



**Microsoft Corporation**  
**1514**

**DFS Report #: MCSO1636**



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – [www.nwemc.com](http://www.nwemc.com)

California – Minnesota – Oregon – New York – Washington

**Last Date of Test: October 31, 2012**  
**Microsoft Corporation**  
**Model: Model 1514**

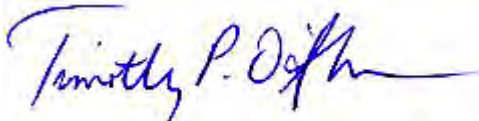
## Emissions

Test Description	Specification	Test Method	Pass/Fail
Client Device DFS Conformance Test	FCC 15.407:2012	FCC Order, ET Docket No.03-122 (FCC 06-96)	Pass
	EN 301 893 V1.6.1:2011	EN 301 893 V1.6.1:2011	Pass

## Deviations From Test Standards

None

### Approved By:



Tim O'Shea, Operations Manager



**NVLAP Lab Code: 200630-0**

### Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.  
 22975 NW Evergreen Parkway, Suite 400  
 Hillsboro, OR 97124

Phone: (503) 844-4066      Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-1).

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.*

*Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.*

Revision Number	Description	Date	Page Number
00	None		

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

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## Canada

**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

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## European Union

**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

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## Korea

**KCC / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

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## Japan

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

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## Taiwan

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

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## Singapore

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

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## Hong Kong

**OFTA** – Recognized by OFTA as a CAB for the acceptance of test data.

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## Vietnam

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

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## Russia

**GOST** – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

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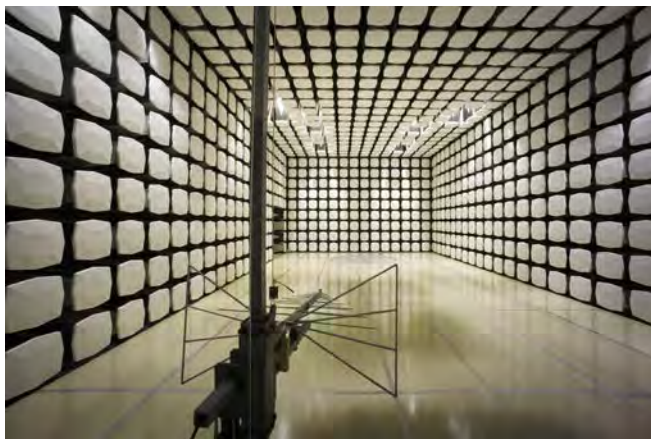
## SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



<b>Oregon</b> Labs EV01-EV12 22975 NW Evergreen Pkwy, #400 Hillsboro, OR 97124 (503) 844-4066	<b>California</b> Labs OC01-OC13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>New York</b> Labs WA01-WA04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	<b>Minnesota</b> Labs MN01-MN08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	<b>Washington</b> Labs SU01-SU07 14128 339 <sup>th</sup> Ave. SE Sultan, WA 98294 (360) 793-8675
<b>VCCI</b>				
A-0108	A-0029		A-0109	A-0110
<b>Industry Canada</b>				
2834D-1, 2834D-2	2834B-1, 2834B-2, 2834B-3		2834E-1	2834C-1





## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Microsoft Corporation
<b>Address:</b>	One Microsoft Way
<b>City, State, Zip:</b>	Redmond, WA 98052-6399
<b>Test Requested By:</b>	Mike Boucher
<b>Model:</b>	Model 1514
<b>First Date of Test:</b>	October 29, 2012
<b>Last Date of Test:</b>	October 31, 2012
<b>Receipt Date of Samples:</b>	October 29, 2012
<b>Equipment Design Stage:</b>	Preproduction
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT (Equipment Under Test):

A Handheld computing device with 802.11a/b/g/n 2x2 MIMO radio module operating in both 20 MHz and 40 MHz channel bandwidths. There are two integral antennas in the handheld computing device.

