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FCC 15.407 NII DFS Test Report

for

Qisda Corporation

157, Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan, R.O.C.

Product Name	:	LCD Monitor
Model Name	:	 (1)HSD-0015-Q (2)OMEN X 65 (3)Omen X Emperium 65 Display (4)OMEN X Emperium 65 with NVIDIA G-SYNC HDR (5)OMEN X Emperium 65 Big Format Gaming Display with NVIDIA G-SYNC HDR
Brand		HP
REF. No.	:	RL-24029, RL-24472
FCC ID	:	VRSHSD-0015-Q

Prepared by:

: AUDIX Technology Corporation, EMC Department



The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

File Number: C1M1809237

Report Number: EM-F180516



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APPENDIX A TEST PHOTOGRAPHS

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TEST REPORT CERTIFICATION

Applicant	:	Qisda Corporation
Manufacturer	:	Qisda Corporation
Factory #1	:	Qisda (Suzhou) Co., Ltd.
Factory #2	:	Qisda Czech s.r.o.
Factory #3	:	Qisda Czech s.r.o.
Factory #4	:	QisdaOptronics (Suzhou) Co., Ltd.
Factory #5	:	Shanghai Hewiett-Packard Co., Ltd.
Factory #6	:	HP Singapore Personal Service Division Asia.
Factory #7	:	Hewiett-Packard Company
EUT Description		
(1) Product	:	LCD Monitor
(2) Model	:	 (1)HSD-0015-Q (2)OMEN X 65 (3)Omen X Emperium 65 Display (4)OMEN X Emperium 65 with NVIDIA G-SYNC HDR (5)OMEN X Emperium 65 Big Format Gaming Display with NVIDIA G-SYNC HDR
(3) Brand	:	HP
(4) Ref. No	:	RL-24029, RL-24472
(5) Power Rating	:	AC 100-240V, 50/60Hz

Applicable Standards:

47CFRFCC Part 15 Subpart E ANSI C63.10:2013 KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report. *Audix Technology Corp.* does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report:	2018. 11. 28	
Reviewed by:	Amie II	(Annie Yu/Administrator)
Approved by:	Ben Cheng	(Ben Cheng/Manager)
File Number: C1M18	09237	Report Number: EM-F180516

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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2018. 11. 28	Original Report	EM-F180516

File Number: C1M1809237

Report Number: EM-F180516



2. SUMMARY OF TEST RESULTS

Description	Results
Channel Availability Check Time	N/A
Channel Move Time	PASS
Non-Occupancy Period	PASS
Non-Associated Client Beacon	PASS
Channel Closing Transmission Time	PASS
U-NII Detection Bandwidth	N/A
N/A is an abbreviation for Not Applicable, sine the product is client without function	radar detection

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3. GENERAL INFORMATION

3.1. Description of Application

Applicant	Qisda Corporation 157, Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan, R.O.C.	
Factory #1	Qisda (Suzhou) Co., Ltd. No. 169, Zhujiang Road, New District, Suzhou, Jiangsu Province, P.R. China	
Factory #2	Qisda Czech s.r.o. Turanka 114, 62700 BmoSlatina Czech Repubilc	
Factory #3	Qisda Czech s.r.o. Turanka 98B, 62700 BmoSlatina Czech Repubilc	
Factory #4	Qisda Optronics(Suzhou)Co., Ltd No. 169, Zhujiang Road, New District, Suzhou, Jiangsu Province, P.R. China	
Factory #5	Qisda Corporation NO. 157 & 159, SHANYING RD., GUEISHAN DIST., TAOYUAN CITY 33341, TAIWAN, R.O.C.	
Factory #6	Shanghai Hewiett-Packard Co., Ltd. 25 Yun Qiao Rd., Pudong, 201206 Shanghai, China.	
Factory #7	HP Singapore Personal Service Division Asia. 452 ALEXSNDRA ROAD SINGAPORE 119961	
Factory #8	Hewiett-Packard Company 11445 Compaq Center Drive West Houston, TX77070, U.S.A.	
Product	LCD Monitor	
Brand	НР	
Model	 (1)HSD-0015-Q (2)OMEN X 65 (3)Omen X Emperium 65 Display (4)OMEN X Emperium 65 with NVIDIA G-SYNC HDR (5)OMEN X Emperium 65 Big Format Gaming Display with NVIDIA G-SYNC HDR The difference between above models is in sales marketing. 	

