

DFS Test Report

Report No.: RJ190716E02A-2

Test Model: RBR850

Series Model: RBS850

Received Date: Aug. 21, 2019

Test Date: Sep. 27 to Oct. 01, 2019

Issued Date: Oct. 23, 2019

Applicant: NETGEAR, Inc.

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

Issue No.	Description	Date Issued
RJ190716E02A-2	Original release.	Oct. 23, 2019

1 Certificate of Conformity

Product: Orbi Router, Orbi Satellite

Brand: NETGEAR

Test Model: RBR850

Series Model: RBS850

Sample Status: ENGINEERING SAMPLE

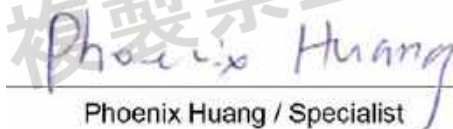
Applicant: NETGEAR, Inc.

Test Date: Sep. 27 to Oct. 01, 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 EMC characteristics under the conditions specified in this report.

Prepared by :


Phoenix Huang / Specialist

Date:

Oct. 23, 2019

Approved by :


Clark Lin / Technical Manager

Date:

Oct. 23, 2019

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

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 $P_o < 200\text{mW}$; $P_o \geq -62\text{dBm}(\text{avg.})$

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

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

2.2 Test instruments

Description & Manufacture	Model No.	Serial No	Calibrated Date	Calibrated Until	Calibration Authority
Spectrum Analyzer R&S	ESR	102026	Apr. 24, 2019	Apr. 23, 2020	ETC
Vector Signal Generator Agilent	E4438C	MY45094468	Nov. 19, 2018	Nov. 18, 2019	ETC
DFS Control Box	BV-DFS-CB	002	Dec. 03, 2018	Dec. 02, 2019	BV

Note:

- The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2.3 EUT Information

Operating Frequency Bands and Mode of EUT

Operational Mode	Operating Frequency Range	
	5250~5350MHz	5470~5725MHz
Master	✓	✓

EUT Software and Firmware Version

No.	Product	Model No.	Software/Firmware Version
1	Orbi Router	RBR850	V3.1.4.7/1.0.36

Description of Available Antennas to the EUT

Antenna No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	*Cable Length (mm)
2G-0	2	2.4~2.4835	Dipole	i-pex(MHF)	59
5GL-2	3	5.15~5.35	Dipole	i-pex(MHF)	52
2G-1	2	2.4~2.4835	Dipole	i-pex(MHF)	150
5GL-3	3	5.15~5.35	Dipole	i-pex(MHF)	170
2G-2	2	2.4~2.4835	Dipole	i-pex(MHF)	78
5GL-1	3	5.15~5.35	Dipole	i-pex(MHF)	60
2G-3	2	2.4~2.4835	Dipole	i-pex(MHF)	28
5GL-0	3	5.15~5.35	Dipole	i-pex(MHF)	40
5GH-0	3	5.470~5.85	Dipole	i-pex(MHF)	
5GH-1	3	5.470~5.85	Dipole	i-pex(MHF)	
5GH-2	3	5.470~5.85	Dipole	i-pex(MHF)	
5GH-3	3	5.470~5.85	Dipole	i-pex(MHF)	

2.4 Description of support units

Support Unit information

No.	Product	Brand	Model No.
1	Orbi Satellite	NETGEAR	RBS850

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

Software/Firmware information

No.	Product	Model No.	Software/Firmware Version
1	Orbi Satellite	RBS850	V3.1.4.7/1.0.36

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 UUT (master) with -59 dBm power level for W53 band and -61dBm 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 channel loading as below:

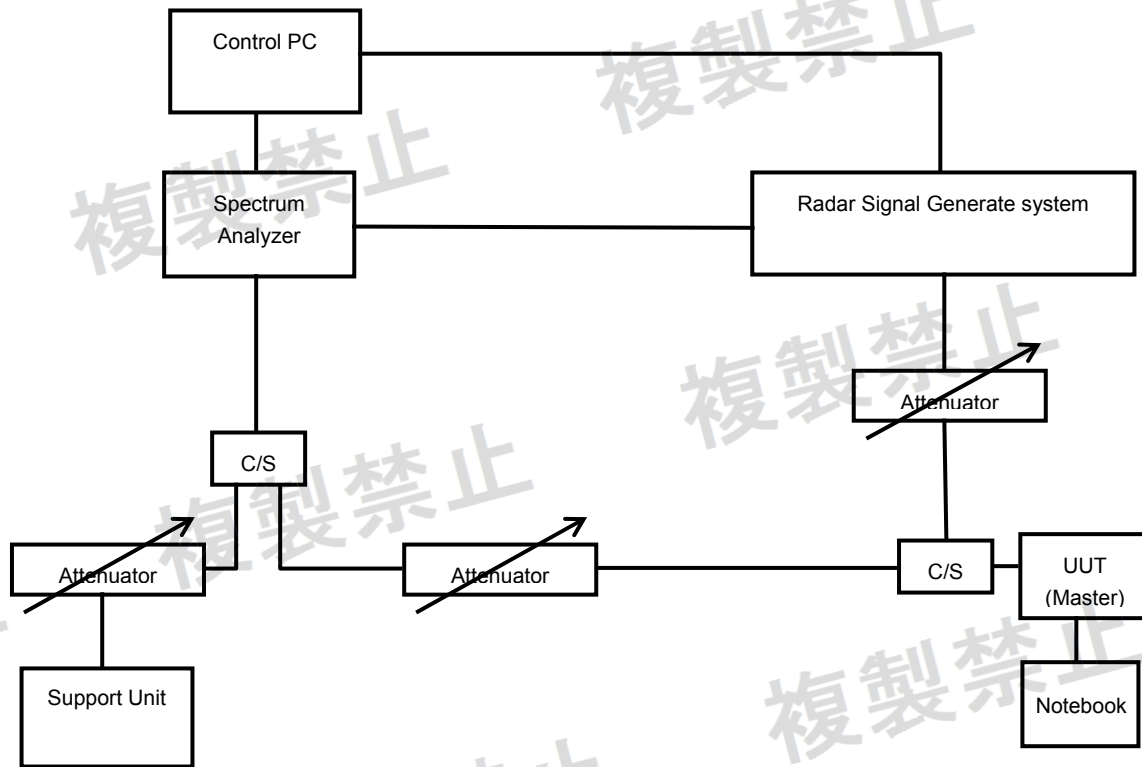
The channel loading in W53 band shall not be less 50%

The channel loading in W56 band shall not be less 17%.

2.6 Deviation form Test Standard

No deviation.

2.7 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 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).

Test Condition:

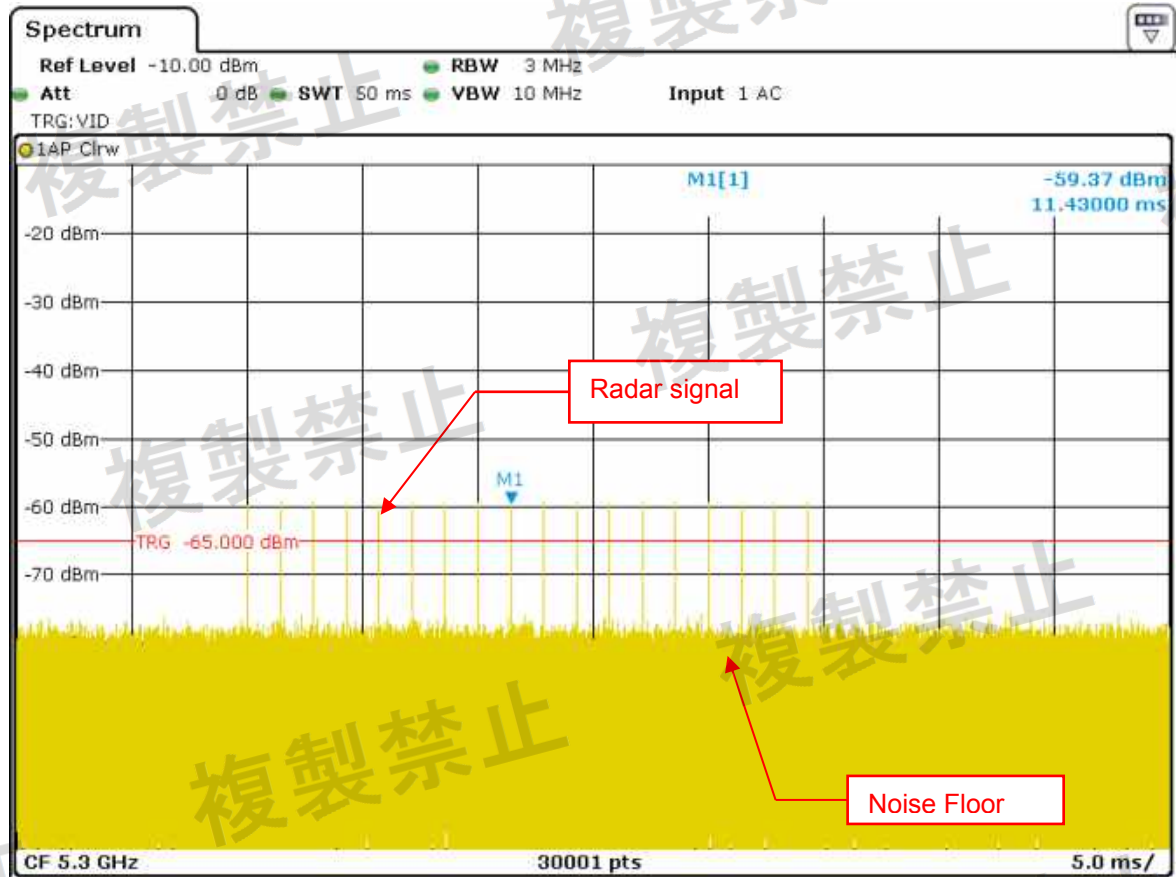
Applicable To	Environmental conditions	Voltage
Interference Detection Threshold	21deg. C, 63%RH	12Vdc
Channel Availability Check Time	20deg. C, 63%RH	12Vdc
Channel Closing Transmission Time	21deg. C, 61%RH	12Vdc
Channel Move Time	21deg. C, 63%RH	12Vdc
Non-Occupancy Period	20deg. C, 62%RH	12Vdc