### Hardware, Firmware, and OS Versions:

Hardware version: DV1.OR-BB02N  
 Firmware version: 14.1.11159.1  
 OS versions: Windows 8 9200.20121016

### The operating frequency band(s) of the equipment.

2400 - 2483.5 MHz  
 5150 - 5250 MHz  
 5250 - 5350 MHz (DFS Band)  
 5470 - 5600 MHz (DFS Band)  
 5650 - 5725 MHz (DFS Band)  
 5725 - 5825 MHz

### The operating modes (Master and/or Client) of the U-NII device.

Client device with no radar detection and no ad-hoc capability

### For Client devices, indicate whether or not it has DFS capabilities and indicate the FCC (and IC) identifier for the Master U-NII Device that is used with it for DFS testing.

The client device has no radar detection and no ad-hoc capability. A DFS-compliant Master device was used for testing. It's the CISCO Model AIR-AP1252AG-A-K9, FCC ID:LDK102061, IC: 2461B-102061

### List the highest and the lowest possible power level (equivalent isotropic radiated power (EIRP) of the equipment.

The maximum EIRP of the 5 GHz equipment is 18.5 dBm.

**Test sequences or messages that should be used for communication between Master and Client Devices, which are used for loading the Channel.**

1. Stream the test file from the Master Device to the Client Device for IP based systems or frame based systems which dynamically allocate the talk/listen ratio.
2. For frame based systems with fixed talk/listen ratio, set the ratio to 45%/55% and stream the test file from the Master to the Client.
3. For other system architectures, supply appropriate Channel loading methodology.

Per Section 7.7 of the FCC's DFS Procedure, testing was performed using the specified NTIA MPEG file. It streamed full motion video at 30 frames per second from the Master to the Client IP-based system.

**Transmit Power Control description.**

This device does not exceed 27dBm EIRP, so no transmit power control is implemented.

**System architectures, data rates, U-NII Channel bandwidths.**

1. Indicate the type(s) of system architecture (e.g. IP based or Frame based) that the U-NII device employs. Each type of unique architecture must be tested.

The client device (EUT) employs IP based system architecture.

**The time required for the Master Device and/or Client Device to complete its power-on cycle.**

The Master device used in the test system requires 1.44 minutes to complete its power-on cycle. The client device (EUT) does not have radar detection, so its power-on time is not applicable, but was measured to be 25 seconds.

**Manufacturer statement confirming that information regarding the parameters of the detected Radar Waveforms is not available to the end user.**

The client device (EUT) does not have radar detection, so the parameters of the Radar Waveforms are not available to the end user.

**Uniform Channel Spreading requirement for Master Devices. For Master Devices, indicate how the master provides, on aggregate, uniform Channel loading of the spectrum across all Channels.**

The client device (EUT) does not have radar detection, so this requirement is not applicable.

**List all antenna assemblies and their corresponding gains.**

1. If radiated tests are to be performed, the U-NII Device should be tested with the lowest gain antenna assembly (regardless of antenna type). The report should indicate which antenna assembly was used for the tests. For devices with adjustable output power, list the output power range and the maximum EIRP for each antenna assembly.
2. If conducted tests are to be performed, indicate which antenna port/connection was used for the tests and the antenna assembly gain that was used to set the DFS Detection Threshold level during calibration of the test setup.
  - a. Indicate the calibrated conducted DFS Detection Threshold level.
  - b. For devices with adjustable output power, list the output power range and the maximum EIRP for each antenna assembly.
  - c. Indicate the antenna connector impedance. Ensure that the measurement instruments match (usually 50 Ohms) or use a minimum loss pad and take into account the conversion loss.
3. Antenna gain measurement verification for tested antenna.
  - a. Describe procedure
  - b. Describe the antenna configuration and how it is mounted
  - c. If an antenna cable is supplied with the device, cable loss needs to be taken into account. Indicate the maximum cable length and either measure the gain with this cable or adjust the measured gain accordingly. State the cable loss.

The client device (EUT) has two 50 ohm antenna ports. A conducted DFS test was performed on each antenna port at both 20 MHz and 40 MHz channel bandwidths.

The antenna gain of the client device was measured by Microsoft. The maximum gain in the 5 GHz bands is 6 dBi. The antenna gain values were obtained with the antennas installed in the handheld computing device. Testing was performed in a Satimo SG64 chamber which records full 3D antenna patterns.

The power levels to the antenna are measured at the antenna feed, so there is no additional loss to consider between the RF power output and the antenna input.

The calibrated conducted DFS detection threshold was set to -63 dBm at the antenna port of the Master. This is equal to the DFS Detection Threshold of the Master + 1 dB.