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3.2. Description of EUT

Test Model	HSD-0015-Q			
Serial Number	N/A			
Power Rating	AC 100-240, 50/60Hz			
RF Features	WLAN:802.11a/b/g/n/ac Bluetooth: BT and BLE			
Transmit Type	2.4 GHz 802.11b 1T1R 802.11g 1T1R 802.11n-HT20 2T2R BT/BLE 1T1R UNII Bands 802.11a 1T1R 802.11n-HT20/ 2T2R 802.11a-VHT20 2T2R 802.11ac-VHT40/ 2T2R 802.11ac-VHT40 2T2R 802.11ac-VHT40 2T2R			
Device Category	Outdoor Access Point Fixed point-to-point Access Point Indoor Access Point Mobile and Portable client device			
Sample Status	Production			
Date of Receipt	2018. 09. 29			
Date of Test	2018. 11. 08			
Interface Ports of EUT	 Left Side View One RJ-45 Port Two USB Type A Down Stream Ports One Display Port Two HDMI Ports One HDMI (ARC) Port One S/PDIF Port One Headphone out Port Right Side View Two USB Type A Charge Port Back View One DC In Port 			
Accessories Supplied	 Display Cable HDMI Cable AC Power Cord (3C) SHIELD Remote (FCC ID:VOB -P2930/IC: 7361A-P2930) 			

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3.3. Antenna Information

2.4G	2.4G Antenna					
No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)	
1 AEM6Y-100000 (Main)	ACON	PIFA	2400	-0.07		
			2450	-0.42		
			2500	-0.57		
		ACON	PIFA	2400	2.73	
2 AEM6Y-100001	AEM6Y-100001 (AUX)			2450	2.43	
	(1011)			2500	2.53	

5G A	5G Antenna					
No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)	
				5150	2.89	
1	AEM6Y-100000	ACON	PIFA	5350	2.77	
I (Main)	(Main)			5470	2.98	
				5850	1.32	
	2 AEM6Y-100001 (AUX)	ACON	PIFA	5150	3.86	
2				5350	2.93	
				5470	2.64	
				5850	1.71	

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Mode	UNII Band	Fundamental Range (MHz)	Channel Number		
000.11	II-2A	5260-5320	4		
802.11a	II-2C	5500-5700	11		
802.11n-HT20/ 802.11ac-VHT20	II-2A	5260-5320	4		
	II-2C	5500-5700	11		
802.11n-HT40/ 802.11ac-VHT40	II-2A	5270-5310	2		
	II-2C	5510-5670	5		
802.11ac-VHT80	II-2A	5290	1		
	II-2C	5530-5610	2		
Remark: UNII Band II-2A and II-2C (DFS Function, Slave/no In service monitor, no Ad-Hoc mode)					

3.4. EUT Specifications Assessed in Current Report

 Mode
 Modulation
 Data Rate (Mbps)

 802.11a
 OFDM (BPSK/QPSK/16QAM/64QAM)
 Up to 54

 802.11n-HT20
 OFDM (BPSK/QPSK/16QAM/64QAM)
 Up to 144.4

 802.11n-HT40
 Up to 300
 Up to 173.3

OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)

3.5. Descriptions of Key Components

None

802.11ac-VHT40

802.11ac-VHT80

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Up to 400

Up to 866.7

3.6. Test Configuration

Item	Bandwidth	Test Channel
Channel Move Time& Channel Closing Transmission Time	20MHz	52
Non-Occupancy Period & Non-associated Test	20MHz	52

3.7. Tested Supporting System List

Item	Manufacturer	Model	Remark	
Al	P Server embedded	with Wireless AC	Module	
AP Server	D-LINK	DIR-868L	FCC ID: KA2IR868LA1 IC: 4216A-IR868LA1	
Wireless AC Module	Alpha	WMC-AC01	FCC ID: RRK2012060056-1 IC: 4833A-WMCAC01A1	