2.9 Test Results

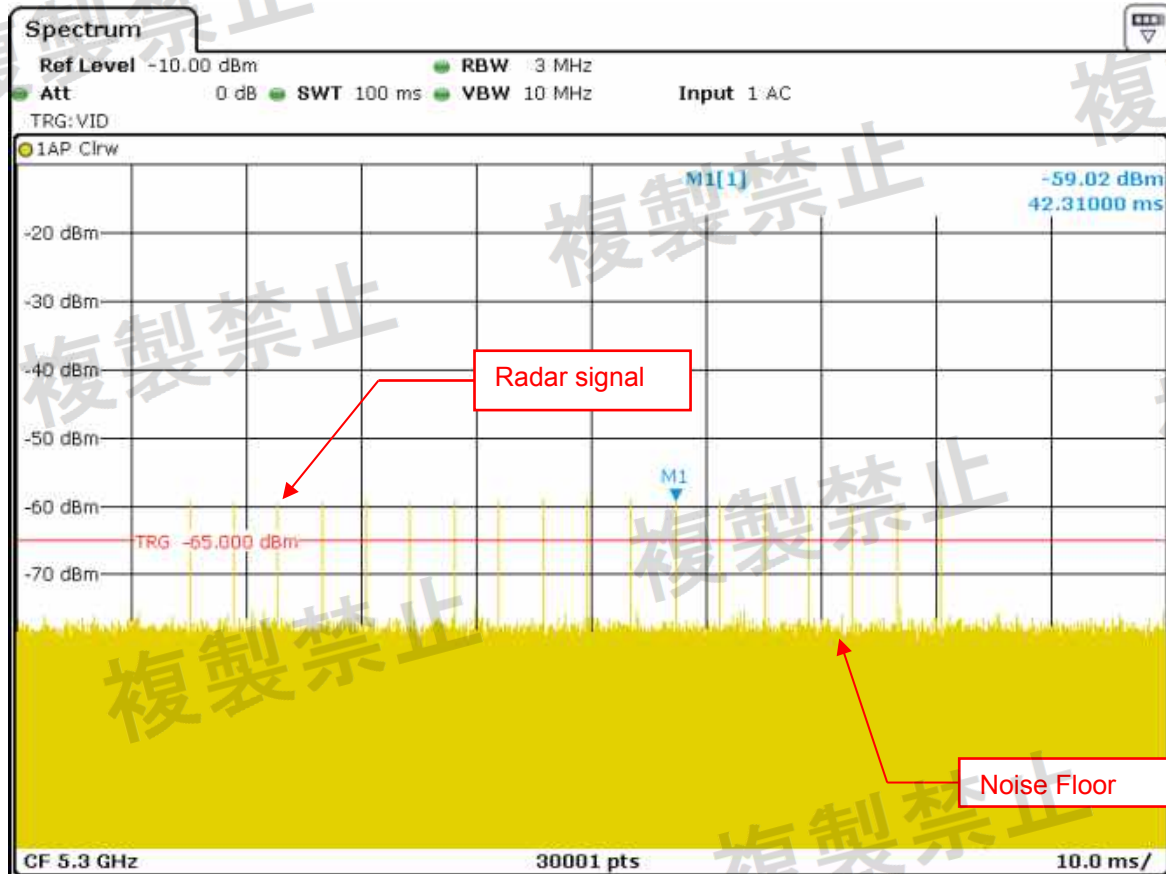
Interference Threshold Values Injected into UUT

W53

For an interference threshold level of -62 dBm and the UUT antenna gain is 3 dBi. Then the radar Burst signal level to the AP connector is lower than -59 dBm.



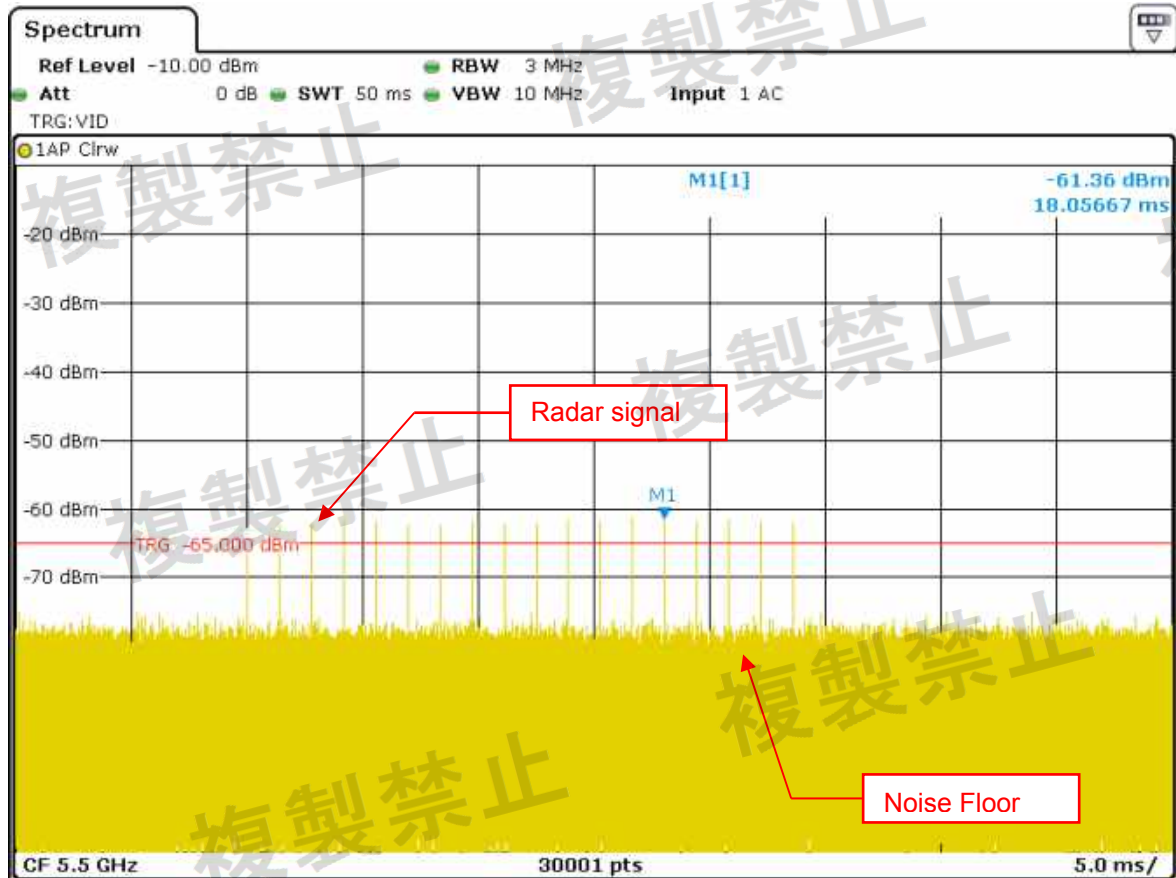
DFS-J1-1



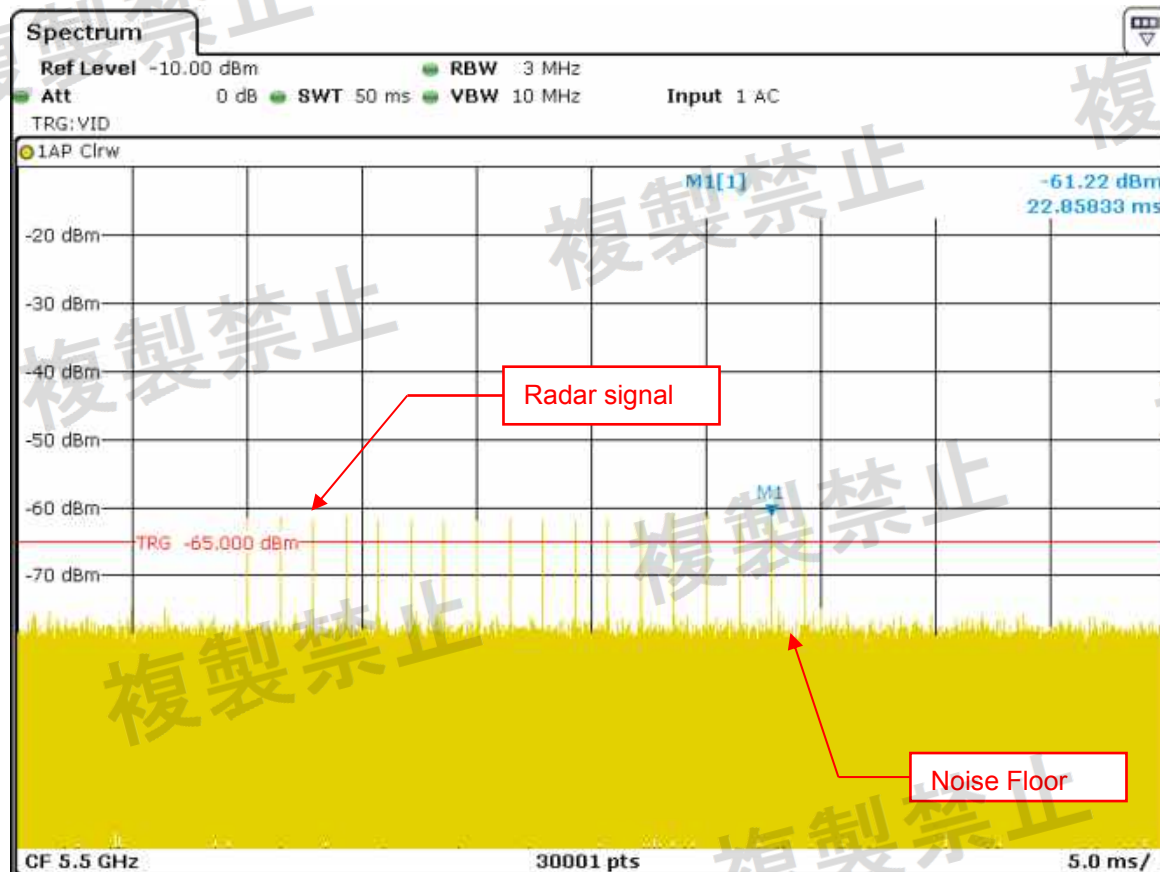
DFS-J1-2

W56

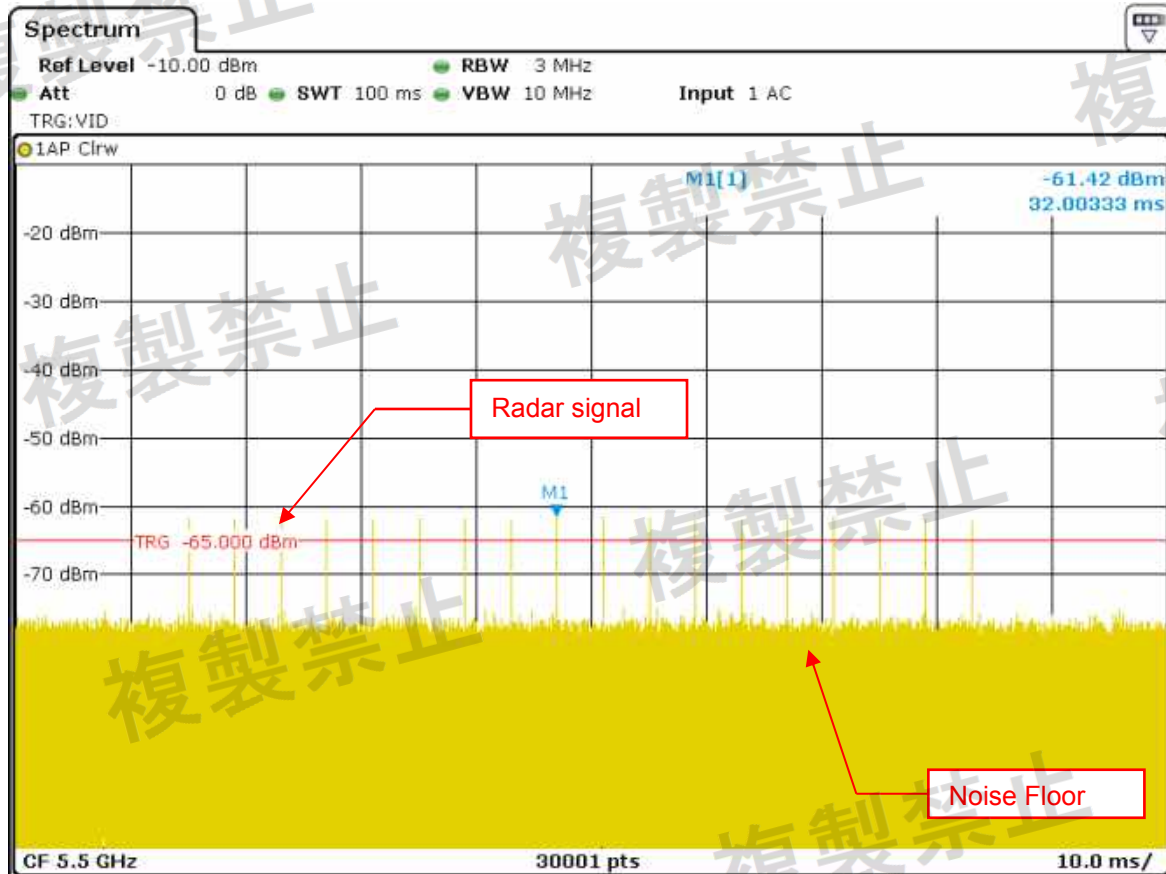
For an interference threshold level of -64dBm and the UUT antenna gain is 3dBi . Then the radar Burst signal level to the AP connector is lower than -61dBm .



