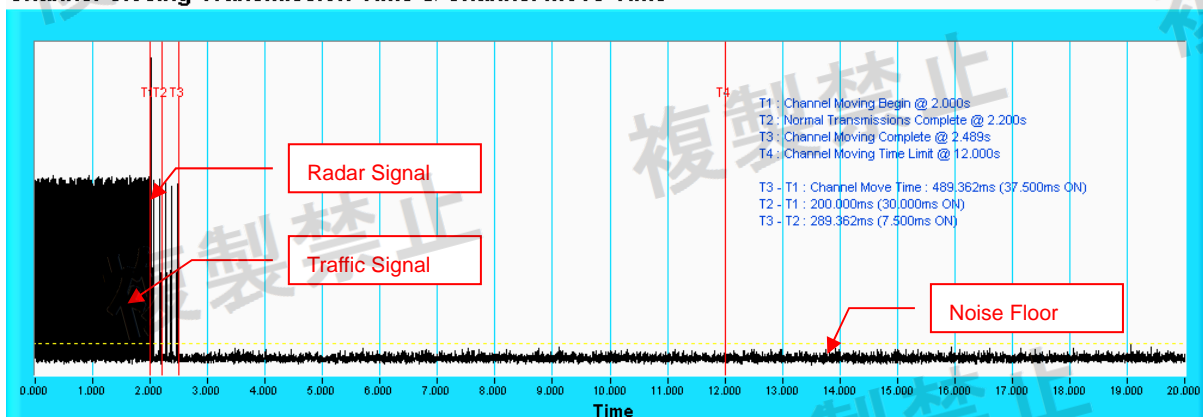
Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Percentage of Successful Detection (%)
DFS-J2-1	720	0.5	18	60%	100%
DFS-J2-2	250	2	18	60%	100%
DFS-US-1	700	1	18	60%	95%
DFS-US-2	4347 – 6667	1-5	23-29	60%	80%
DFS-US-3	2000 – 5000	6-10	16-18	60%	80%
DFS-US-4	2000 - 5000	11-20	12-16	60%	70%
Aggregate (Radar Types 1-6)				80%	87.5%

Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Number of Pulses per Burst	Minimum Percentage of Successful Detection	Percentage of Successful Detection (%)
DFS-US-5	500-1000	50 - 100	1-3	80%	100%

Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Pulses per Hop	Minimum Percentage of Successful Detection	Percentage of Successful Detection (%)
DFS-US-6	3000	1	9	70%	90%