3.8. Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com
Accreditations	 The laboratory is accredited by following organizations under ISO/IEC 17025:2005 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 (1) RF Test Room

3.9. Measurement Uncertainty

Test Item	Uncertainty
DFS Measurement	±0.5ms
Threshold	±0.33dB

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4. MEASUREMENT EQUIPMENTLIST

Item	Туре	Type Manufacturer Model No		Serial No.	Cal. Date	Cal. Interval
1.	Vector Signal Generation	R&S	SMU200A	104893	2018.06.27	1 Year
2.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	2018.06.20	1 Year
3.	Spectrum Analyzer	R&S	FSV30	101181	2018.07.12	1 Year
4.	Atteuator (10dB) X2	Worken	WK0602-10	0120A02208001S	N.C.R	N.C.R
5.	Atteuator (30dB) X2	Worken	WK0602-30	0120A02208002S	N.C.R	N.C.R

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5. WORKING MODES AND REQUIREMENT TEST ITEM

	Operational Mode					
Requirement	Master	Client without radar detection	Client with radar detection			
Non-Occupancy Period	\checkmark	Not required	\checkmark			
DFS Detection Threshold	\checkmark	Not required	\checkmark			
Channel Availability Check Time	\checkmark	Not required	Not required			
Uniform Spreading	✓ Not required		Not required			
U-NII Detection Bandwidth	\checkmark	Not required	\checkmark			

5.1. Applicability of DFS Requirements Prior To Use A Channel

5.2. Applicability of DFS Requirements During Normal Operation

	Operational Mode					
Requirement	Master	Client without radar detection	Client with radar detection			
DFS Detection Threshold	\checkmark	Not required	\checkmark			
Channel Closing Transmission Time	\checkmark	\checkmark	\checkmark			
Channel Move Time	\checkmark	\checkmark	\checkmark			
U-NII Detection Bandwidth	\checkmark	Not required	\checkmark			

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6. DFS DETECTION THRESHOLOS AND RADAR TEST

WAVEFORMS

6.1. Interference Threshold Value, Master or Client Incorporating

In-Service Monitoring

Maximum Transmit Power	Value (See Notes 1 and 2)			
\geq 200 milliwatt	-64dBm			
< 200 milliwatt	-62dBm			

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

The radar Detection Threshold, lowest antenna gain is the parameter of interference radar DFS detection threshold.

6.2. Radar Test Waveform Minimum Step

Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

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Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulse	Minimum Percentage of Successful Detection	Minimum number of Trials
0	1	1428	18	See Note 1	See Note 1
1A	1	15 unique PRI in KDB 905462 D02 Table 5a	$Roundup\left\{ \left(\frac{1}{360}\right) \times \left(\frac{19 \times 10^{6}}{PRI}\right) \right\}$	60%	15
1B	1	15 unique PRI within 518-3066, Excluding 1A PRI		60%	15
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate	(Radar Types	1-4)		80%	120
Note 1: She	ort Pulse Rada	ar Type 0 should b	e used for the detection ba	andwidth test, c	hannel

6.3. Short Pulse Radar Test Waveforms

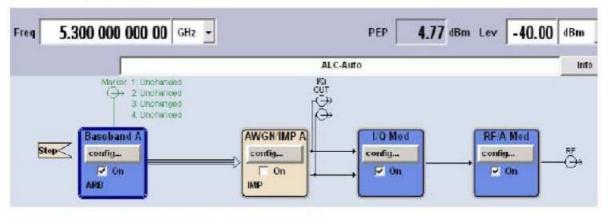
move time, and channel closing time tests.

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for short pulse radar types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

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FCC Radar Types (1~4) System Diagram



Used R&S SMU200A (Vector SG with two ARB)

B11: Base-band Generator with ARB (16M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

For selecting the waveform parameters from within the bounds of the signal type, system was random selection using uniform distribution.

6.4. Long Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulse Per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms. Each waveform is defined as following:

- (1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- (2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
- (3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
- (4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the some pulse width. Pulses in different Bursts may have different pulse widths.