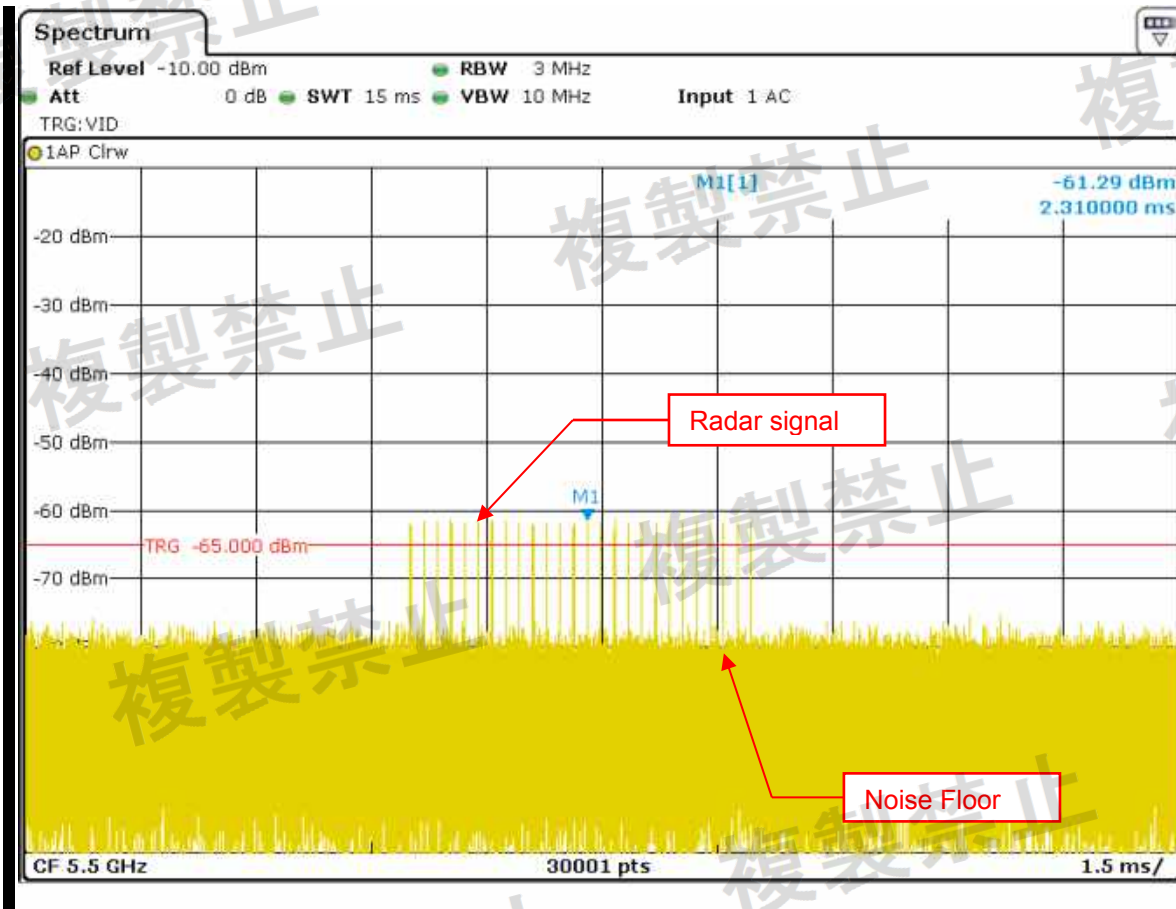
DFS-J2-1



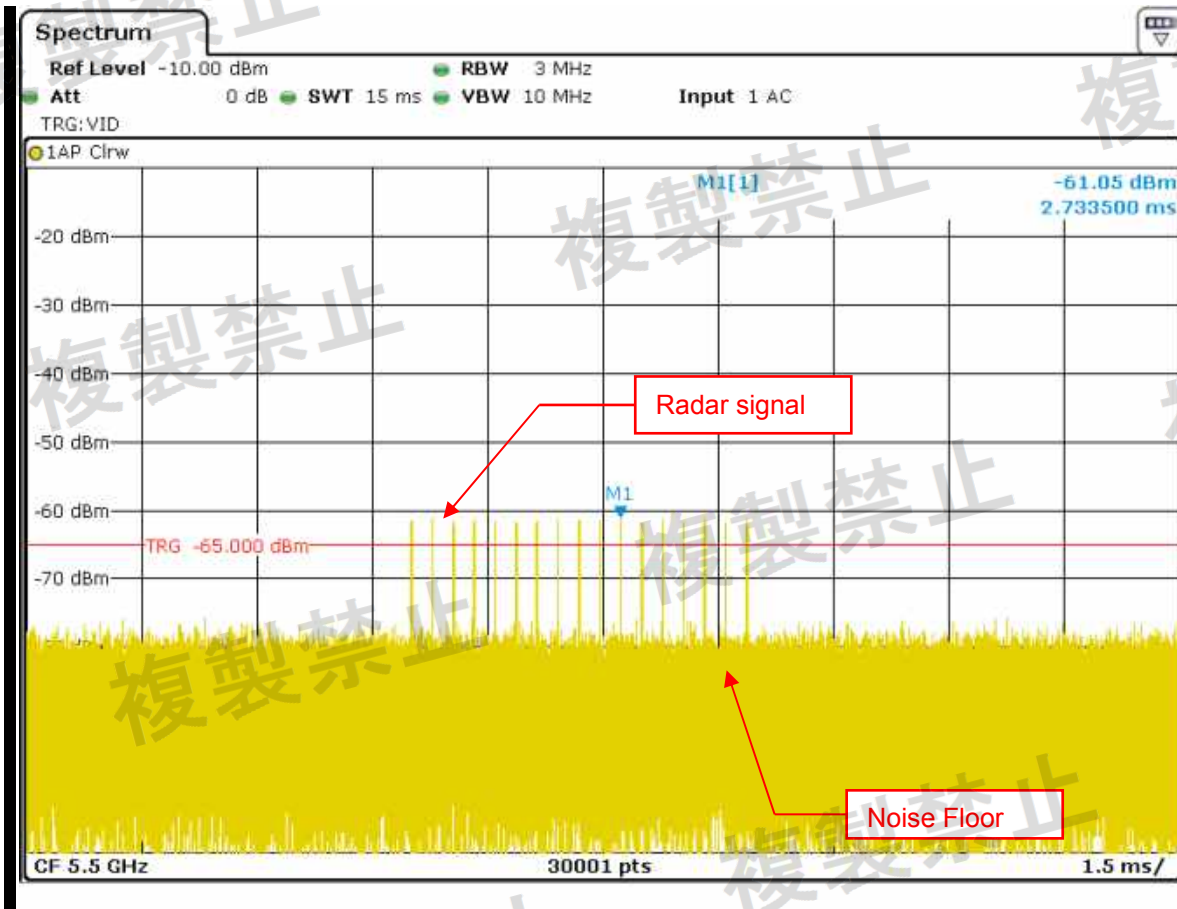
DFS-J2-2



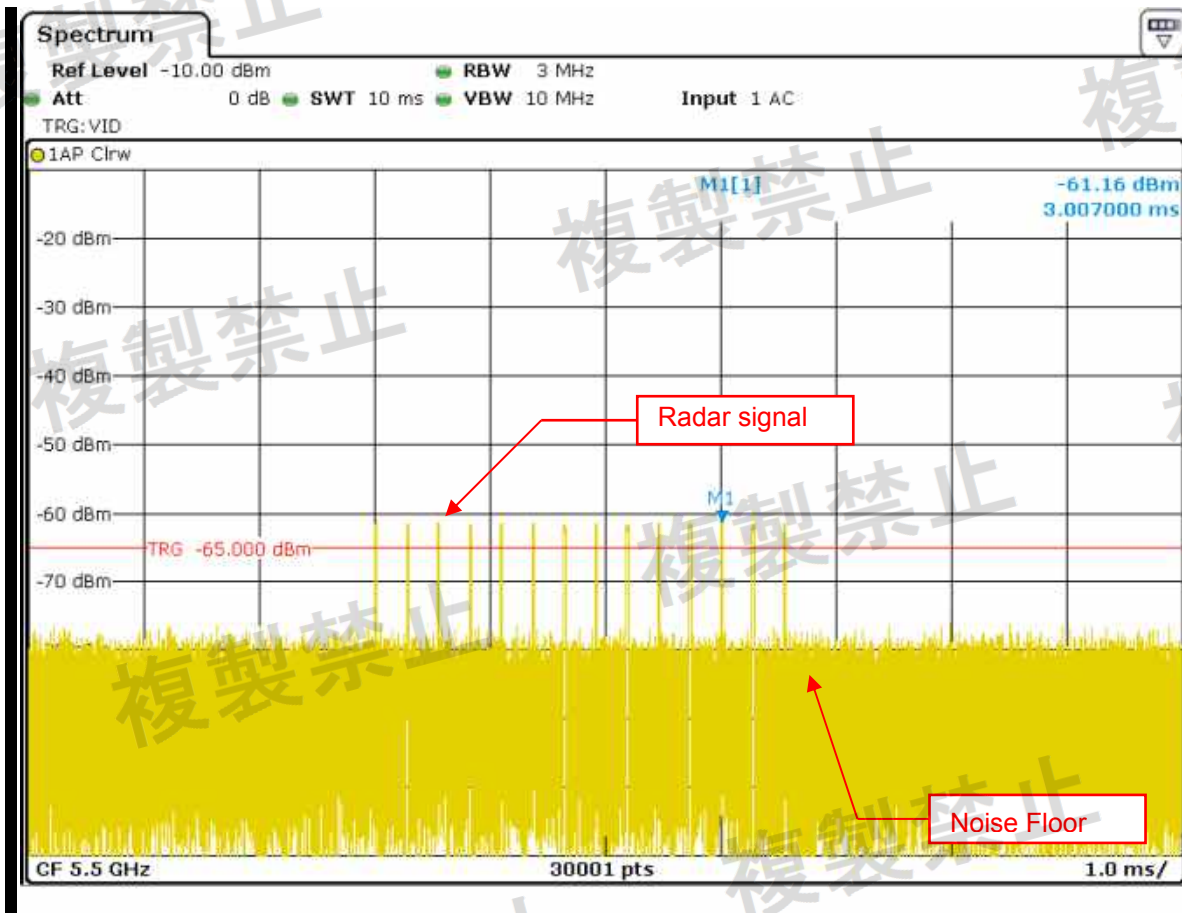
DFS-US-1



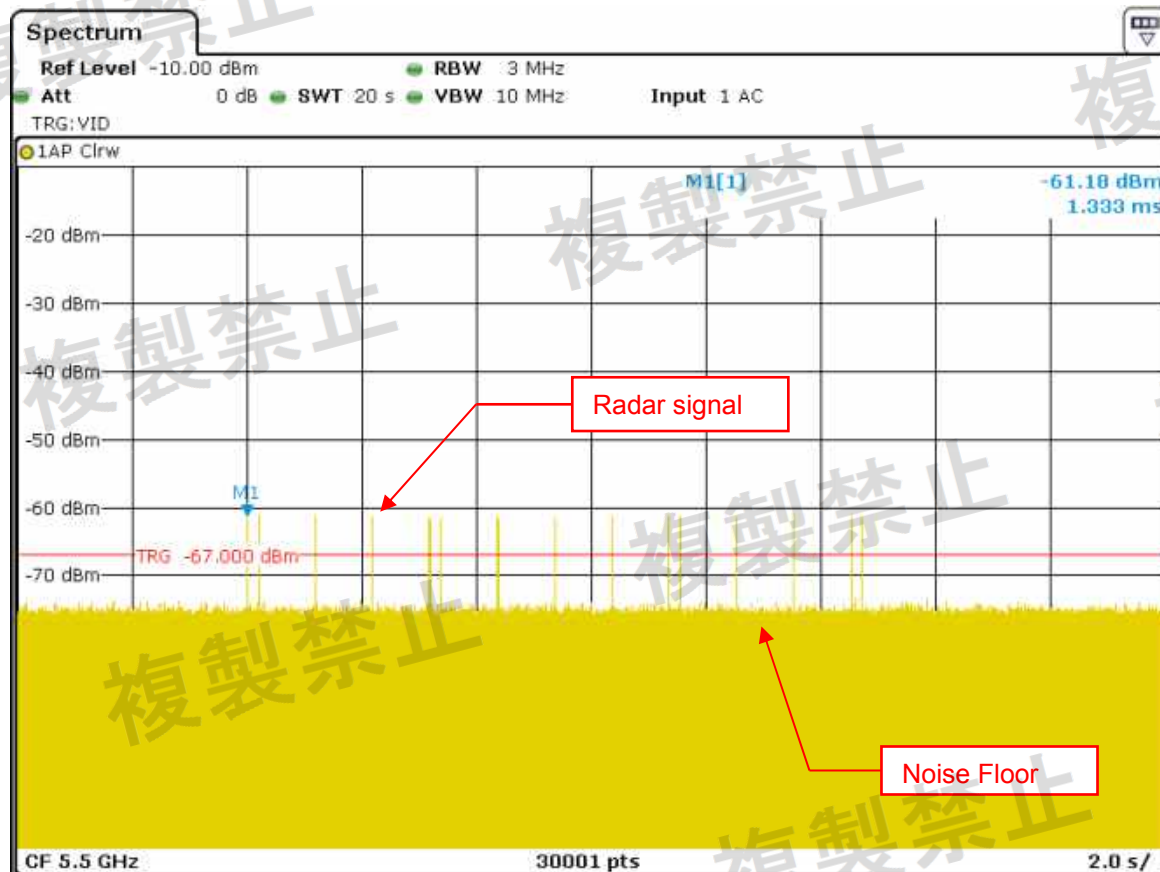
DFS-US-2



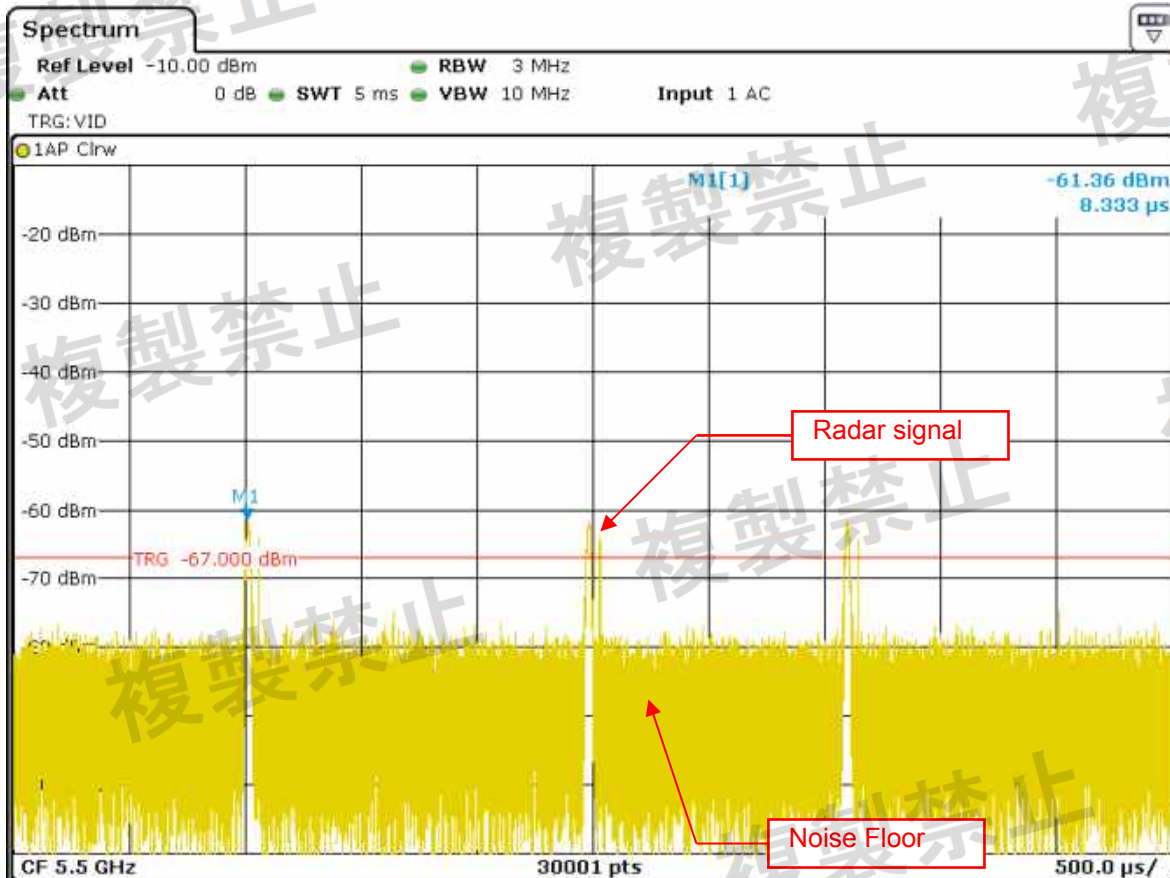
DFS-US-3



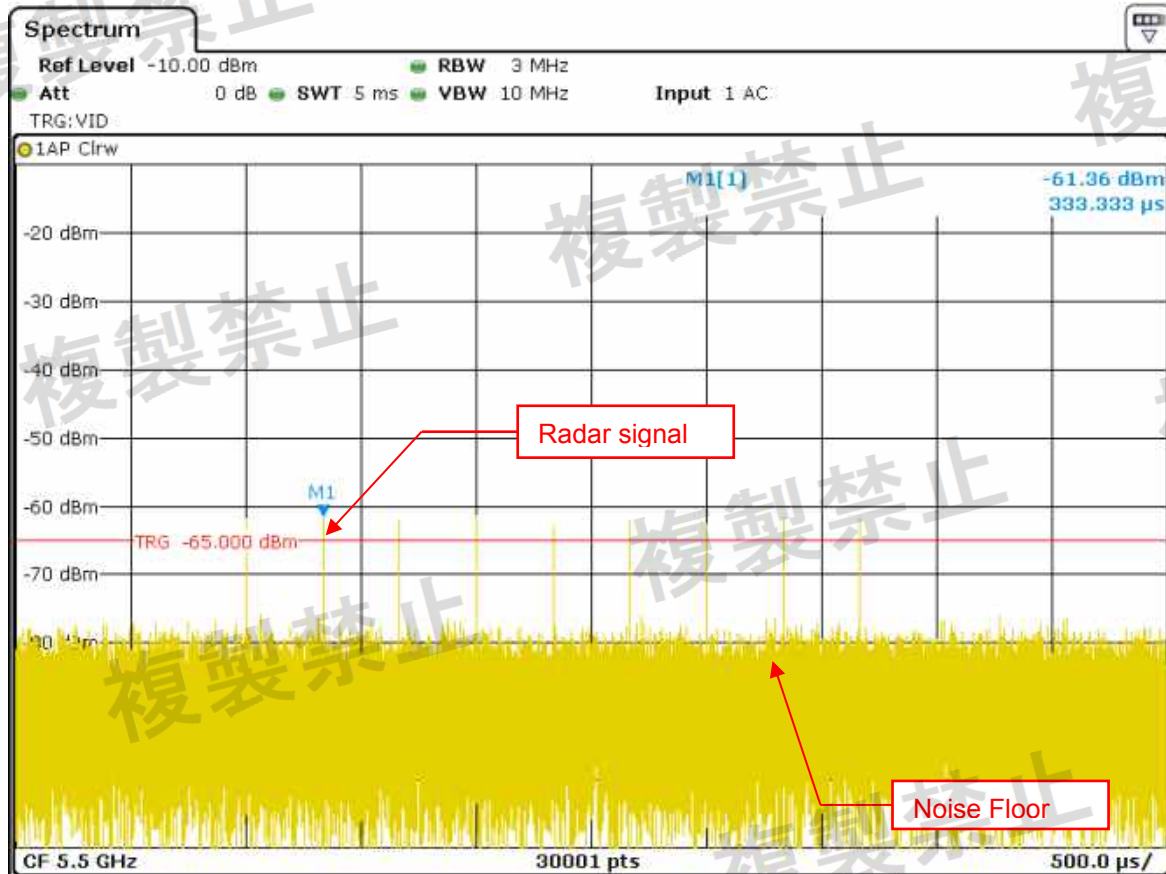
DFS-US-4



Long Pulse Radar



Long Pulse Radar Signal



Frequency Hopping Radar Signal

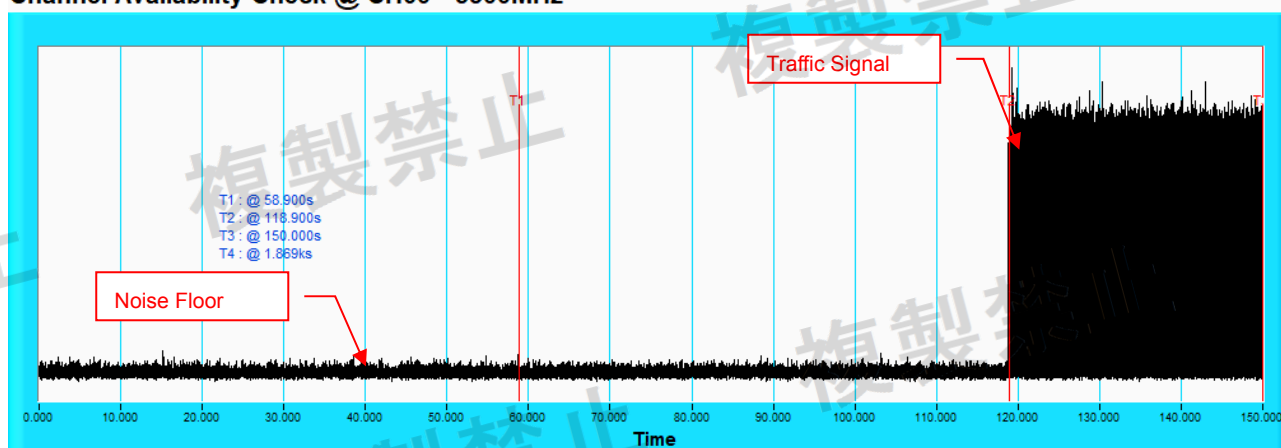
Channel Availability Check Time

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

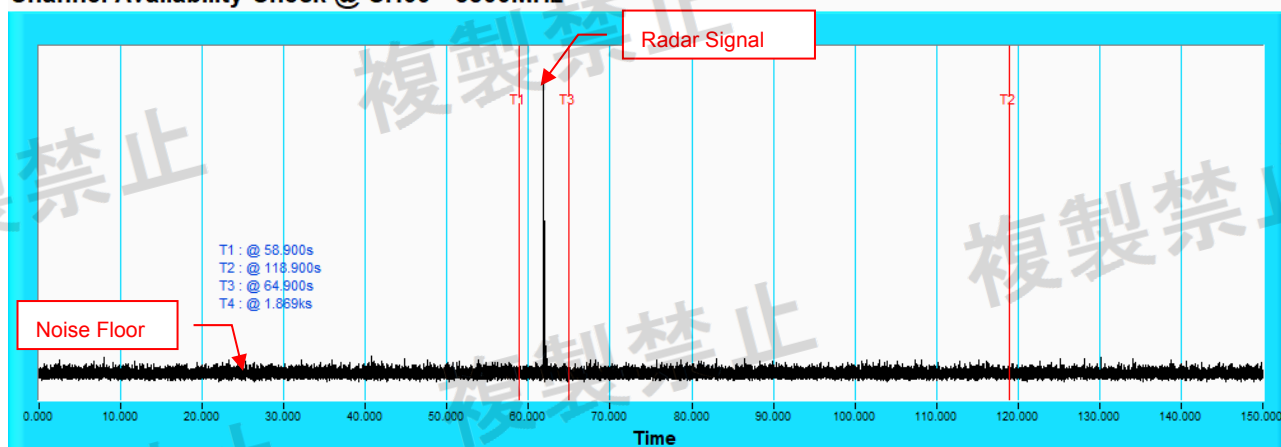
Channel Availability Check @ CH60 - 5300MHz



Note: T1 denotes the end of power-up time period and is 58.9th second. T2 denotes the end of Channel Availability Check time and is 118.9th second. Channel Availability Check time is equal to (T2 – T1) 60 seconds.

