FCC Dynamic Frequency Selection Test Report

for

Intel Corporation

Notebook

Model No.: HSBUB-SDS

FCC ID : RMXHSBUB-SDS

IC: 1000V-HSBUBSDS

Brand: Intel

Prepared for : Intel Corporation
2200 Mission College Blvd.
Santa Clara, CA 95054-1549, USA

Prepared By : AUDIX Technology Corporation
EMC Department
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File Number : C1M1212198
Report Number : EM-F1020111
Date of Test : Feb. 06 ~ 07, 2013
Date of Report ; Feb. 07, 2013

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TEST REPORT VERIFICATION

Applicant	:	Intel Corporation
Manufacturer	:	Intel Corporation
EUT Description	:	Notebook
FCC ID	:	RMXHSBUB-SDS
IC	:	1000V-HSBUBSDS
(A) Model No.	:	HSBUB-SDS
(B) Serial No.	:	N/A
(C) Brand	:	Intel
(D) Power Supply	:	DC 19V or DC 20V
(E) Test Voltage	:	AC 120V, 60Hz (Via AC Adapter)

Measurement Standards Used:

FCC RULES AND REGULATIONS PART 15 Subpart E, Oct. 2012
(FCC CFR 47 Part 15E, §15.407)
Industry Canada Rules and Regulations RSS-Gen (Issue 3), December 2010 and RSS-210 (Issue 8), December 2010
(Canada RSS-210 §Annex 9)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart E and Canada RSS-210 (Issue 8) Annex 9 limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC Part 15 and Industry Canada RSS-Gen, RSS-210 standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: Feb. 06 ~ 07, 2013 Date of Report: Feb. 07, 2013

Producer: Tina Huang
(Tina Huang/Administrator)

Signatory: Ben Cheng
(Ben Cheng/Manager)

1. SUMMARY OF MEASUREMENTS AND RESULTS

The EUT has been tested according to the applicable standards as referenced below.

Description of Test Item	Results
Channel Availability Check Time	N/A
Channel Move Time	PASS
Non-Occupancy Period	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 radar detection function	

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product	Notebook
Model Number	HSBUB-SDS
Serial Number	N/A
Brand Name	Intel
Applicant	Intel Corporation 2200 Mission College Blvd, Santa Clara, CA 95054-1549, USA
Mini HDMI Dongle	Cable: Non-Shielded, Detachable, 0.18m
HDMI Cable	Non-Shielded, Detachable, 1.8m
FCC ID	RMXHSBUB-SDS
IC	1000V-HSBUBSDS
Fundamental Range	802.11b/g: 2412MHz ~ 2462MHz 802.11a: 5180MHz ~ 5240MHz (UNII Band I) and 5260MHz ~ 5320MHz (UNII Band II) and 5500MHz ~ 5700MHz (UNII Band III) and 5745MHz ~ 5825MHz (UNII Band IV) 5250MHz ~ 5350MHz, 5470MHz ~ 5725MHz (DFS Function, Slave/no In service monitor, no Ad-Hoc mode) 802.11n-HT20: 2412MHz ~ 2462MHz and 5180MHz ~ 5240MHz (UNII Band I) and 5260MHz ~ 5320MHz (UNII Band II) and 5500MHz ~ 5700MHz (UNII Band III) and 5745MHz ~ 5825MHz (UNII Band IV) 5250MHz ~ 5350MHz, 5470MHz ~ 5725MHz (DFS Function, Slave/no In service monitor, no Ad-Hoc mode) 802.11n-HT40: 2422MHz ~ 2452MHz and 5190MHz ~ 5230MHz (UNII Band I) and 5270MHz ~ 5310MHz (UNII Band II) and 5510MHz ~ 5670MHz (UNII Band III) and 5755MHz ~ 5795MHz (UNII Band IV) 5250MHz ~ 5350MHz, 5470MHz ~ 5725MHz (DFS Function, Slave/no In service monitor, no Ad-Hoc mode) BT and BT Low Energy: 2402MHz ~ 2480MHz

Fundamental Range	GPRS/EGPRS 850: UL: 824MHz to 849MHz DL: 869MHz to 894MHz GPRS/EGPRS 1900: UL: 1850MHz to 1910MHz DL: 1930MHz to 1990MHz WCDMA Band: Band II: UL: 1850MHz to 1910MHz; DL: 1930MHz to 1990MHz Band IV: UL: 1710MHz to 1755MHz; DL: 2110MHz to 2115MHz Band V: UL: 824MHz to 849MHz; DL: 869MHz to 894MHz NFC: 13.56MHz
Frequency Channel	802.11b/g: 11 channels 802.11a: UNII Band I: 4channels UNII Band II: 4 channels UNII Band III: 8 channels UNII Band IV: 4 channels 802.11n-HT20: 2.4GHz: 11 channels 2.4G UNI Band I: 4channels UNII Band II: 4 channels UNII Band III: 8 channels UNII Band IV: 4 channels 802.11n-HT40: 2.4GHz: 7 channels UNII Band I: 2channels UNII Band II: 2 channels UNII Band III: 5 channels UNII Band IV: 3 channels Bluetooth: 79 channels (GFSK, π /4DQPSK, 8-DPSK) 40 channels (Low Energy) GPRS/EGPRS 850: CH 128- CH 251 GPRS/EGPRS 1900: CH 512-CH 810 WCDMA Band: Band II: UL: CH 9262-CH9538; DL: CH 9662-CH9938 Band IV: UL: CH 1312-CH1513; DL: CH 1537-CH1738 Band V: UL: CH 4132-CH4233; DL: CH 4357-CH4458 NFC: 1 Channel
Radio Technology	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g: OFDM Modulation (BPSK/QPSK/16QAM/64QAM) 802.11a: OFDM Modulation (BPSK/QPSK/16QAM/64QAM) 802.11n: OFDM Modulation (MIMO) (BPSK/QPSK/16QAM/64QAM) Bluetooth: FHSS (GFSK,π/4DQPSK, 8-DPSK) DSSS (Low Energy)

Data Transfer Rate	802.11b: 1/2/5.5/11Mbps 802.11a/g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps Bluetooth: 1/2/3Mbps GSM:DL 14.4kbps/UL 14.4kbps GPRS: DL 85.6kbps/UL 85.6kbps EGPRS:DL 236.8kbps/UL 236.8kpbs WCDMA CS: DL 64kbps/UL 64kpbs WCDMA PS: DL 384kbps/UL 384kbps HSPA+:DL 21.6Mbps/UL 5.76Mpbs
Date of Receipt of Sample	Dec. 18, 2012
Date of Test	Feb. 06 ~ 07, 2013
Note: This EUT has 2.4GHz (WLAN, BT and Low Energy), 5GHz, GPRS/EGPRS, WCDMA and NFC function. See below for related test reports based on radio functionality. 1. The 2.4GHz (WLAN and Low Energy) & 5.8GHz (UNII Band IV) function has been test in other report of EM-F1020109. 2. The 2.4GHz (BT) function has been test in other report of EM-F1020099. 3. The 5GHz (UNII Band II, III & IV) function has been test in other report of EM-F1020110. 4. The NFC function has been test in other report of EM-F1020112.	