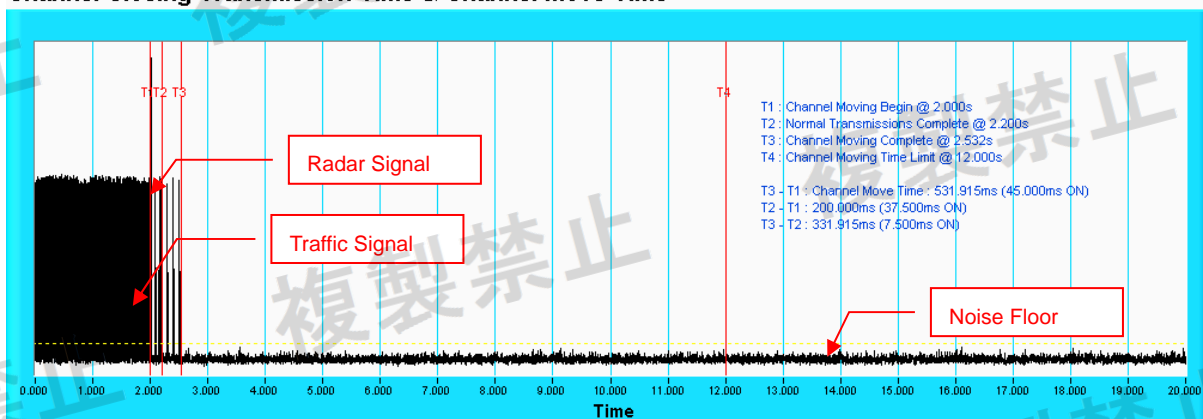


## DFS-J2-1 Channel Closing Transmission Time & Channel Move Time



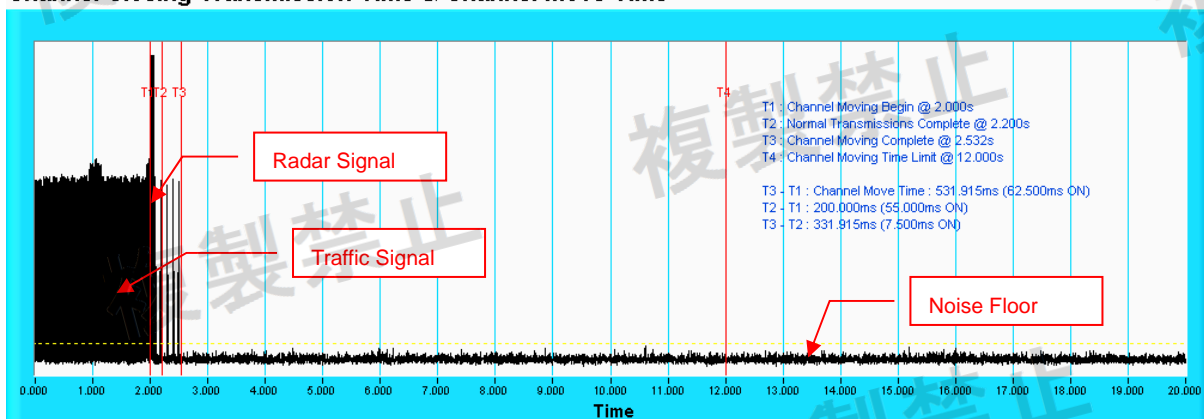
Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

## DFS-J2-2 Channel Closing Transmission Time & Channel Move Time



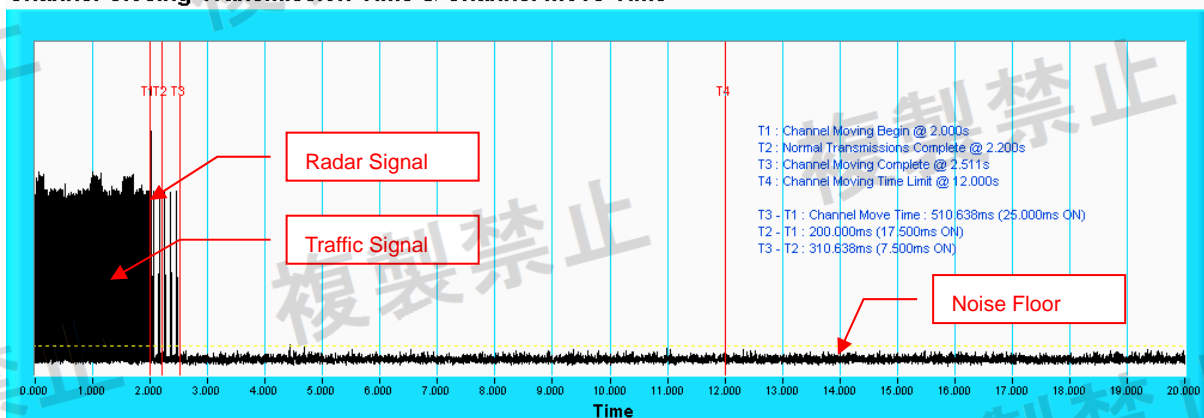
Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

## DFS-US-1 Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

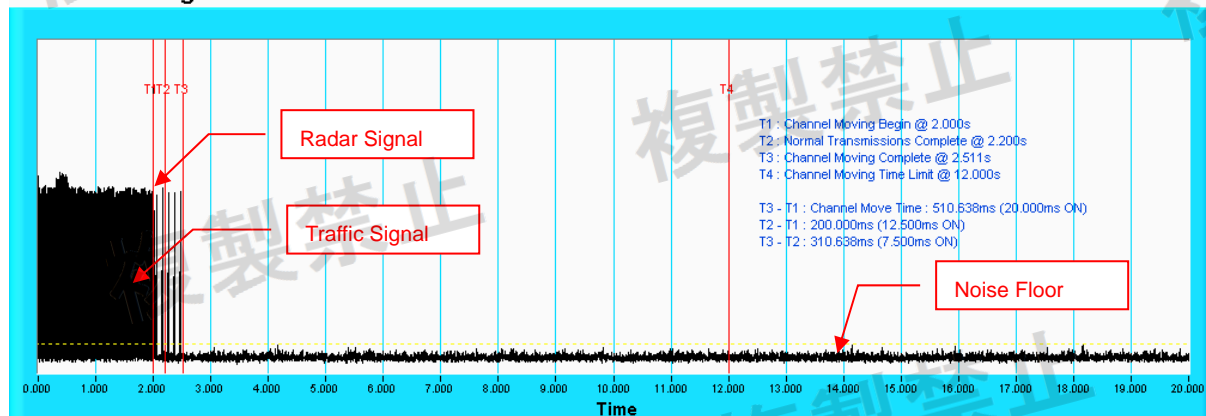
## DFS-US-2 Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