Radar Burst at the Beginning of the Channel Availability Check Time

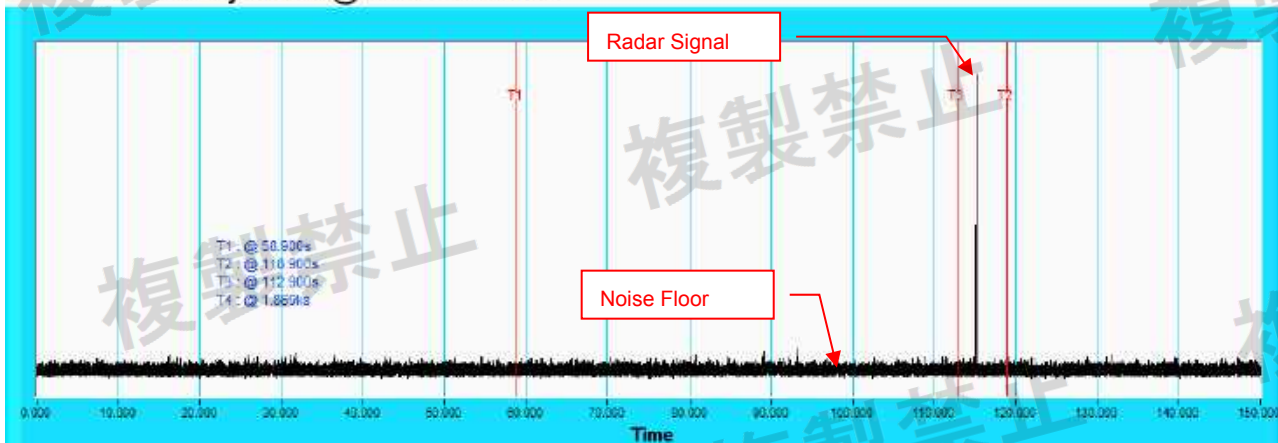
Channel Availability Check @ CH60 - 5300MHz



Note: T1 denotes the end of power up time period is 58.9th second. T3 denotes 64.9th second and the radar burst was commenced within a 6 second window starting from the end of power-up sequence. T2 denotes the 118.9th second.

Radar Burst at the End of the Channel Availability Check Time

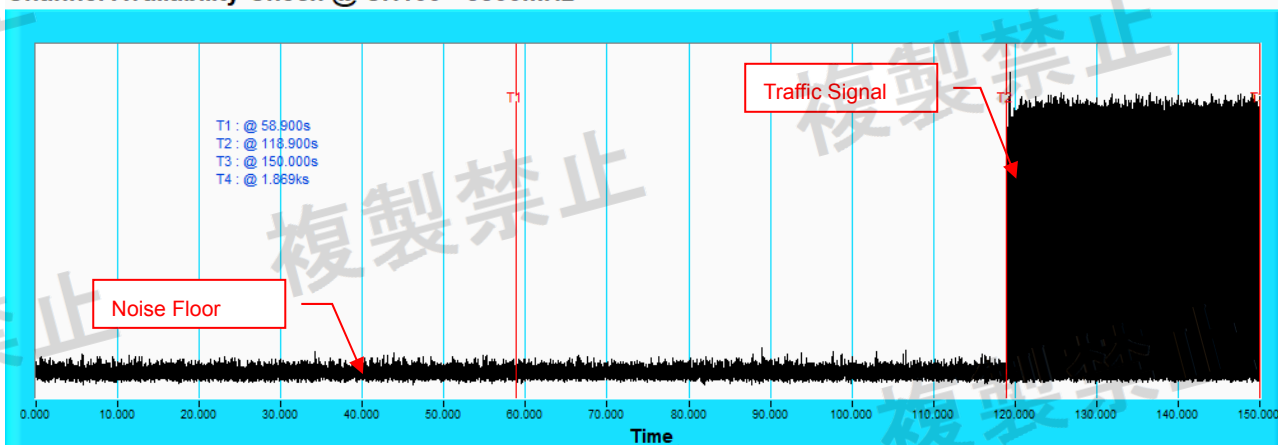
Channel Availability Check @ CH60 - 5300MHz



Note: T1 denotes the end of power up time period and is 58.9th second. T3 denotes 112.9th second and T2 denotes the 118.9th second. The radar burst was commenced within 54th second to 60th second window starting from the end of power-up sequence.