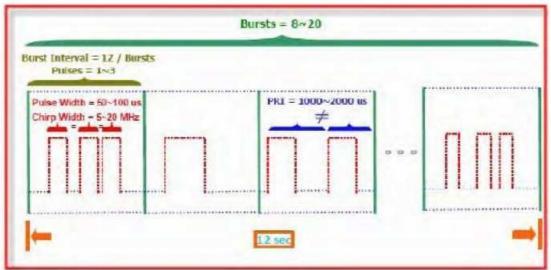
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- (5) Each pulse has a linear FM chirp between 5 and 20MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Burst may have different chirp widths. The chirp is centered on the pulse. For example, with a radar frequency of 5300MHz and a 20MHz chirped signal, the chirp starts at 5290MHz and ends at 5310MHz.
- (6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- (7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length (12000000/Burst_Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12000000/Burst_Count)-(Total Burst length)+(One Random PRI interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

- (1) The total test signal length is 12 seconds.
- (2) 8 Bursts are randomly generated for the Burst_Count.
- (3) Burst 1 has 2 randomly generated pulses.
- (4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
- (5) The PRI is randomly selected to be at 1213 microseconds.
- (6) Bursts 2 through 8 are generated using steps 3-5.
- (7) Each Burst is contained in even intervals of 1500000 microseconds. The starting location for Pulse 1. Burst 1 is randomly generated (1 to 1500000 minus the total Burst 1 length + 1 random PRI interval) at the 325001 microsecond step. Bursts 2 through 8 randomly fall in successive 1500000 microsecond intervals (i.e. Burst 2 falls in the 1500001-3000000 microsecond range).



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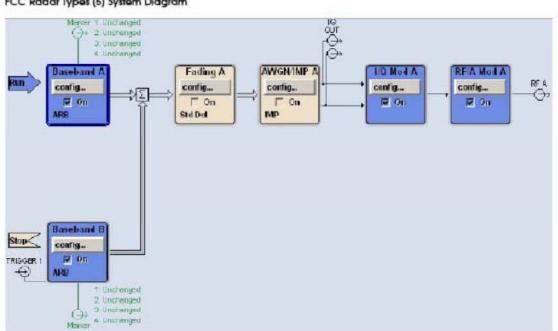
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FCC Radar Types (5) System Diagram



Used R&S SMU200A (Vector SG with two ARB)

Path A/Path B Two B11: Base-band Generator with ARB (16M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

For selecting the waveform parameters from within the bounds of the signal type, system was random selection using uniform distribution.

6.5. Frequency Hopping Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses Per Hop	Hopping Rate (kHz)	Hopping Sequence Length (ms)	Minimum Percentage of Successful Detection	Minimum of Trials
6	1	333	9	0.333	300	70%	30

For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies form 5250-5274MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of random frequency, the frequencies remaining within the group are always treated as equally likely.

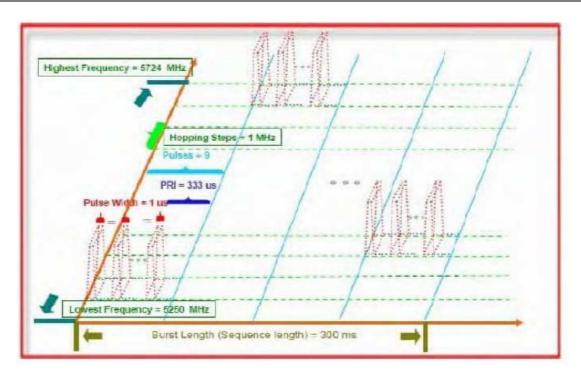
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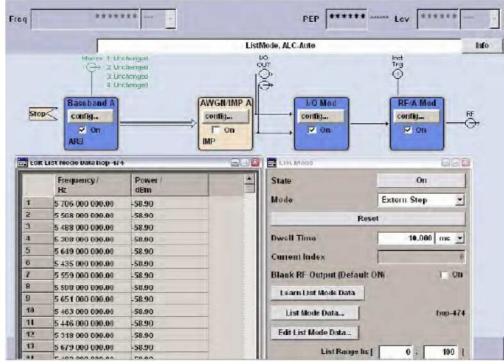


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FCC Radar Types (6) System Diagram



Used R&S SMU200A (Vector SG with two ARB)