2.2. Antenna Information

Antenna Part Number	Manufacture	Antenna Type	Peak Gain	
			Frequency	Max Gain
Project Name: Harris Beach WLAN Antenna (Main) Part Number: 1556570	TE Connectivity	PIFA	2400MHz	1.24dBi
			2442MHz	0.63dBi
			2484MHz	1.93dBi
			5150MHz	0.74dBi
			5250MHz	0.64dBi
			5350MHz	0.24dBi
			5470MHz	-0.54dBi
			5600MHz	-0.20dBi
			5725MHz	-0.55dBi
			5785MHz	0.84dBi
			5800MHz	0.03dBi
			5850MHz	-0.29dBi
Project Name: Harris Beach WLAN/BT Antenna (AUX) Part Number: 1556568	TE Connectivity	PIFA	2400MHz	0.75dBi
			2442MHz	1.39dBi
			2484MHz	1.82dBi
			5150MHz	1.79dBi
			5250MHz	0.79dBi
			5350MHz	1.27dBi
			5470MHz	0.72dBi
			5600MHz	0.36dBi
			5725MHz	1.31dBi
			5785MHz	1.86dBi
			5800MHz	3.04dBi
			5850MHz	2.45dBi

Antenna Part Number	Manufacture	Antenna Type	Peak Gain	
			Frequency (TX)	Max Gain
Project Name: Harris Beach WWAN Antenna (Main) Part Number: 1556567	TE Connectivity	PIFA	704MHz	-2.04dBi
			710MHz	-1.57dBi
			716MHz	-1.45dBi
			777MHz	-2.31dBi
			782MHz	-2.22dBi
			787MHz	-2.61dBi
			832MHz	-2.42dBi
			847MHz	-3.26dBi
			862MHz	-3.20dBi
			824MHz	-3.44dBi
			836MHz	-4.03dBi
			849MHz	-3.89dBi
			880MHz	-2.79dBi
			900MHz	-2.71dBi
			915MHz	-3.08dBi
			1710MHz	-4.09dBi
			1750MHz	-3.34dBi
			1785MHz	-3.77dBi
			1710MHz	-3.69dBi
			1732MHz	-3.43dBi
			1755MHz	-3.34dBi
			1850MHz	-3.88dBi
			1880MHz	-2.86dBi
			1910MHz	-2.97dBi
			1920MHz	-3.30dBi
			1950MHz	-3.28dBi
			1980MHz	-2.86dBi
			2500MHz	-1.90dBi
			2535MHz	-2.29dBi
			2570MHz	-2.08dBi

Antenna Part Number	Manufacture	Antenna Type	Peak Gain (dBi)	
			Frequency (RX)	Max Gain
Project Name: Harris Beach WWAN Antenna (AUX) Part Number: 1556569	TE Connectivity	PIFA	1575MHz	-3.67dBi
			1602MHz	-3.71dBi

2.3. Description of Key Component Lists

2.3.1.For the All Component Lists

Item		Supplier	Description	Character
System		Microsoft	Windows 8	---
Main Board		Flex	832-FIG-ITLH-G71865-400	PCBA for NB shuold not be listed separately
LCD Panel		Chimei Innolux Corp	N133HSE-EXX	13.3 inches TFT Type
CPU		Intel	---	Up to 3.3GHz
Graphics		Intel	Intel® HD Graphics with DX11	---
Memory		Samsung	---	4GB
SSD		Samsung	#1 MZ-C****** #2 MZ-D****** #3 MZ-E****** #4 MZ-N****** (* can be 0-9, A-Z, blank, slash or dash for different market purpose)	128GB
Keyboard		Kunshan YingHui Precision Electronic Co.	YH-BH12LCxx (xx=01 for US language; 02 for SP language)	--
Battery Pack		Getac Technology Corp	HB FFRD	7.5V, 7100 mAh, 53.25Whr
Web Camera		CHICONY Electronics Co., Ltd.	CKFCF01	---
WLAN+BT Combo Module		Broadcom	AW-NB136	IEEE 802.11a/b/g+ 2X2 n Bluetooth 4.0+Low Energy
WWAN		Huawei	MU736	WCDMA/HSDPA/HSUPA /HSPA GSM/GPRS/EDGE, GPS/A-GPS
WWAN Antenna	Main	TE Connectivity Ltd.	1556567	---
	AUX		1556569	---
WiFi/BT Antenna	Main	TE Connectivity Ltd.	1556570	--
	AUX		1556568	---
AC Adapter #1		Chicony	A12-045N2A	I/P: 100-240V~, 1.3A 50-60Hz O/P: 19V, 2.37A
		DC Power Cord: Non-Shielded, Undetached, 1.0m AC Power Cord: Non-Shielded, Detached, 1.8m		
AC Adapter #2		Delta	ADP-45BE AA	I/P: 100-240V~, 1.3A 50-60Hz O/P: 20V, 2.25A
		DC Power Cord: Non-Shielded, Undetached, 1.0m AC Power Cord: Non-Shielded, Detached, 1.8m		

Remark: For a more detailed features description, please refer to the manufacturer's specifications or the user manual.

2.3.2. For the EUT Test Configuration

Configuration	**SKU #1**
System	Microsoft, Windows 8
Main Board	Flex, 832-FIG-ITLH-G71865-400
LCD Panel	Chimei Innolux Corp., N133HSE-EXX
CPU	Intel, i7-4650U
Graphics	Intel, Intel® HD Graphics with DX11
Memory	Samsung, K4E8E304EB-EGCE, 4GB
SSD	Samsung, MZNTD128HAGM
Keyboard	YH-BH12LC01
Battery Pack	Getac Technology Corp, M/N HB FFRD
Web Camera	CHICONY Electronics Co., Ltd., CKFCF01
WLAN+BT Combo Module	Broadcom, M/N AW-NB136
WWAN	Huawei, M/N MU736
WLAN/BT Antenna	Main: TE Connectivity Ltd., 1556570 AUX: TE Connectivity Ltd., 1556570
WWAN Antenna	Main: TE Connectivity Ltd., 1556567 AUX: TE Connectivity Ltd., 1556569
AC Adapter	Chicony, M/N A12-045N2A
Resolution	1920*1080

2.4. Support Equipment

Item	Manufacturer	Model	Remark
AP Server	CISCO	AIR-AP1262N-A-K9	FCC ID: LDK102073 IC:2461B-102073
AP Server	D-Link	DIR-815A1	NCC ID: CCAI10LP092AT0 FCC ID: KA2IR815A1 IC: 4216A-IR815A1

2.5. Test Channel

Frequency Band	Channel No.	Frequency
5250-5350MHz (Band 2)	60	5300MHz
5470-5725MHz (Band 3)	100	5500MHz

2.6. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation**
EMC Department
No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan, R.O.C.

Test Site : No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan, R.O.C.

NVLAP Lab. Code : 200077-0

TAF Accreditation No : 1724

2.7. Measurement Uncertainty

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

3. TEST EQUIPMENT

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Vector Signal Generation	R&S	SMU200A	104893	May 07, 12’	May 06, 13’
2.	Spectrum Analyzer	R&S	FSV7	102493	Apr. 26, 12’	Apr. 25, 13’
3.	Atteuator (10dB) X2	Worken	WK0602-10	0120A02 208001S	N/A	N/A
4.	Atteuator (30 dB) X2	Worken	WK0602-30	0120A02 208002S	N/A	N/A

4. WORKING MODES AND REQUIREMENT TEST ITEM

4.1. Applicability of DFS Requirements Prior To Use A Channel

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

4.2. Applicability of DFS Requirements During Normal Operation

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

5. DFS DETECTION THRESHOLOS AND RADAR TEST WAVEFORMS

5.1. Interference Threshold Value, Master or Client Incorporating In-Service Monitoring

Maximum Transmit Power	Value (See Notes 1 and 2)
≥ 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.