Initial Channel Availability Check Time

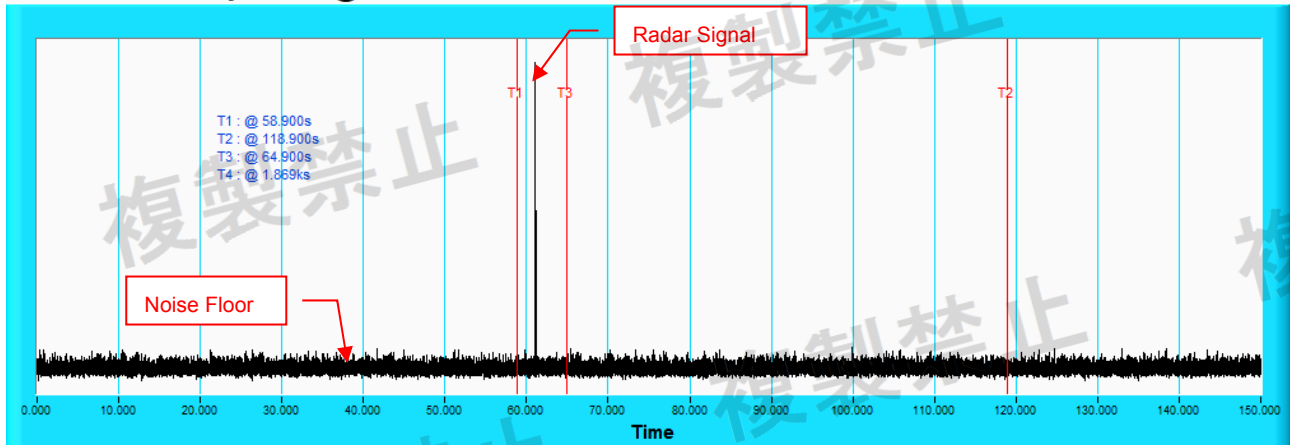
Channel Availability Check @ CH100 - 5500MHz



Note: T1 denotes the end of power-up time period and is 58.9th second. T2 denotes the end of Channel Availability Check time and is 118.9th second. Channel Availability Check time is equal to (T2 – T1) 60 seconds.

Radar Burst at the Beginning of the Channel Availability Check Time

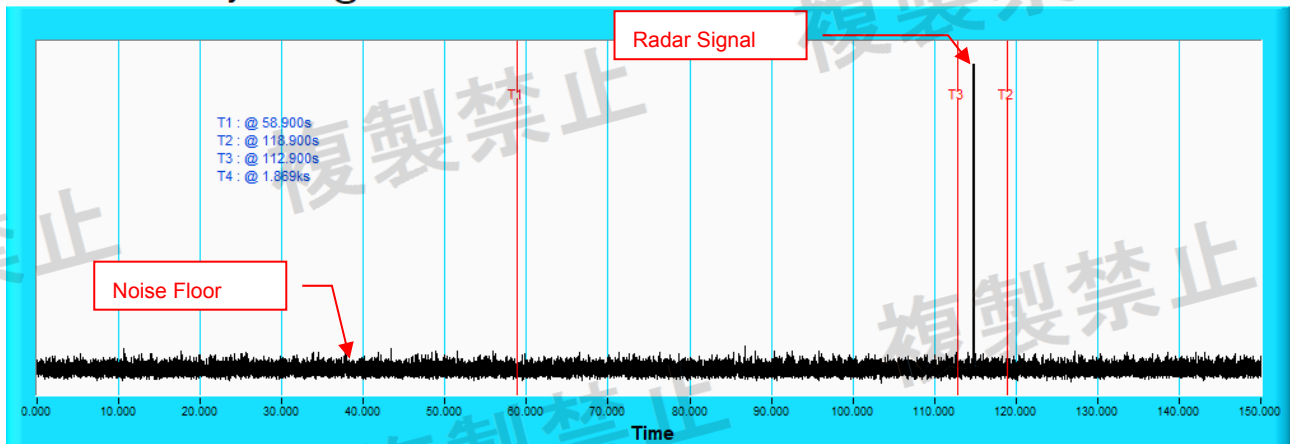
Channel Availability Check @ CH100 - 5500MHz



Note: T1 denotes the end of power up time period is 58.9th second. T3 denotes 64.9th second and the radar burst was commenced within a 6 second window starting from the end of power-up sequence. T2 denotes the 118.9th second.