B11: Base-band Generator with ARB (16M samples) and Digital Modulation

B13: Base-band Main Module

B106: frequency range (100 kHz to 6 GHz)

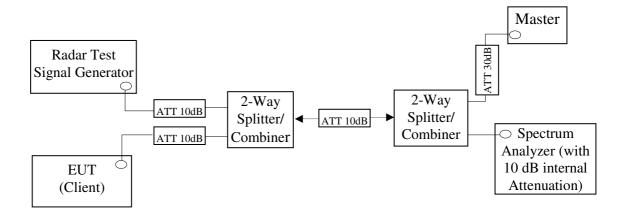
For selecting the waveform parameters from within the bounds of the signal type, system was random selection using uniform distribution.

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6.6. Conducted Calibration Setup



6.7. Radar Waveform Calibration Procedure

The measured frequency is 5260MHz and 5310MHz. The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) or Client Device with Radar Detection, measured the channel closing transmission time and channel move time. The calibrated conducted detection threshold level is set to -62dBm. The tested level is lower than required level hence it provides margin to the limit.

6.8. Calibration Deviation

There is no deviation with the original standard.

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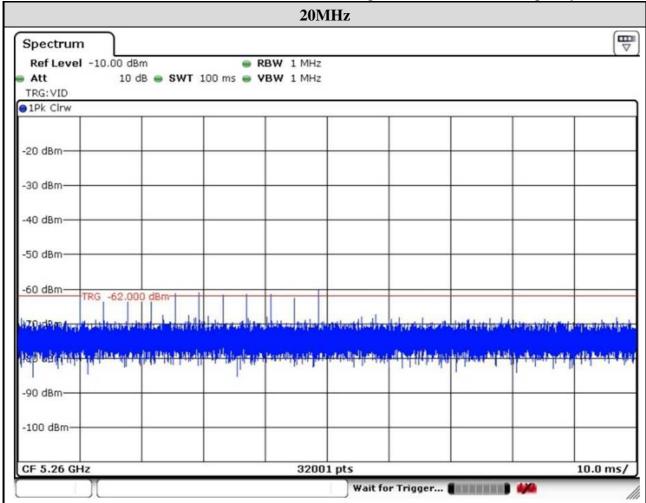
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6.9. Radar Waveform Calibration Result

DFS detection threshold level and the burst of pulses on the Channel frequency



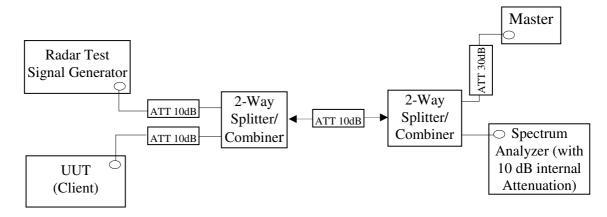
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7. TEST SETUP AND TEST RESULT

7.1. Test Setup

7.1.1. Test Setup Diagram

Following is the test setup for generated the radar waveforms and used to monitor UNII device.



7.1.2. Test Setup Operation

System testing was performed with the designated MPEG test file that streams full motion video from the Access Point to Client in full motion video mode using the media player with the V2.61 Codec package. This file is used by IP and Frame based systems for loading the test channel during the in-service compliance testing of the U-NII device.

The waveform parameters from within the bounds of the signal type are selected randomly using uniform distribution.

A spectrum analyzer is used as a monitor to verify that the EUT has vacated the Channel within the (Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time.

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7.1.3. Test Setup for Data Traffic Plot

2018/11/08

Temp./Hum.

23°C/55%

Test Mode: 20MHz											
	TX 5260MHz										
Spectrur	n										
	RefLevel 0.00 dBm										
Att SGL	10 dB	SWT 12	s 👄 VBW	1 MHz							
●1Pk Clrw	1	1		I				I			
-10 dBm—											
-20 dBm—											
-30 dBm	a state of the state of the			due as at off soft MI	an ald all all an	ato ana sanatata	alue a statt soft au	ann a ha ha Meirice dhe ann a			
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-80 dBm											
-90 dBm—											
CF 5.26 G	Hz			3200	1 pts				1.2 s/		
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Date: 8.NO	V.2018 16	:39:59									

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7.2. Channel Move Time, Channel Closing Transmission Time,

Non-Occupancy Period, Non-Associated Client Beacon Measurement

7.2.1. Limit

Parameter	Value
Channel Move Time	10 seconds
	See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
Non-Occupancy Period	Non-Occupancy Period time is 30 minute during which a Channel will not be utilized after a Radar Waveform is detected on that Channel
Non-Associated Client Beacon	The non-associated Client Beacon Test is during the 30 minutes observation time. The EUT should not make any transmissions in the DFS band after EUT power up.