5.2. Radar Test Waveform Minimum Step

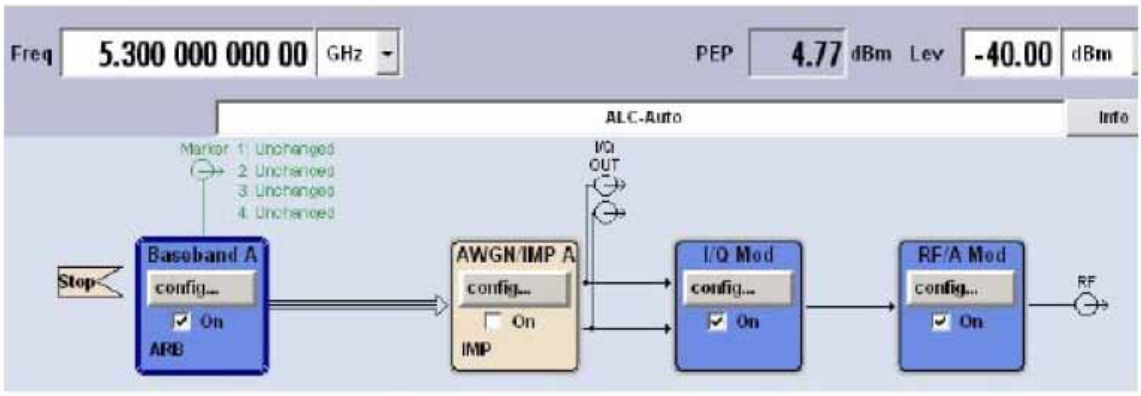
Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

5.3. Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulse	Minimum Percentage of Successful Detection	Minimum number of Trials
1	1	1428	18	60%	30
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

A minimum of 30 unique waveforms are required for each of the short pulse radar type 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.

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.

5.4. 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.

(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.

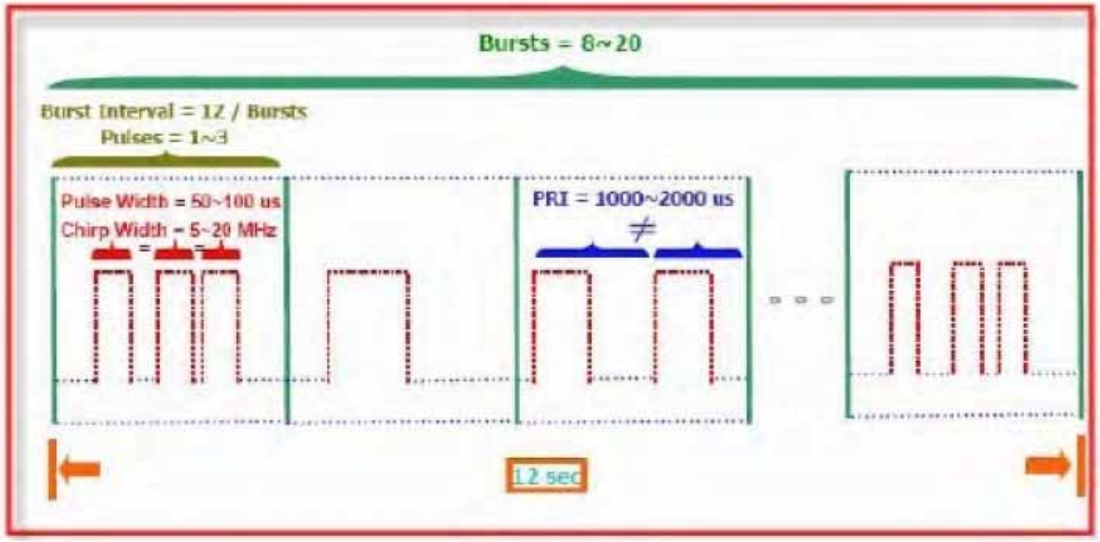
(3) Burst 1 has 2 randomly generated pulses.

(4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.

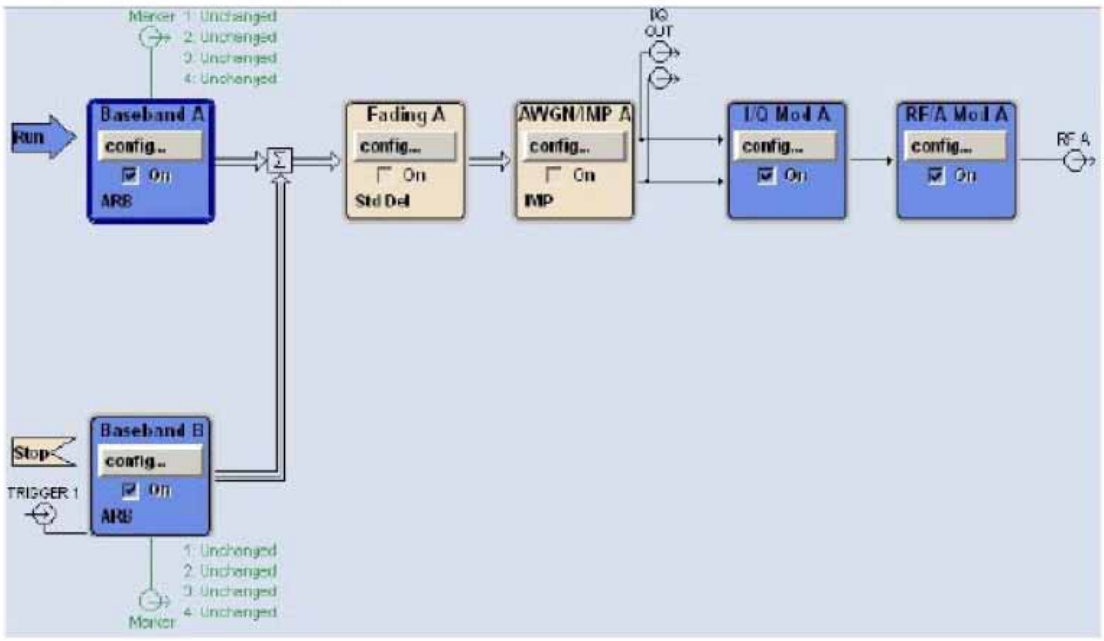
(5) The PRI is randomly selected to be at 1213 microseconds.

(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).