**Applicability of DFS Requirements Prior to Use of a Channel**

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

**Applicability of DFS requirements during normal operation**

Requirement	Operational Mode		
	Master	Client (without DFS)	Client (with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

**DFS Response Requirement Values**

Parameter	Value
Non-occupancy	Minimum 30 minutes
Channel Availability Check Time	60 seconds
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).
U-NII Detection Bandwidth	Minimum 80% of the UNII 99% transmission power bandwidth. (See Note 3).

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

- For the Short Pulse Radar Test Signals this instant is the end of the Burst.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
- 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.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

**DFS Detection Thresholds for Master or Client Devices Incorporating DFS**

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

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.

**Short Pulse Radar Test Waveforms**

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	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

**Long Pulse Radar Test Waveforms**

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

**Frequency Hopping Radar Test Waveform**

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

## Configuration MCSO1636- 1

Software/Firmware Running during test	
Description	Version
Windows 8	9200.20121016
Windows Media Player Classic	6.4.8.6
Test File.mpeg	none

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld computing device	Microsoft	1514	000029324053

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	Microsoft	PA-1240-06MX	021033422239
USB Mouse	Lenovo	MOEUJO	44R4351

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
WLAN Master Access Point	Cisco	AIR-LAP1252G-A-K9	FTX123590JT

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Mouse	PA	1.8m	PA	USB Mouse	Handheld computing device
DC Power	PA	1.5m	PA	AC Adapter	Handheld computing device
AC Power	PA	0.5m	PA	AC Adapter	AC Mains

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	10/31/2012	DFS	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled Testing was completed.

## Client Device DFS Conformance Test

For a Client Device without DFS, the Channel Move Time and Channel Closing Transmission Time requirements are verified with one Short Pulse Radar.

**Channel Closing Transmission Time:** The total duration of transmissions, consisting of data signals and the aggregate of control signals, by a U-NII device during the Channel Move Time.

**Channel Move Time:** The time to cease all transmissions on the current Channel upon detection of a Radar Waveform above the DFS Detection Threshold. A Client Device will not transmit before having received appropriate control signals from a Master Device.

A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

### DFS Detection Thresholds for Master or Client Devices Incorporating DFS

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

### DFS Response Requirement Value

Parameter	Value
<i>Non-occupancy period</i>	Minimum 30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds See Note 1.
<i>Channel Closing Transmission Time</i>	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.

### Setting the Test Signal Level

The radar test signal level is set at the Master Device, or the Client Device with In-Service Monitoring, as appropriate for the particular test. This device is known as the Radar Detection Device (RDD).

- When a Client Device without In-Service Monitoring is the UUT, the Master Device is the RDD.
- When a Client Device with In-Service Monitoring is the UUT, and is tested for response to the Master Device detections, the Master Device is the RDD.
- When a Client Device with In-Service Monitoring is the UUT, and is tested for independent response to detections by the Client Device, the Client Device is the RDD.

A spectrum analyzer is used to establish the test signal level for each radar type. During this process, there are no transmissions by either the Master Device or Client Device. The spectrum analyzer is switched to the zero span (time domain) mode at the frequency of the Radar Waveform generator. The peak detector function of the spectrum analyzer is utilized.

The signal generator amplitude and/or step attenuators are set so that the power level measured at the spectrum analyzer is equal to the DFS Detection Threshold that is required for the tests. The signal generator and attenuator settings are recorded for use during the test.

# Client Device DFS Conformance Test

## DFS MONITORING

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System testing will be performed with the designated MPEG test file that streams full motion video at 30 frames per second for Channel loading. If the designated MPEG test file is not utilized then an equivalent test file will be used, subject to FCC approval.

## CHANNEL LOADING

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System testing will be performed with the designated MPEG test file that streams full motion video at 30 frames per second for Channel loading. If the designated MPEG test file is not utilized then an equivalent test file will be used, subject to FCC approval.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440	AFE	1/23/2012	12
RF Vector Signal Generator	Agilent	V2920A	TIH	NCR	0
SMA Power Divider	S.M. Electronics	MP0208-2	none	NCR	0
SMA Power Divider	S.M. Electronics	MP0208-2	none	NCR	0
Step Attenuator	Aeroflex / Weinschel	3053	26835	NCR	0
Step Attenuator	Aeroflex / Weinschel	3053	26834	NCR	0

## TEST DESCRIPTION

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The tests in this section are run sequentially and the UUT must pass all tests successfully. If the UUT fails any one of the tests it will count as a failure of compliance. To show compliance, all tests must be performed with waveforms randomly generated as specified with test results meeting the required percentage of successful detection criteria. All test results must be reported to the FCC. One frequency will be chosen from the operating Channels of the UUT within the 5.25-5.35 GHz and 5.47-5.725 GHz bands.