### DFS-US-3

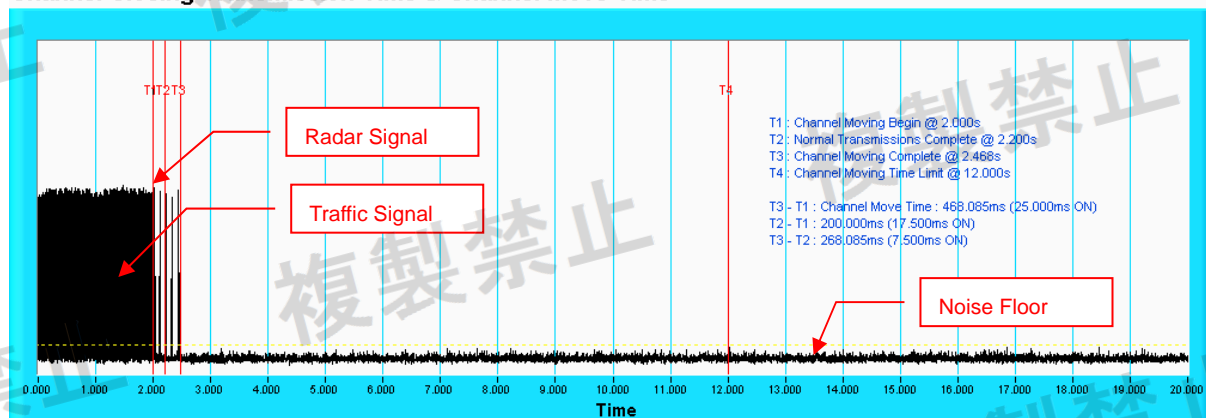
#### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

### DFS-US-4

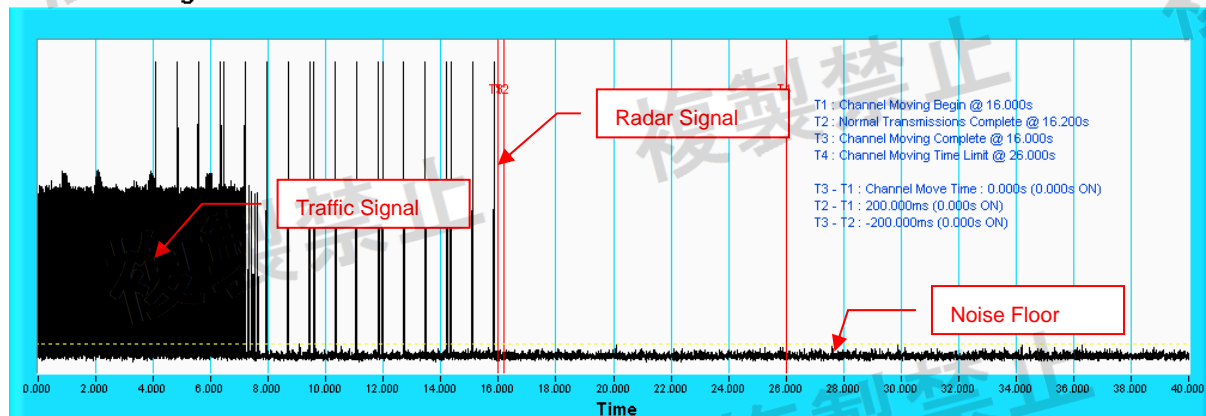
#### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