Radar Burst at the End of the Channel Availability Check Time

Channel Availability Check @ CH100 - 5500MHz



Note: T1 denotes the end of power up time period and is 58.9th second. T3 denotes 112.9th second and T2 denotes the 118.9th second. The radar burst was commenced within 54th second to 60th second window starting from the end of power-up sequence.

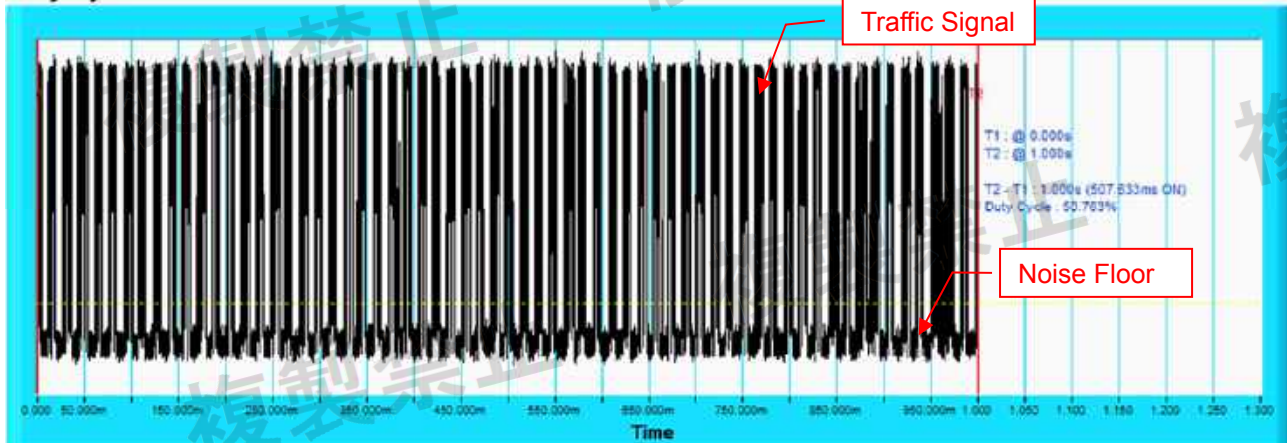
Channel Closing Transmission Time and Channel Move Time

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 Signal

802.11a

Duty Cycle



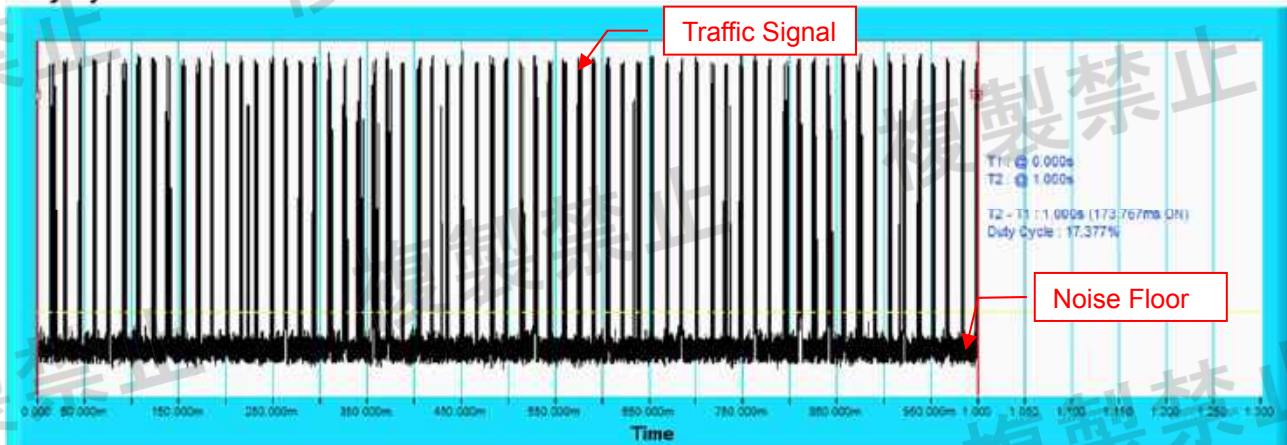
Note:

1. Traffic signal with 26Mbps average channel loading transmitted from master to slave device.
2. T1 denotes the start of duty cycle period and is 0 second. T2 denotes the end of duty cycle period and is 1st second. T2 - T1 = 1 seconds. Duty Cycle = 50.763%

W56 WLAN Traffic Signal

802.11a

Duty Cycle



Note: T1 denotes the start of duty cycle period and is 0 second. T2 denotes the end of duty cycle period and is 1st second. T2 - T1 = 1 seconds. Duty Cycle = 17.377%

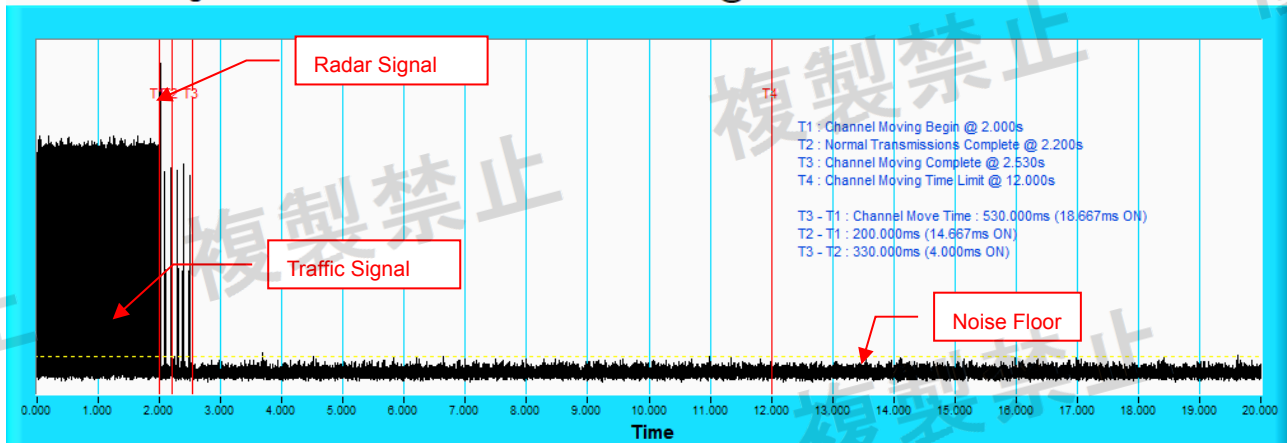
W53 802.11a

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%	85
DFS-J1-2	260	2.5	18	15	60%	65

W53

DFS-J1-1

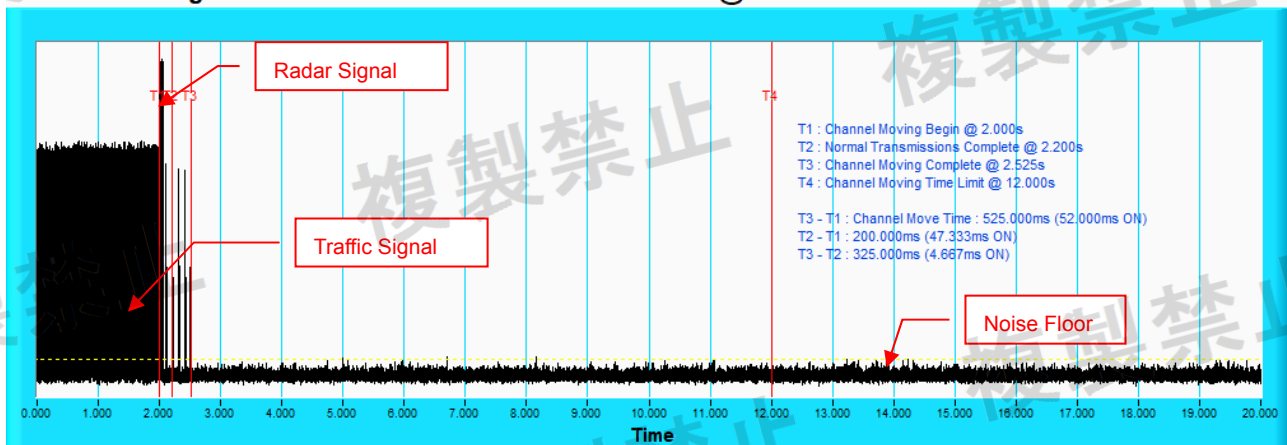
Channel Closing Transmission Time & Channel Move Time @ CH60 - 5300MHz



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 @ CH60 - 5300MHz



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	5280	Yes
2	5300	Yes
3	5280	Yes
4	5280	Yes
5	5300	Yes
6	5280	Yes
7	5300	Yes
8	5280	Yes
9	5280	No
10	5320	Yes
11	5280	Yes
12	5300	Yes
13	5280	Yes
14	5280	No
15	5320	Yes
16	5280	Yes
17	5260	Yes
18	5300	No
19	5320	Yes
20	5280	Yes
Detection Rate		85 %
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	5300	Yes
2	5320	No
3	5300	No
4	5280	Yes
5	5300	Yes
6	5300	Yes
7	5300	Yes
8	5280	Yes
9	5300	Yes
10	5280	Yes
11	5280	Yes
12	5300	No
13	5280	No
14	5300	Yes
15	5300	No
16	5280	No
17	5280	Yes
18	5320	Yes
19	5320	Yes
20	5260	No
Detection Rate		65 %
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	90
DFS-J2-2	250	2	18	60	85
DFS-US-1	700	1	18	60	90
DFS-US-2	4347 – 6667	1-5	23-29	60	90
DFS-US-3	2000 – 5000	6-10	16-18	60	85
DFS-US-4	2000 - 5000	11-20	12-16	60	80
Aggregate (Radar Types 1-6)				80	86.7