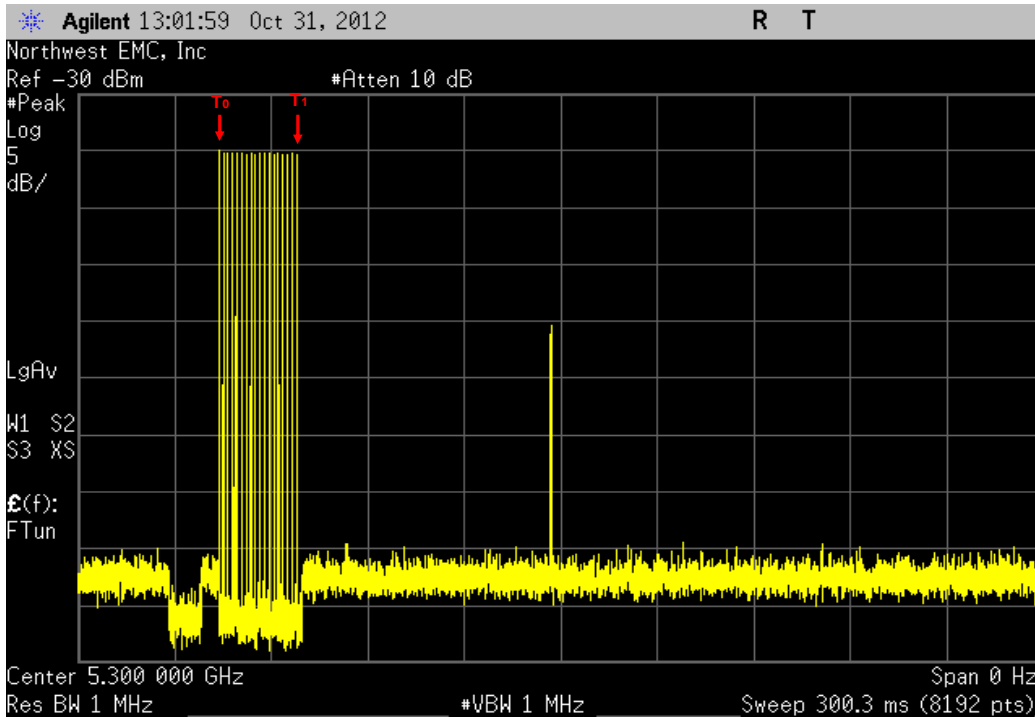
# DFS CHANNEL SHUTDOWN, MOVE, NON-OCCUPANCY

XMit 2012.09.20

EUT: 1514		Work Order: MCSO1636
Serial Number: 000029324053		Date: 10/31/12
Customer: Microsoft Corporation		Temperature: 24°C
Attendees: None		Humidity: 52%
Project: None		Barometric Pres.: 1004.9
Tested by: Rod Peloquin		Power: 120VAC/60Hz
		Job Site: EV06
TEST SPECIFICATIONS		Test Method
FCC 15.407:2012		FCC Order, ET Docket No.03-122 (FCC 06-96)
COMMENTS		
Streaming TIA required mpeg file. Antenna B is only used for 802.11(n) 2 stream.		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	1	<i>Rod Peloquin</i> Signature
		Value Limit Result
Antenna A		
802.11(a)		
Lower Sub-Band 5250 MHz - 5350 MHz, Channel 60		
300 ms period 25.7 ms N/A N/A		
1.2s period 60.7 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		
Upper Sub-Band 5470 MHz - 5725 MHz, Channel 140		
300 ms period 25.7 ms N/A N/A		
1.2s period 139.9 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		
802.11(n) 40 MHz		
Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired)		
300 ms period 25.7 ms N/A N/A		
1.2s period 35.8 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		
Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired)		
300 ms period 25.7 ms N/A N/A		
1.2s period 42.4 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		
Antenna B		
802.11(n) 40 MHz		
Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired)		
300 ms period 25.7 ms N/A N/A		
1.2s period 2 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		
Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired)		
300 ms period 25.7 ms N/A N/A		
1.2s period 25.2 ms ≤ 260 ms Pass		
12.5s period < 1 s ≤ 10 s Pass		
30 minute period > 30 minutes ≥ 30 minutes Pass		