FCC Radar Types (5) System Diagram



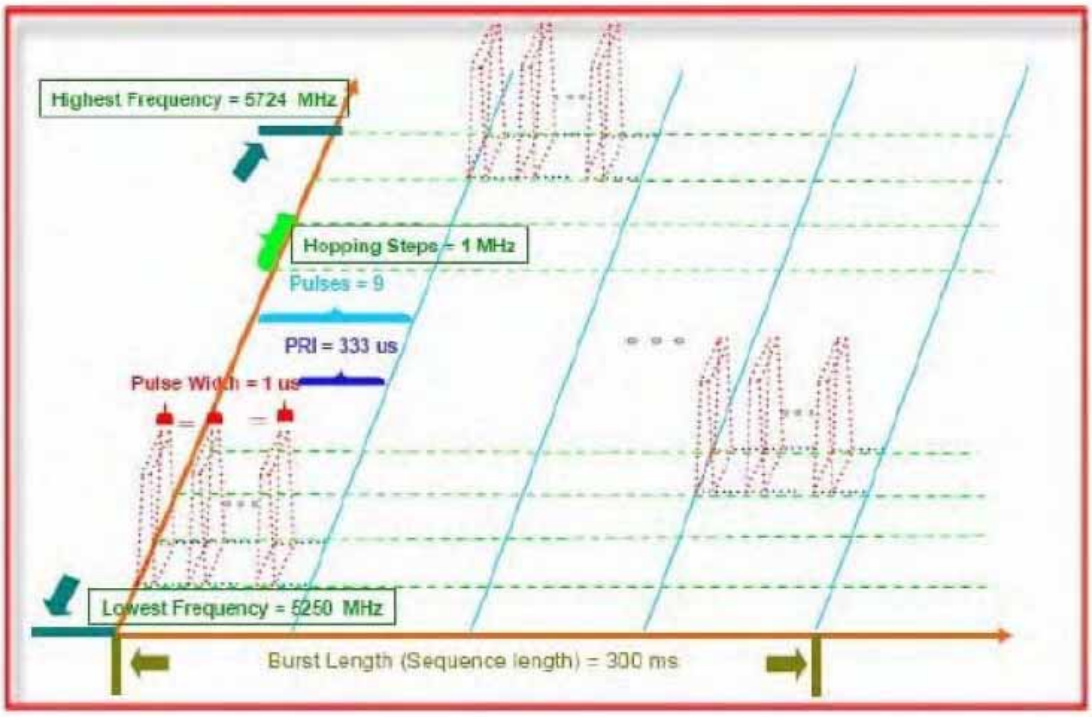
Used R&S SMU200A (Vector SG with two ARB)
Path A/Path B Two B11: Base-band Generator with ARB (16M samples) and Digital Modulation
B13: Base-band Main Module
B106: frequency range (100 kHz to 6 GHz)
For selecting the waveform parameters from within the bounds of the signal type, system was random selection using uniform distribution.

5.5. Frequency Hopping Pulse Radar Test Waveforms

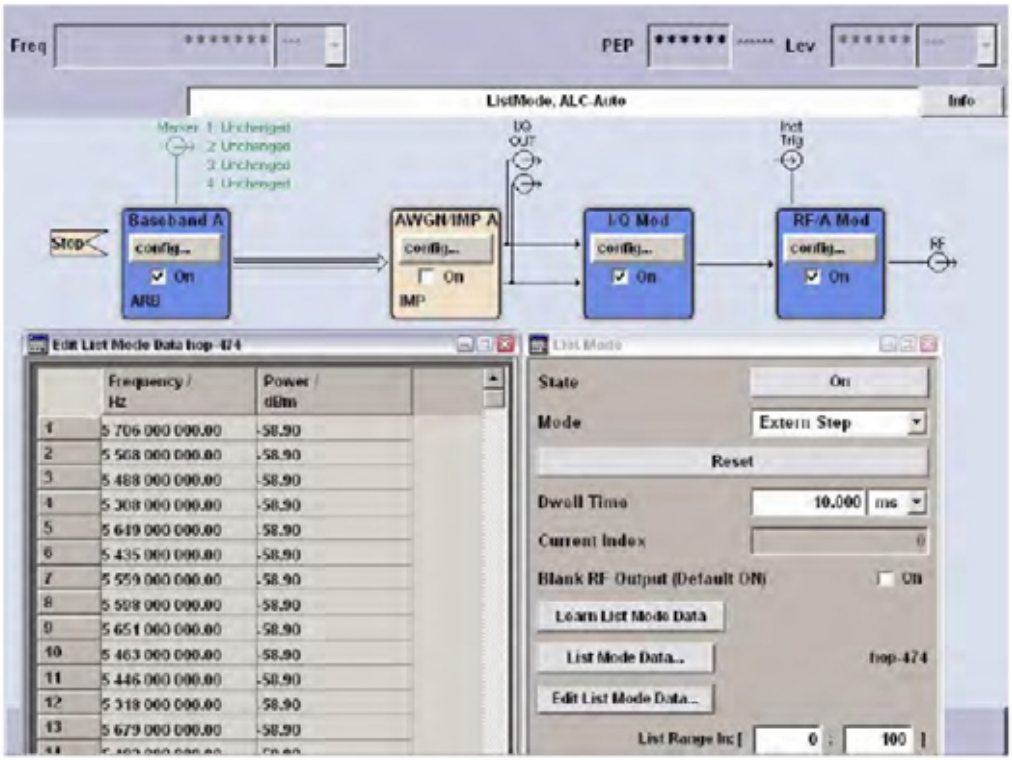
Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses Per Hop	Hopping Rate (kHz)	Hopping Sequence Length (ms)	Minimum Percentage of Successful Detection	Minimum of Trials
6	1	333	9	0.333	300	70%	30

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.

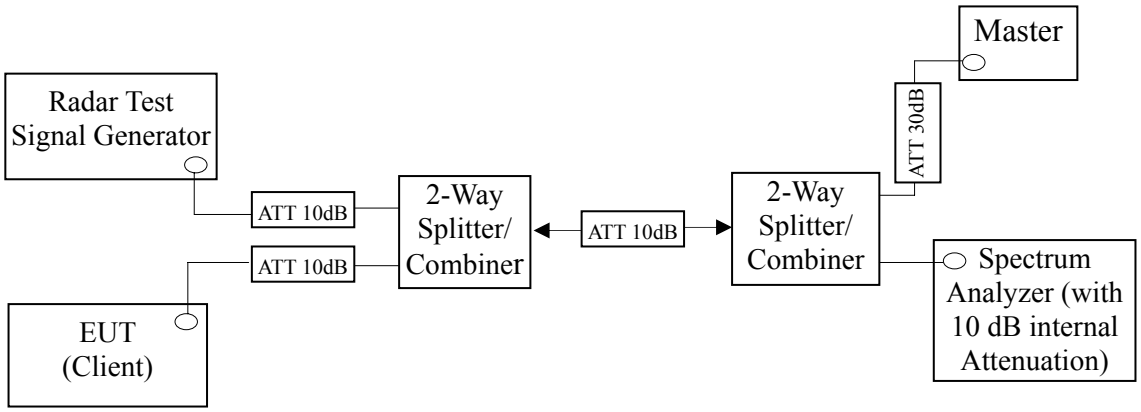


FCC Radar Types (6) System Diagram



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.

5.6. Conducted Calibration Setup



5.7. Radar Waveform Calibration Procedure

The measured frequency is 5300MHz & 5500MHz. 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 -59dBm. The tested level is lower than required level hence it provides margin to the limit.