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

- a. For the Short Pulse Radar Test Signals this instant is the end of the Burst.
- b. For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
- c. For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform.
- Note 2: 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.

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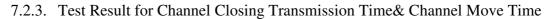
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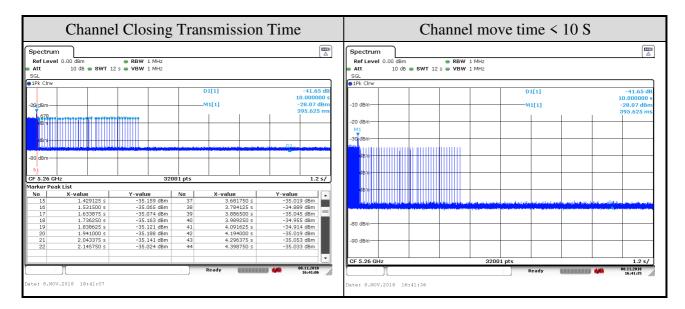
7.2.2. Test Procedures

- When a radar Burst with a level equal to the DFS Detection Threshold + 1dB is generated on the operating channel of the U-NII device. A U-NII device operating as a Client Device will associate with the Master of channel. Stream the MPEG test file from the Master Device to the Client Device on the selected channel for entire period of the test. At time to the radar waveform generator sends a Burst of pulses for each of the radar types at Detection Threshold + 1dB.
- Observe the transmissions of the EUT at the end of the radar Burst on the Operating channel. Measure and record the transmissions from the EUT during the observation time [Channel Move Time]. One 10 Second plot bee reported for the short Pulse Radar type 1-4 and one for the Long Pulse Radar Type test in a 22 second plot. The plot for the Short Pulse Radar types start at the end of the radar burst. The Channel Move Time will be calculated based on the plot of the short Pulse Radar Type. The Long Pulse Radar Type plot show the device ceased transmissions within the 10 second window after detection has occurred. The plot for the Long Pulse Radar type should start at the beginning of the 12 second waveform.
- Measure the EUT for more than 30 minutes following the channel close/move time to verify that the EUT does not resume only transmissions on this channel.

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Test Date	2018/11/08	Temp./Hum.	23°C/55%
Test Mode	20MHz	Frequency	TX 5260MHz





Channel Closing Transmission Time Calculated		
Sweep Time(S) sec	12	
Sweep points (P)	32001	
Number of Sweep points in 10 sec (N)	44	
Channel Closing Time (C) ms	16.50	

Channel closing time is calculated from C=N* dwell; where dwell is the occupancy time per sweep point calculated by the formula: dwell=S/P. N is the number of sweep points indicating transmission after S1; where S1 is the radar signal detected

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7.2.4.	Test Result fo	r Non-Occup	bancy Period
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Test	Date
Test	Date

2018/11/08

Temp./Hum.

23°C/55%

	Test Mode: 20MHz				
	TX 5260MHz				
Spectrum					
	● RBW 1 MHz WT 2000 s ● VBW 1 MHz				
SGL IPk Clrw					
		D1[1]	-38.84 dB 1800.0000 s		
-10 dBm		M1[1]	-28.05 dBm 9.4375 s		
-20 dBm					
-40 dBm					
-50 dBm					
-60 dBm			- un da m		
-70 dBm					
-80 dBm					
-90 dBm					
CF 5.26 GHz	3200)1 pts	200.0 s/		
Date: 8.NOV.2018 17:39:	48	Ready	08.11.2018 17:39:47 ///		

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APPENDIX A Tel: +886 2 26099301

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APPDNDIX A

TEST PHOTOGRAPHS

(Model: HSD-0015-Q)

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