## Long pulse radar signal

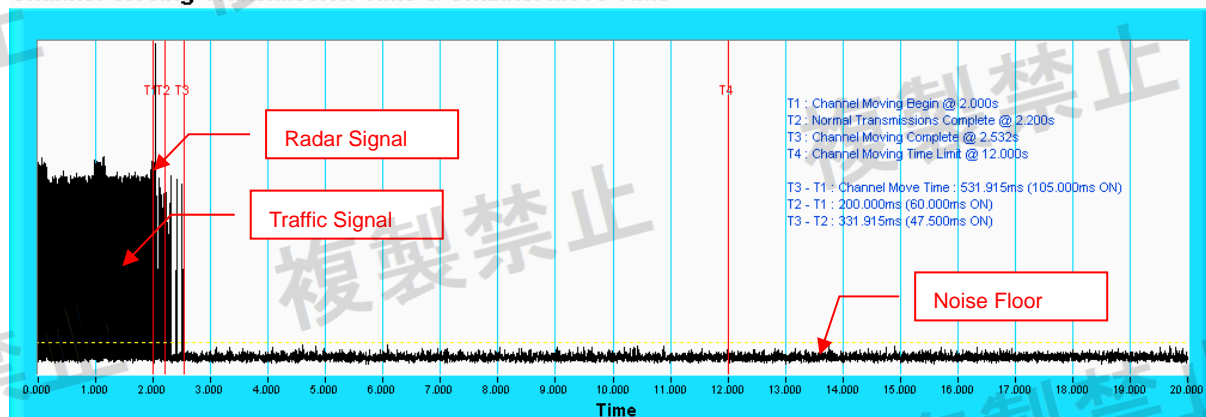
### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

## Frequency hopping radar signal

### Channel Closing Transmission Time & Channel Move Time



Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

**W56 802.11a**

DFS-J2-1 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5520	Yes
2	5520	Yes
3	5680	Yes
4	5680	Yes
5	5700	Yes
6	5680	Yes
7	5680	Yes
8	5580	Yes
9	5660	Yes
10	5560	Yes
11	5600	Yes
12	5580	Yes
13	5600	Yes
14	5520	Yes
15	5620	Yes
16	5560	Yes
17	5600	Yes
18	5620	Yes
19	5540	Yes
20	5580	Yes
Detection Rate		100%
Minimum Percentage of Successful Detection		60%
Result		Pass



**W56 802.11a**

DFS-J2-2 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5580	Yes
2	5680	Yes
3	5700	Yes
4	5640	Yes
5	5700	Yes
6	5700	Yes
7	5500	Yes
8	5680	Yes
9	5600	Yes
10	5600	Yes
11	5660	Yes
12	5520	Yes
13	5600	Yes
14	5640	Yes
15	5620	Yes
16	5580	Yes
17	5540	Yes
18	5500	Yes
19	5640	Yes
20	5680	Yes
Detection Rate		100%
Minimum Percentage of Successful Detection		60%
Result		Pass



**W56 802.11a**

DFS-US-1 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5660	Yes
2	5680	Yes
3	5640	Yes
4	5500	Yes
5	5520	Yes
6	5540	Yes
7	5680	Yes
8	5520	Yes
9	5660	Yes
10	5600	Yes
11	5620	Yes
12	5540	Yes
13	5700	Yes
14	5700	Yes
15	5640	Yes
16	5500	Yes
17	5700	Yes
18	5640	No
19	5500	Yes
20	5640	Yes
Detection Rate		95%
Minimum Percentage of Successful Detection		60%
Result		Pass

**W56 802.11a**

DFS-US-2 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5560	Yes
2	5540	Yes
3	5700	Yes
4	5540	Yes
5	5680	Yes
6	5620	Yes
7	5580	Yes
8	5680	Yes
9	5660	Yes
10	5520	Yes
11	5620	Yes
12	5660	Yes
13	5580	No
14	5640	Yes
15	5660	No
16	5620	No
17	5500	Yes
18	5560	Yes
19	5660	Yes
20	5660	No
Detection Rate		80%
Minimum Percentage of Successful Detection		60%
Result		Pass

**W56 802.11a**

DFS-US-3 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5560	Yes
2	5680	Yes
3	5620	Yes
4	5660	Yes
5	5660	No
6	5560	Yes
7	5540	Yes
8	5620	Yes
9	5660	Yes
10	5500	Yes
11	5580	Yes
12	5620	No
13	5540	Yes
14	5640	No
15	5620	Yes
16	5520	Yes
17	5680	Yes
18	5680	No
19	5700	Yes
20	5600	Yes
Detection Rate		80%
Minimum Percentage of Successful Detection		60%
Result		Pass