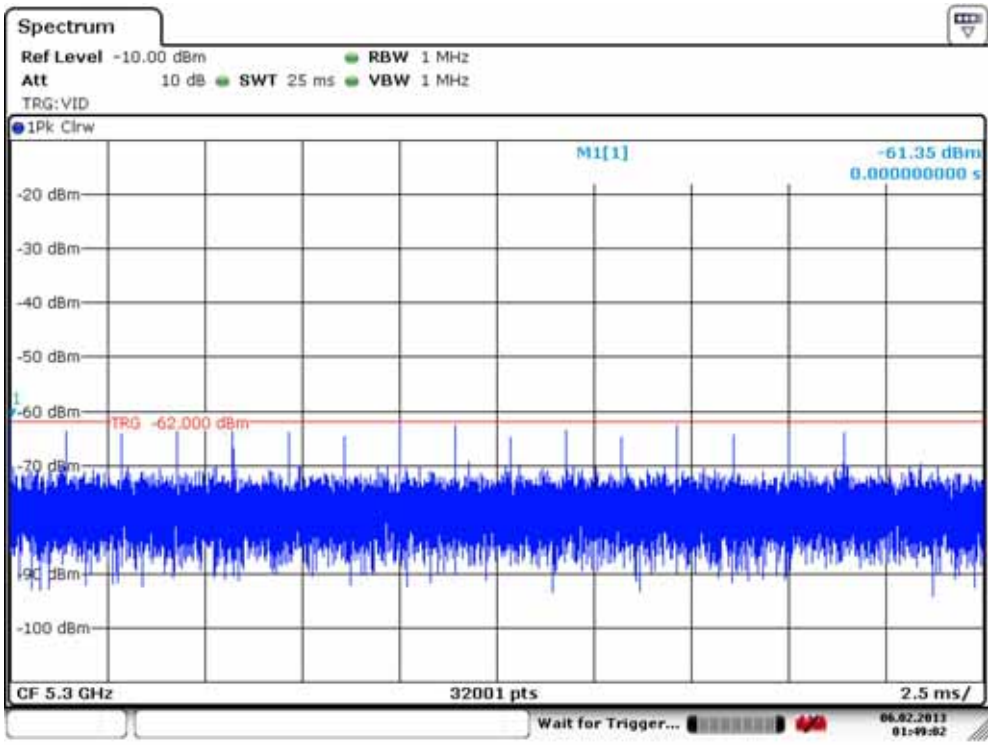
5.8. Calibration Deviation

There is no deviation with the original standard.

5.9. Radar Waveform Calibration Result

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

5300MHz



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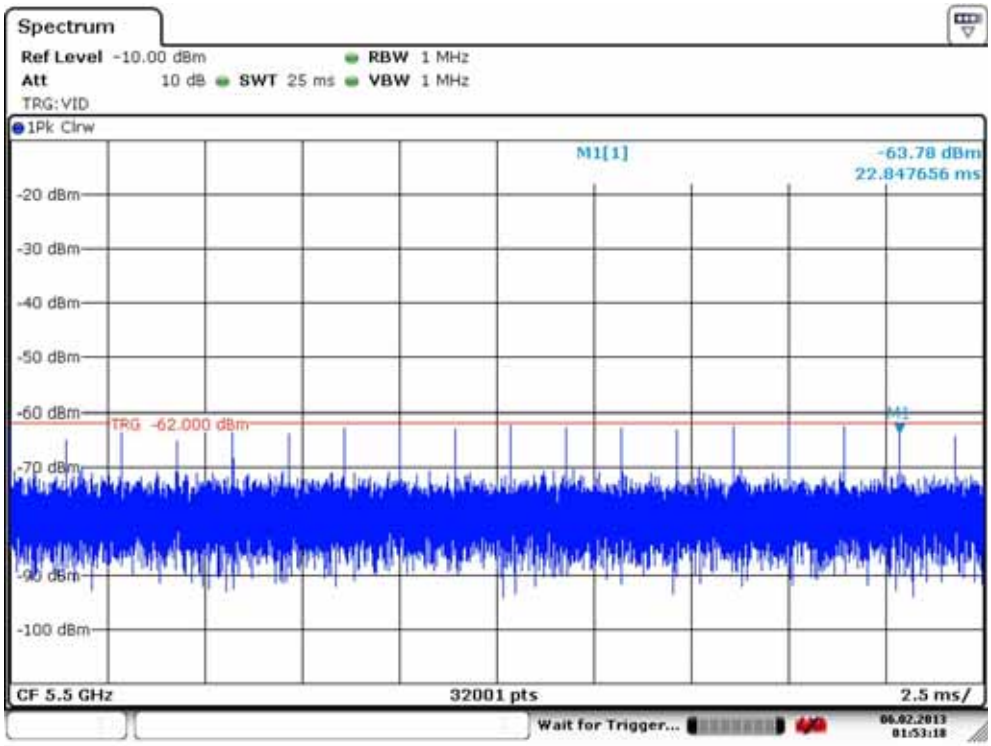
5500MHz