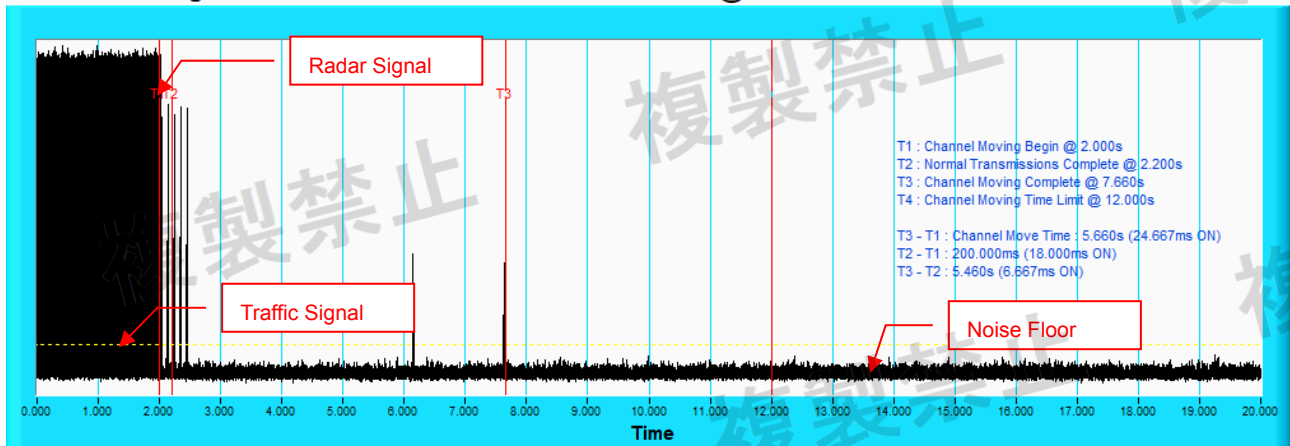
Radar Type	Pulse Repetition Frequency (pps)	Pulse Width (μsec)	Number of Pulses per Burst	Minimum Percentage of Successful Detection (%)	Percentage of Successful Detection (%)
DFS-US-5	500-1000	50 - 100	1-3	80	90

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	95

W56

DFS-J2-1

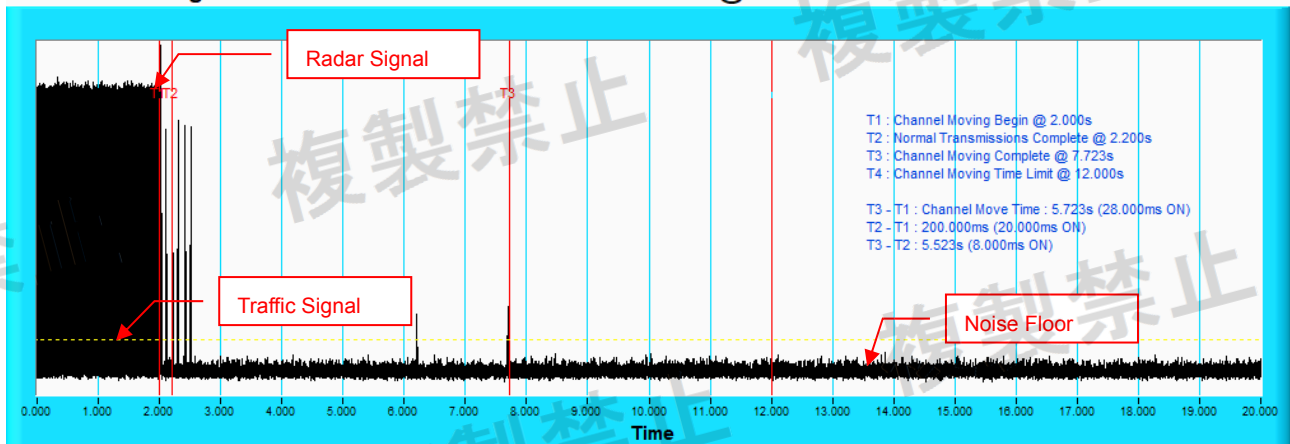
Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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

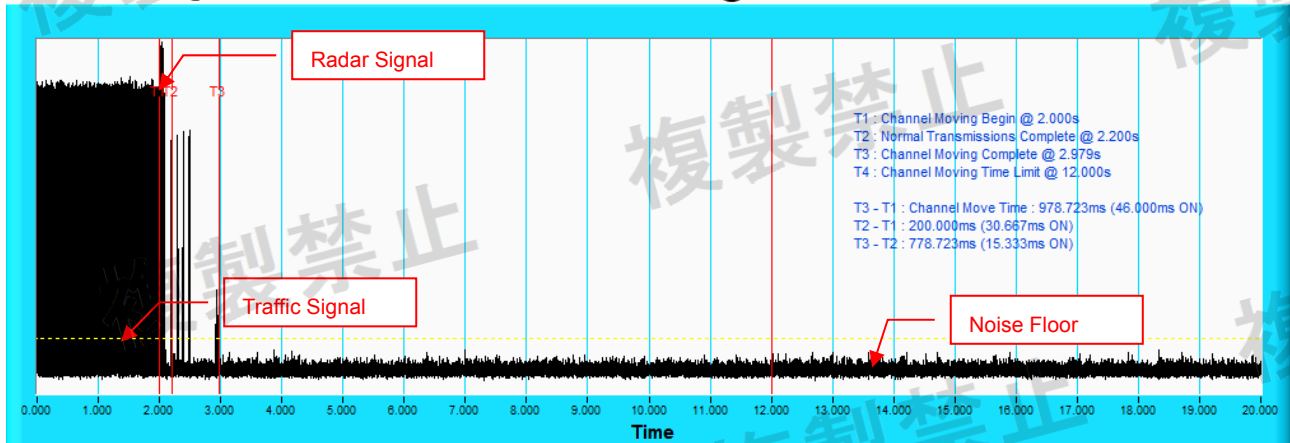
Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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

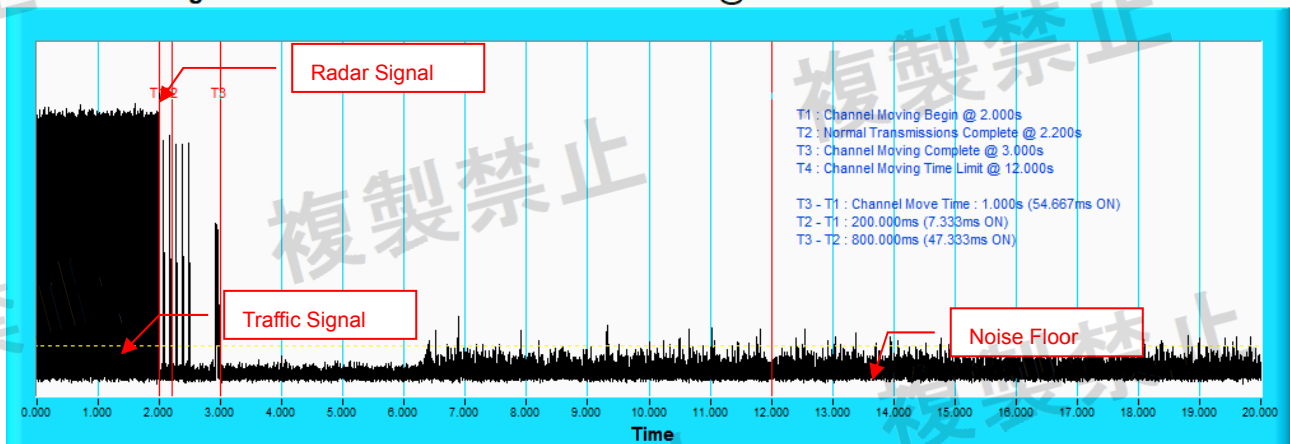
Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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.

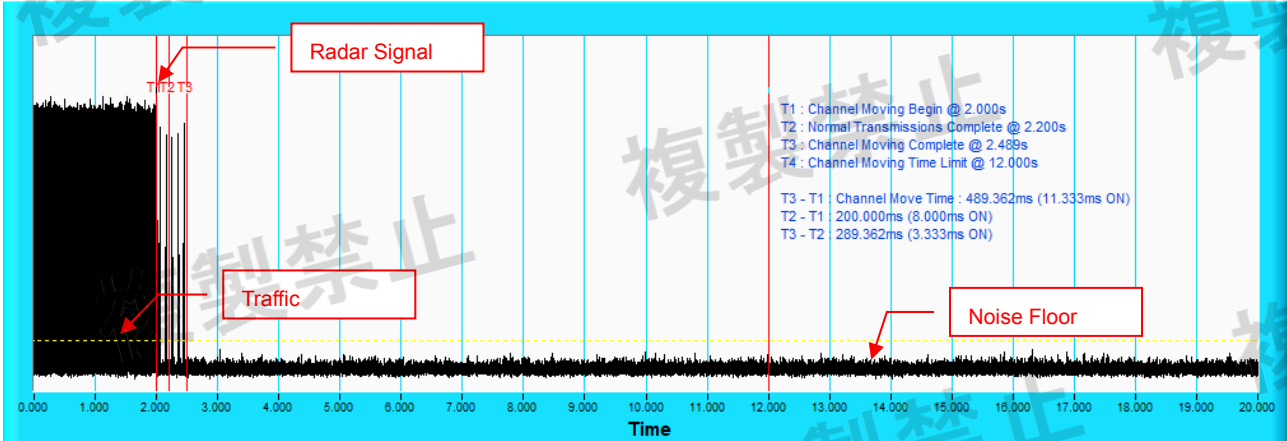
DFS-US-2

Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



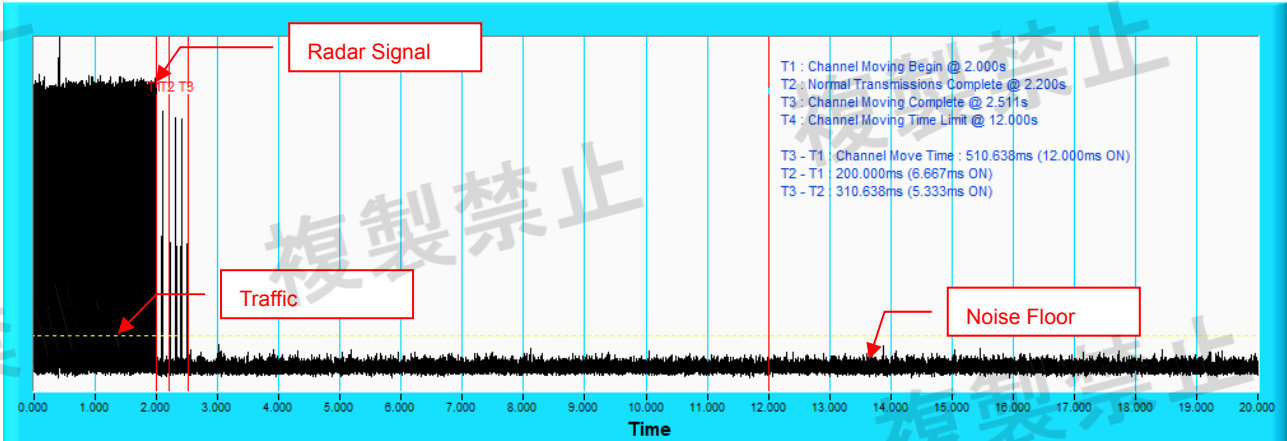
Note: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

DFS-US-3 Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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.