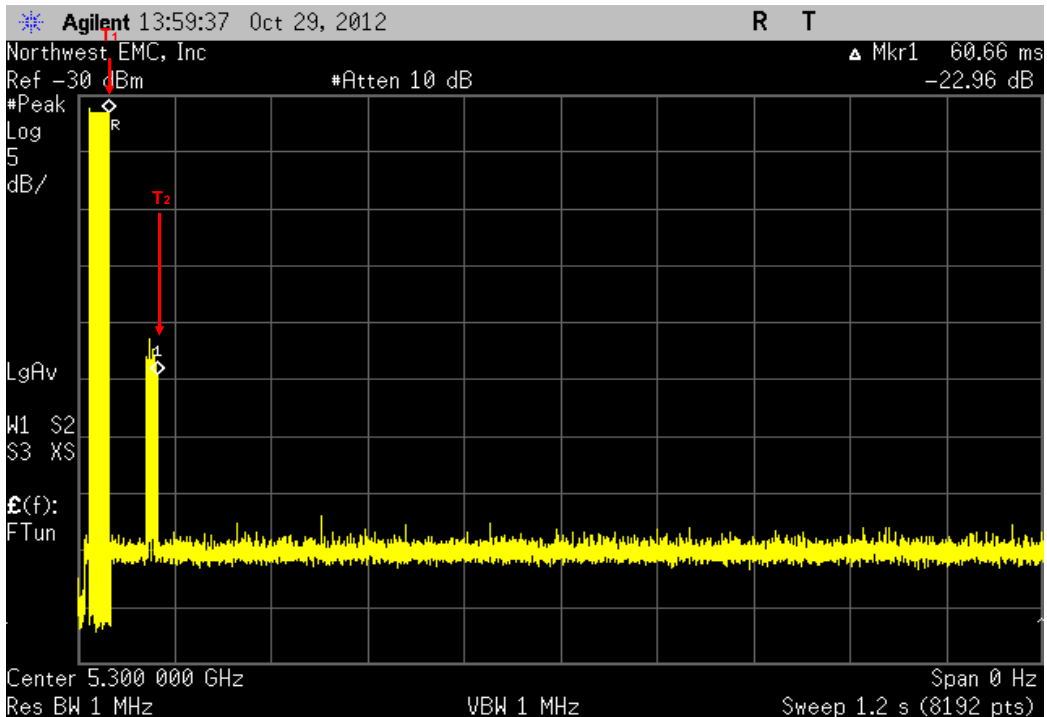
Antenna A, 802.11(a), Lower Sub-Band 5250 MHz - 5350 MHz, Channel 60, 300 ms period