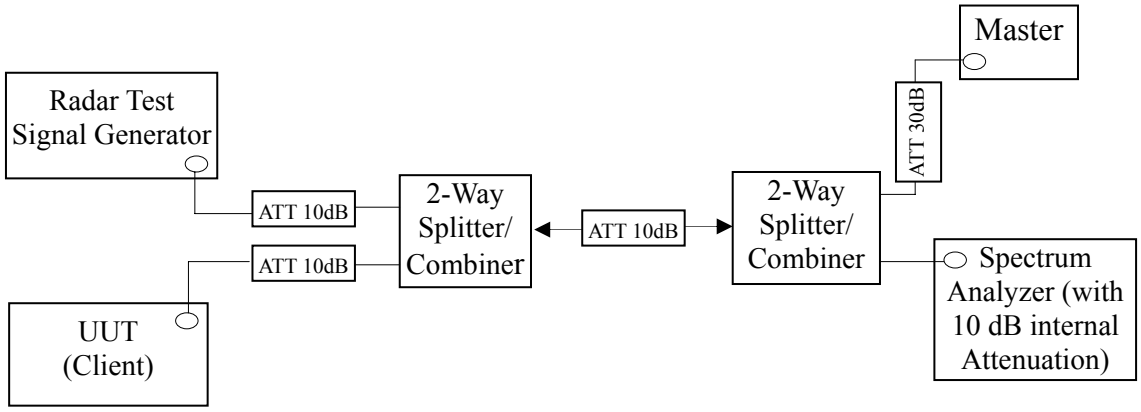
Date: 6.FEB.2013 01:53:18

6. TEST SETUP AND TEST RESULT

6.1. Test Setup

6.1.1. Test Setup Diagram

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

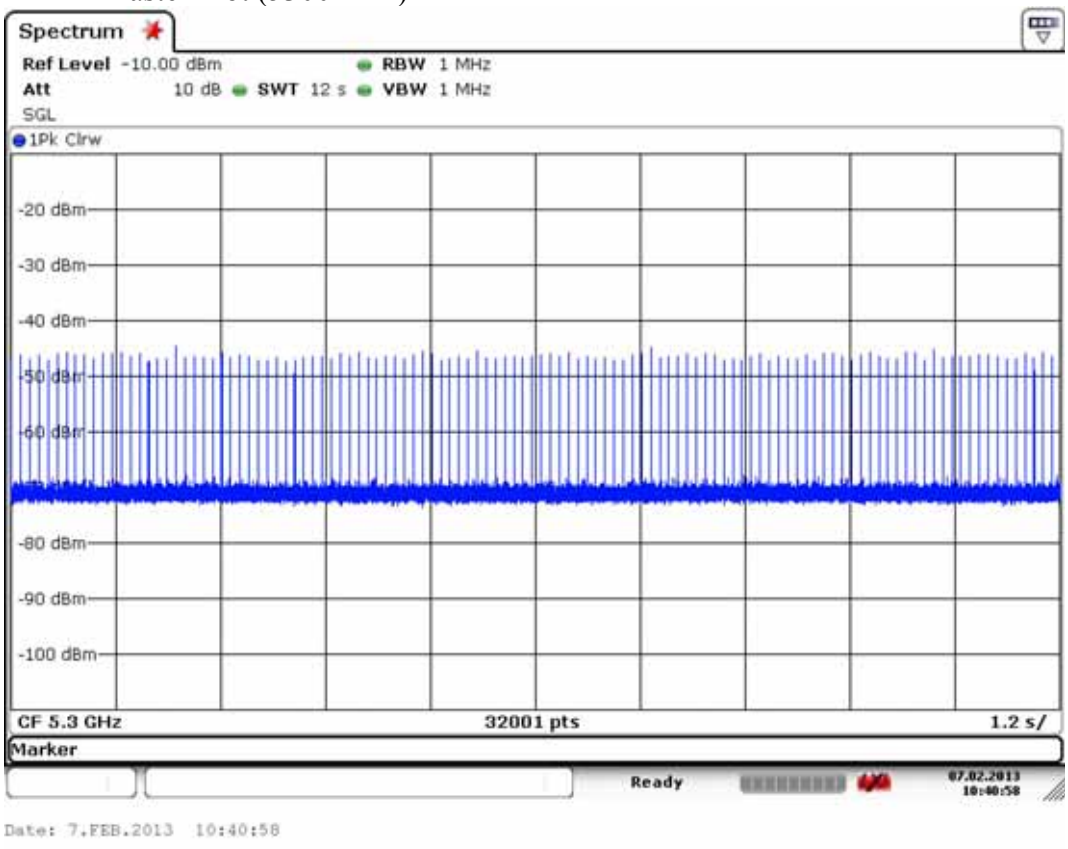


6.1.2. Test Setup Operation

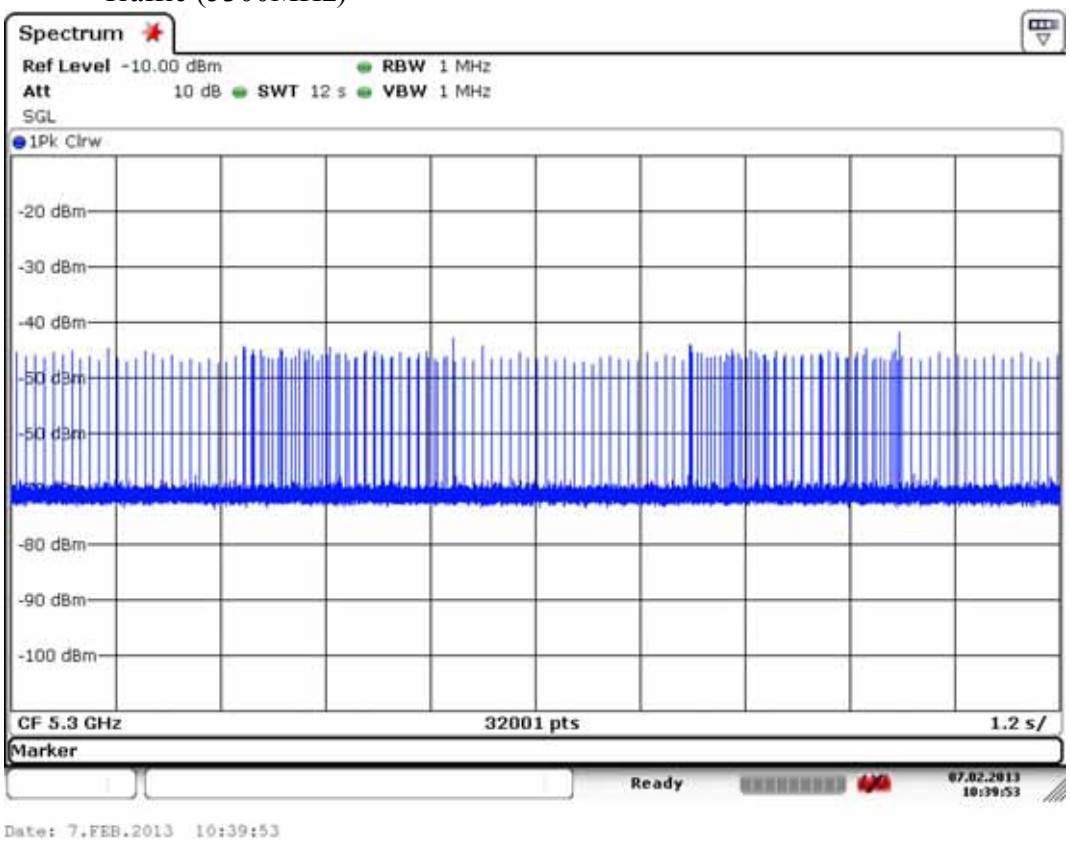
System testing was performed with the designated MPEG test file that streams full motion video from the Access Point to Client in full motion video mode using the media player with the V2.61 Codec package.
This file is used by IP and Frame based systems for loading the test channel during the in-service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

6.1.3. Test Setup for Data Traffic Plot

Master Plot (5300MHz)



Traffic (5300MHz)



6.2. Channel Move Time, Channel Closing Transmission Time, Non-Occupancy Period Measurement

6.2.1. 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	Minimum 30 minutes

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.

6.2.2. Test Procedures

6.2.2.1. 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.

6.2.2.2. 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.

6.2.2.3. 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.