**W56 802.11a**

DFS-US-4 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5680	Yes
2	5560	No
3	5700	Yes
4	5660	Yes
5	5500	Yes
6	5540	Yes
7	5520	Yes
8	5580	No
9	5680	Yes
10	5700	No
11	5560	Yes
12	5660	Yes
13	5660	No
14	5520	Yes
15	5660	Yes
16	5680	Yes
17	5520	Yes
18	5580	No
19	5560	No
20	5680	Yes
Detection Rate		70%
Minimum Percentage of Successful Detection		60%
Result		Pass

**W56 802.11a**

DFS-US-5 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5660	Yes
2	5520	Yes
3	5640	Yes
4	5600	Yes
5	5560	Yes
6	5640	Yes
7	5520	Yes
8	5660	Yes
9	5640	Yes
10	5580	Yes
11	5580	Yes
12	5680	Yes
13	5560	Yes
14	5520	Yes
15	5580	Yes
16	5680	Yes
17	5500	Yes
18	5620	Yes
19	5600	Yes
20	5700	Yes
Detection Rate		100%
Minimum Percentage of Successful Detection		80%
Result		Pass

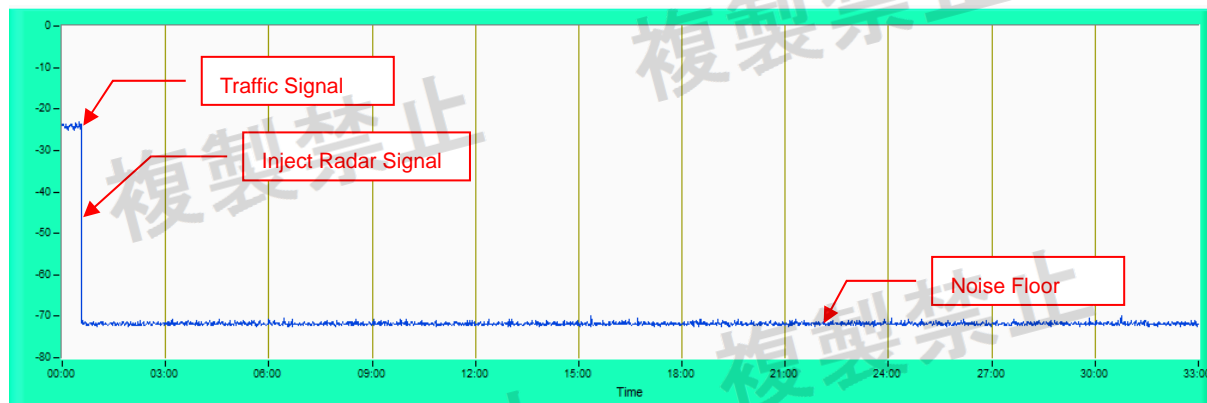


**W56 802.11a**

DFS-US-6 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5500	Yes
2	5520	Yes
3	5620	Yes
4	5700	Yes
5	5580	No
6	5580	Yes
7	5560	Yes
8	5620	Yes
9	5560	Yes
10	5580	No
11	5620	Yes
12	5700	Yes
13	5680	Yes
14	5680	Yes
15	5640	Yes
16	5560	Yes
17	5540	Yes
18	5520	Yes
19	5700	Yes
20	5580	Yes
Detection Rate		90%
Minimum Percentage of Successful Detection		70%
Result		Pass

### **NON-OCCUPANCY PERIOD**

During the 30 minutes observation time, UUT did not make any transmissions on a channel after a radar signal was detected on that channel by either the Channel Availability Check or the In-Service Monitoring.



### **UNIFORM SPREADING**

The intention of the uniform spreading is to provide, on aggregate, a uniform loading of the spectrum. The UUT using the bands 5150 to 5725MHz shall select an operating channel out of the 19 channels, so that the probability of selecting a given channel shall be the same for all channels.

The UUT will select channel by random mode and remember this channel when detect radar signal, so that will select unused channel by random mode.



## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

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