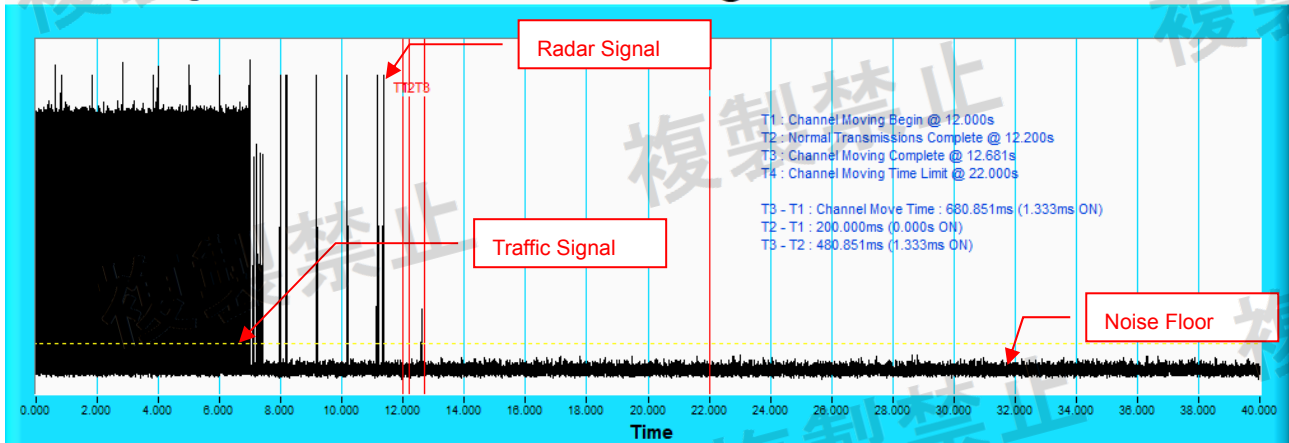
DFS-US-4 Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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

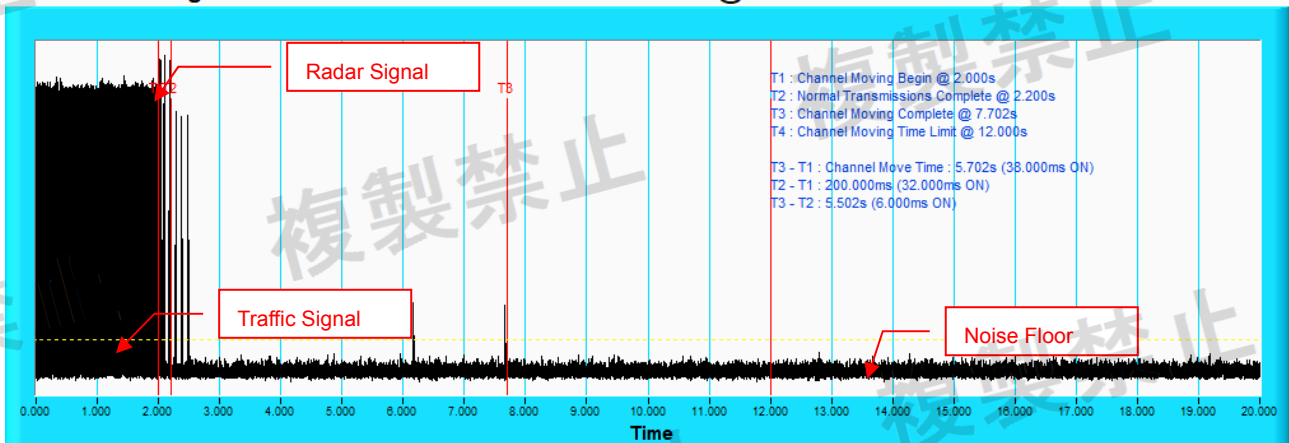
Channel Closing Transmission Time & Channel Move Time @ CH100 - 5500MHz



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 @ CH100 - 5500MHz



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	5660	Yes
2	5520	No
3	5620	Yes
4	5700	Yes
5	5540	Yes
6	5520	Yes
7	5600	Yes
8	5520	Yes
9	5600	Yes
10	5700	Yes
11	5600	Yes
12	5680	Yes
13	5680	Yes
14	5680	Yes
15	5500	Yes
16	5500	No
17	5700	Yes
18	5560	Yes
19	5540	Yes
20	5600	Yes
Detection Rate		90 %
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	5660	Yes
2	5500	Yes
3	5640	Yes
4	5580	Yes
5	5580	Yes
6	5700	Yes
7	5560	Yes
8	5700	Yes
9	5600	Yes
10	5680	No
11	5580	Yes
12	5700	Yes
13	5640	No
14	5660	Yes
15	5540	Yes
16	5540	No
17	5660	Yes
18	5560	Yes
19	5660	Yes
20	5560	Yes
Detection Rate		85 %
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	5600	Yes
2	5500	Yes
3	5560	Yes
4	5600	Yes
5	5620	Yes
6	5680	Yes
7	5540	Yes
8	5560	Yes
9	5500	Yes
10	5520	No
11	5660	Yes
12	5560	Yes
13	5580	Yes
14	5560	Yes
15	5700	Yes
16	5640	Yes
17	5620	Yes
18	5580	Yes
19	5700	Yes
20	5500	No
Detection Rate		90 %
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	5700	Yes
3	5700	Yes
4	5700	Yes
5	5640	Yes
6	5500	Yes
7	5520	Yes
8	5700	No
9	5540	Yes
10	5680	Yes
11	5660	Yes
12	5520	Yes
13	5640	No
14	5620	Yes
15	5540	Yes
16	5660	Yes
17	5520	Yes
18	5640	Yes
19	5680	Yes
20	5640	Yes
Detection Rate		90 %
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	5580	Yes
2	5520	Yes
3	5560	Yes
4	5500	Yes
5	5680	Yes
6	5500	Yes
7	5560	Yes
8	5600	Yes
9	5700	Yes
10	5520	Yes
11	5700	Yes
12	5540	No
13	5640	No
14	5520	Yes
15	5620	No
16	5580	Yes
17	5620	Yes
18	5580	Yes
19	5700	Yes
20	5640	Yes
Detection Rate		85 %
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	5600	Yes
2	5540	No
3	5600	No
4	5600	Yes
5	5640	Yes
6	5560	Yes
7	5660	Yes
8	5560	Yes
9	5560	Yes
10	5560	Yes
11	5700	No
12	5580	Yes
13	5540	Yes
14	5700	Yes
15	5640	Yes
16	5500	Yes
17	5680	Yes
18	5660	Yes
19	5700	Yes
20	5580	No
Detection Rate		80 %
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	5620	Yes
2	5640	Yes
3	5680	Yes
4	5640	Yes
5	5560	Yes
6	5580	Yes
7	5620	Yes
8	5700	Yes
9	5700	No
10	5580	Yes
11	5560	Yes
12	5680	No
13	5600	Yes
14	5640	Yes
15	5500	Yes
16	5520	Yes
17	5560	Yes
18	5700	Yes
19	5620	Yes
20	5680	Yes
Detection Rate		90 %
Minimum Percentage of Successful Detection		80 %
Result		Pass

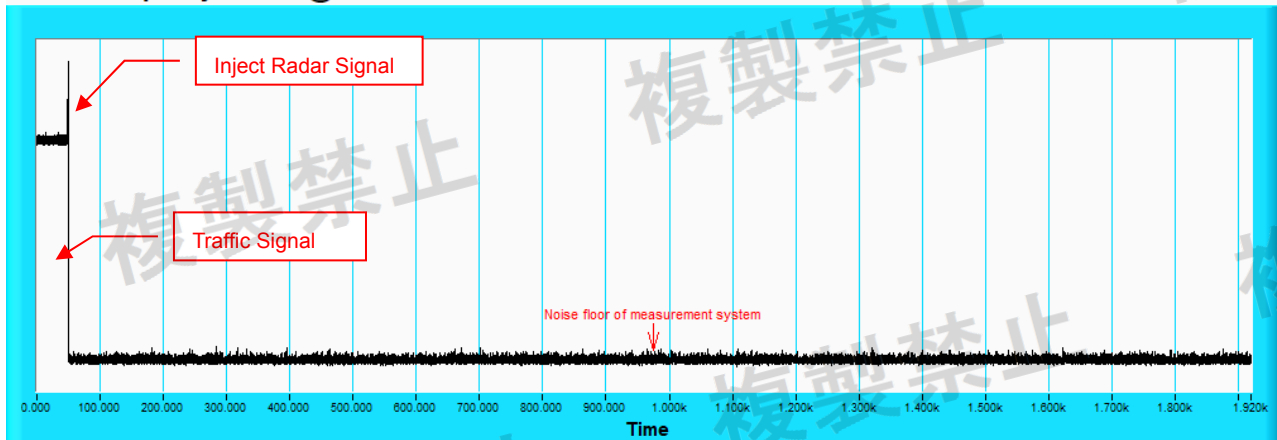
W56 802.11a

DFS-US-6 Radar Statistical Performances		
Trial #	Channel (MHz)	Channel Closing Transmission Time & Channel move Time
1	5500	Yes
2	5540	Yes
3	5700	Yes
4	5500	Yes
5	5620	Yes
6	5640	Yes
7	5640	Yes
8	5680	Yes
9	5680	Yes
10	5700	Yes
11	5600	Yes
12	5700	Yes
13	5560	Yes
14	5560	Yes
15	5560	Yes
16	5540	Yes
17	5700	Yes
18	5560	Yes
19	5540	No
20	5520	Yes
Detection Rate		95 %
Minimum Percentage of Successful Detection		70 %
Result		Pass

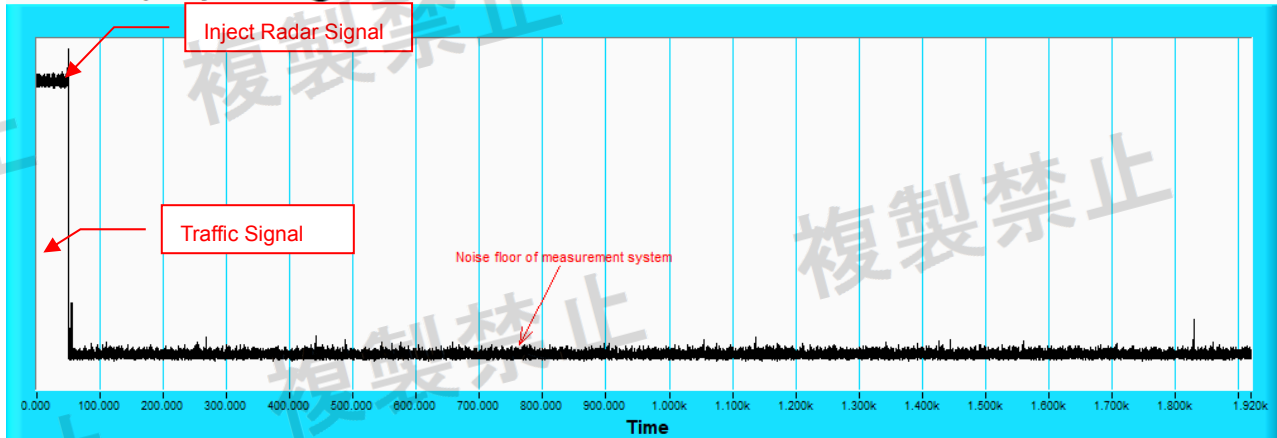
Non-Occupancy Period

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.

Non - Occupancy Period @ CH60 - 5300MHz



Non - Occupancy Period @ CH100 - 5500MHz



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.

3 Photographs of the Test Configuration



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 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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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: 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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