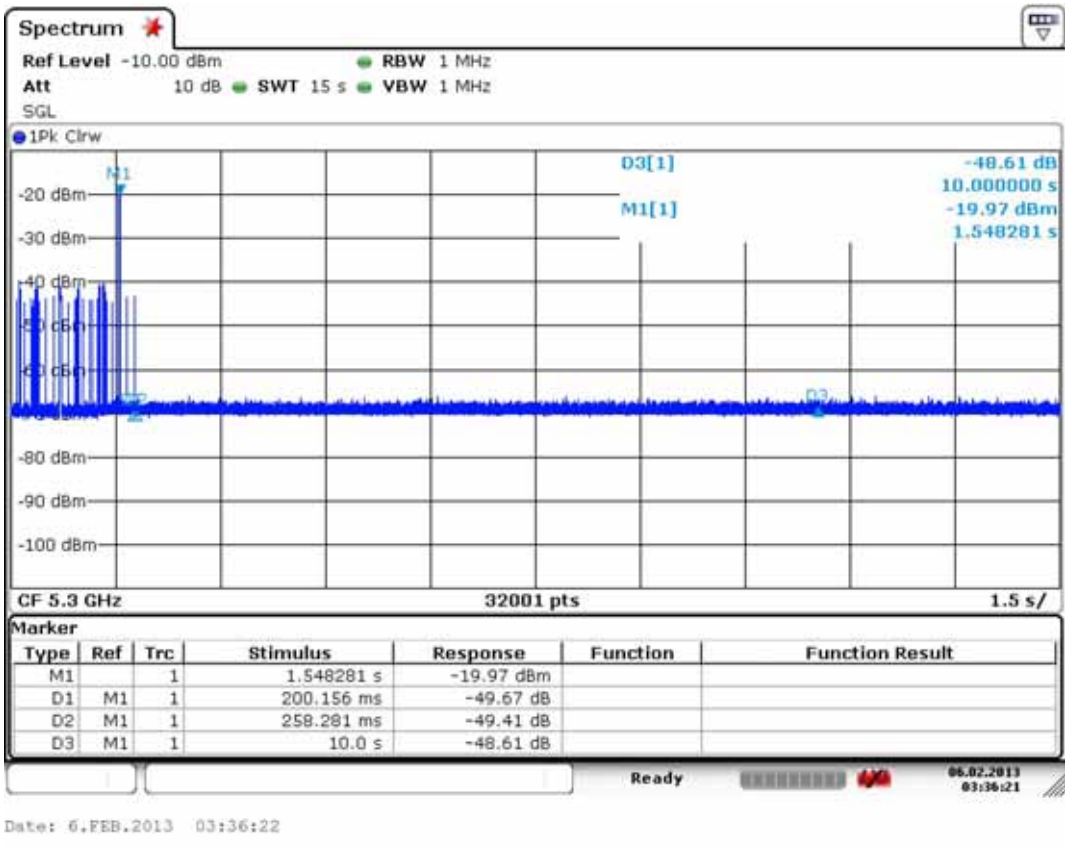
6.2.3. Test Result

Applicability of DFS Requirements During Normal Operation

6.2.3.1. Channel Closing Transmission Time & Channel Move Time **(PASS)**

Test Date:Feb. 06, 2013 Temperature:22℃ Humidity:54%

Test Mode: 5300MHz



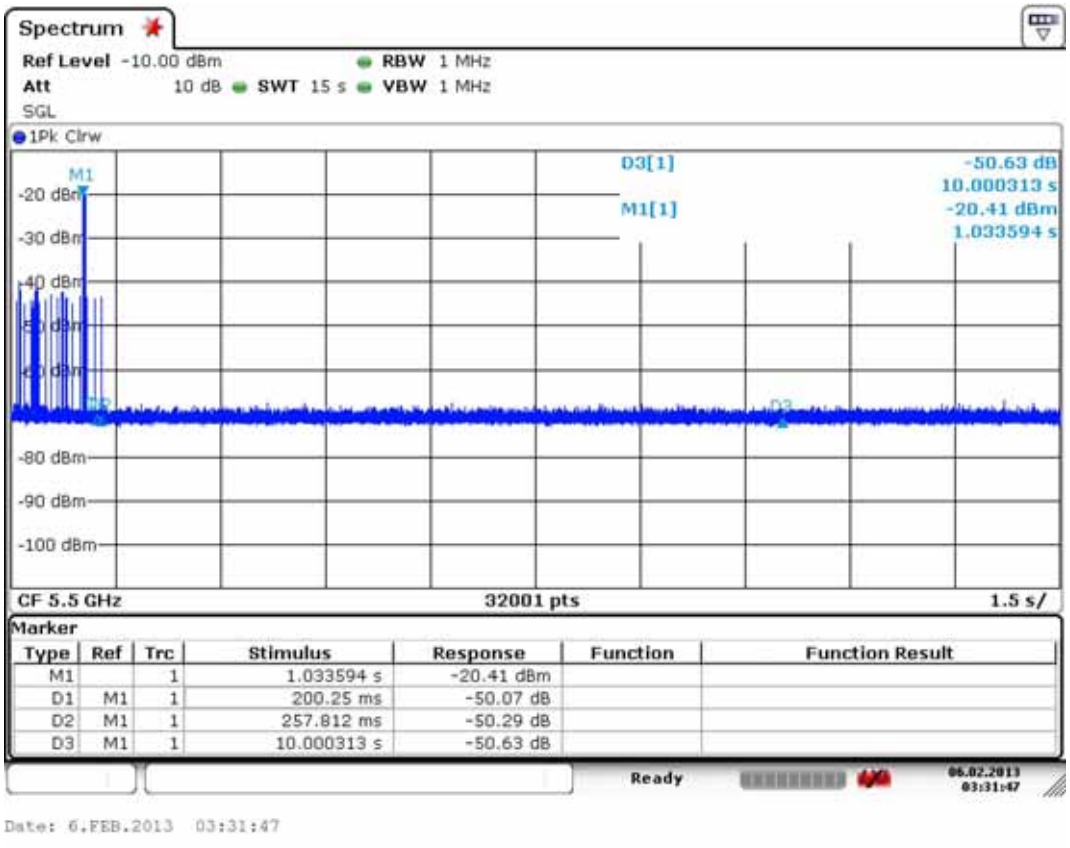
Channel Closing Transmission Time			
Test Channel	Test Frequency	Measured Value	Limit
60	5300MHz	<200 milliseconds +0.58281 milliseconds	<200 milliseconds +an aggregate of 60 milliseconds over remaining 10 second period

Channel Move Time			
Test Channel	Test Frequency	Measured Value	Limit
60	5300MHz	< 10seconds	10 Seconds

Notes:

M1: End of Radar Burst

Test Mode: 5500MHz



Channel Closing Transmission Time			
Test Channel	Test Frequency	Measured Value	Limit
100	5500MHz	<200 milliseconds +0.57812 milliseconds	<200 milliseconds +an aggregate of 60 milliseconds over remaining 10 second period

Channel Move Time			
Test Channel	Test Frequency	Measured Value	Limit
100	5500MHz	< 10seconds	10 Seconds

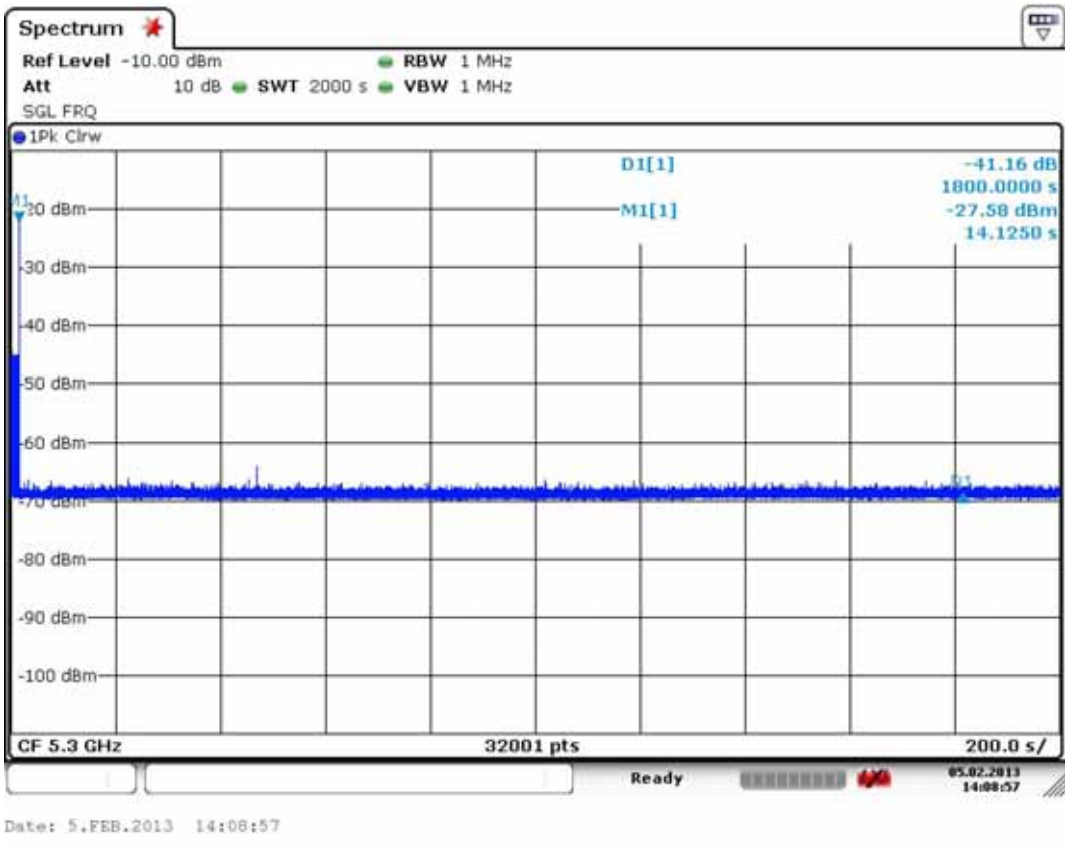
Notes:

M1: End of Radar Burst

6.2.3.2. Non-Occupancy Period **(PASS)**

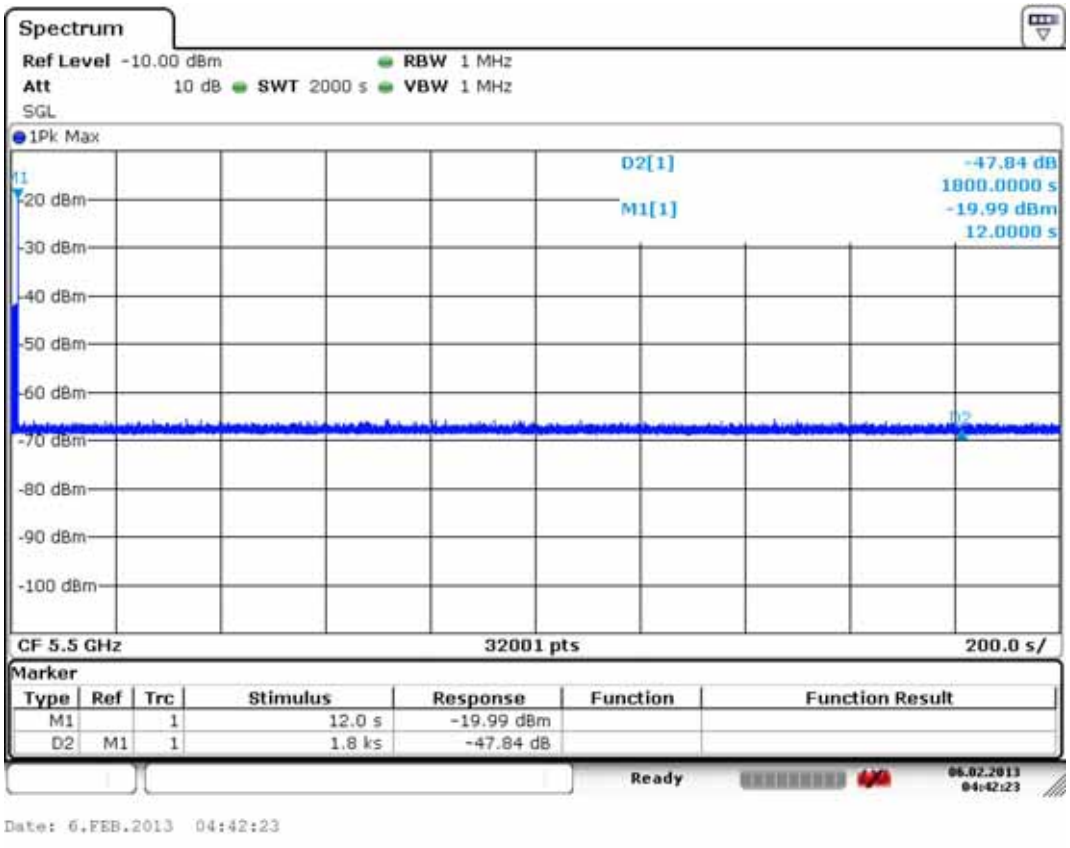
Test Date:Feb. 06, 2013 Temperature:22℃ Humidity:54%

Test Mode: 5300MHz



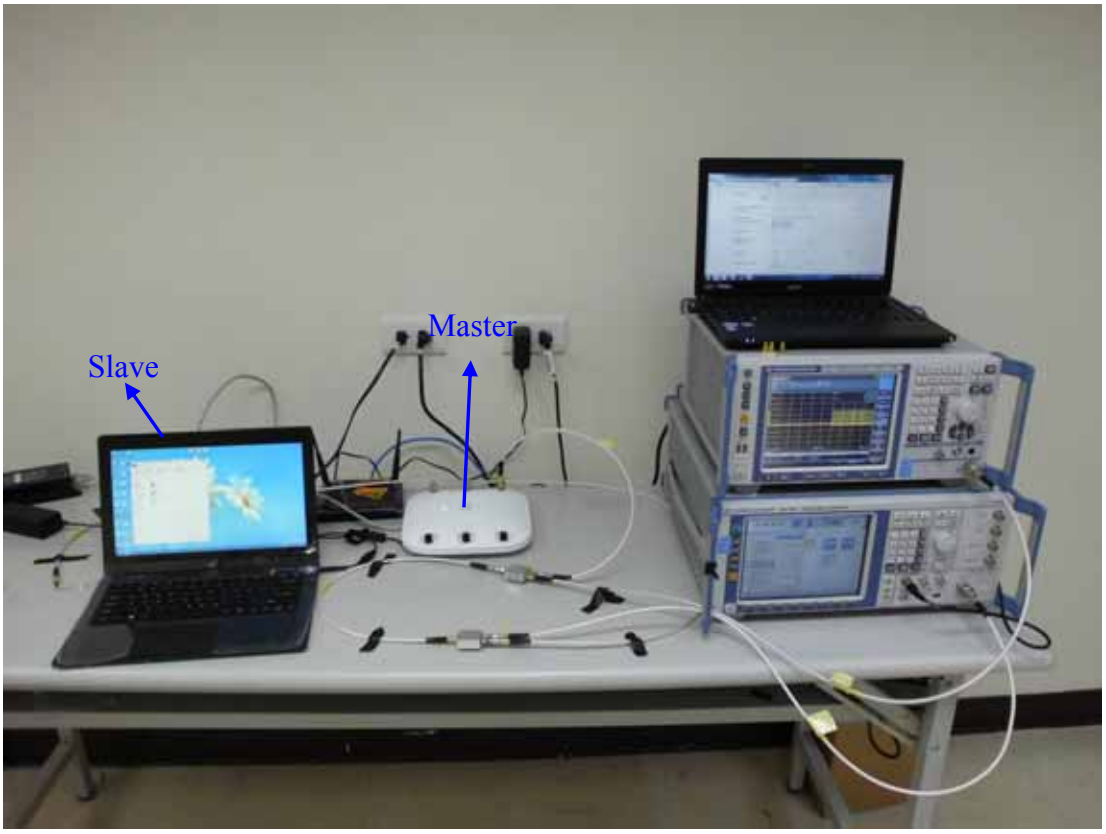
Test Channel	Test Frequency	Measured Value	Limit
60	5300MHz	<1800s	Minimum 30 minutes

Test Mode: 5500MHz



Test Channel	Test Frequency	Measured Value	Limit
100	5500MHz	<1800s	Minimum 30 minutes

7. PHOTOGRAPHS OF MEASUREMENT



Note：

1.EUT: Slave ; 2.Master: AP