Value	Limit	Result
25.7 ms	N/A	N/A

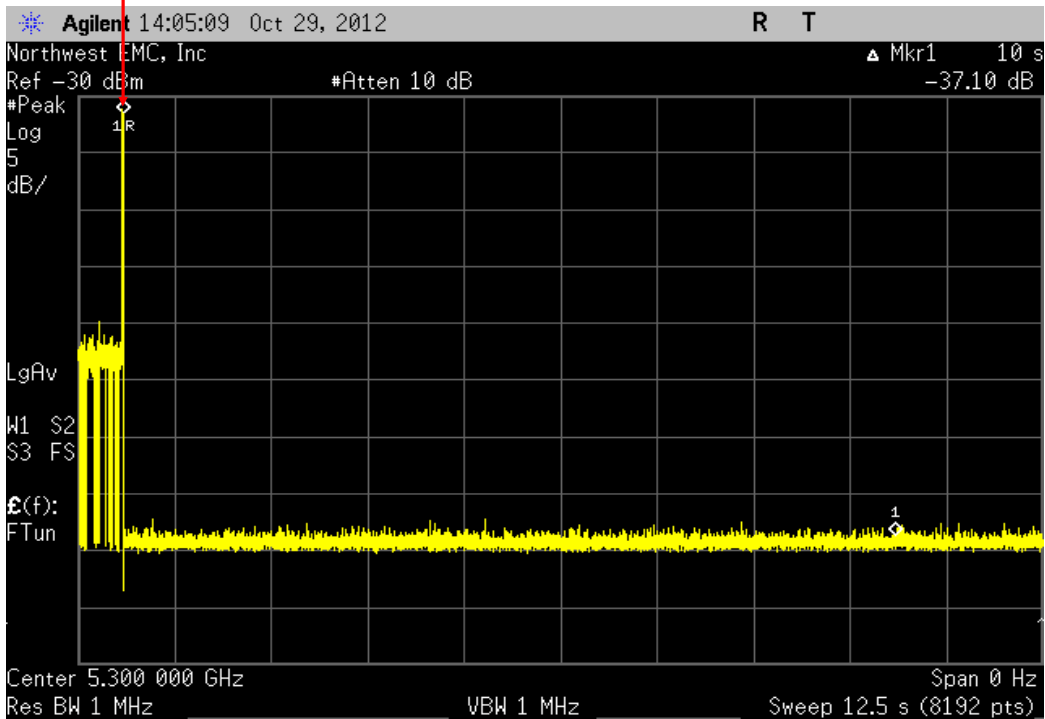


Antenna A, 802.11(a), Lower Sub-Band 5250 MHz - 5350 MHz, Channel 60, 1.2s period

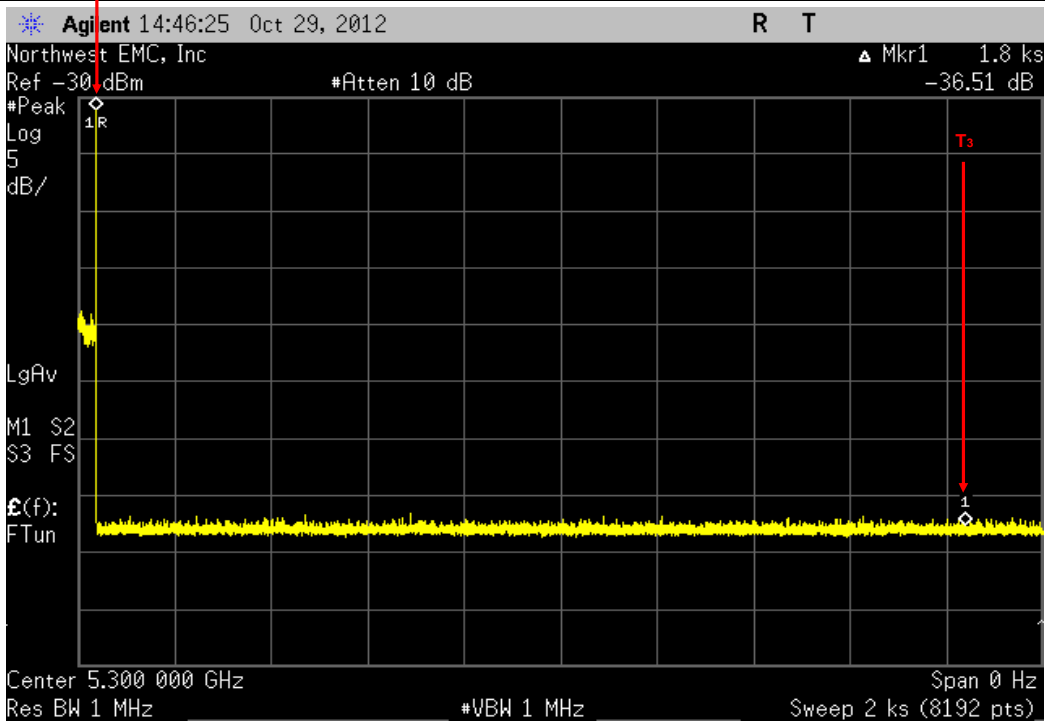
Value	Limit	Result
60.7 ms	≤ 260 ms	Pass



Antenna A, 802.11(a), Lower Sub-Band 5250 MHz - 5350 MHz, Channel 60, 12.5s period			
	Value	Limit	Result
T <sub>1</sub> /T <sub>2</sub>	< 1 s	≤ 10 s	Pass

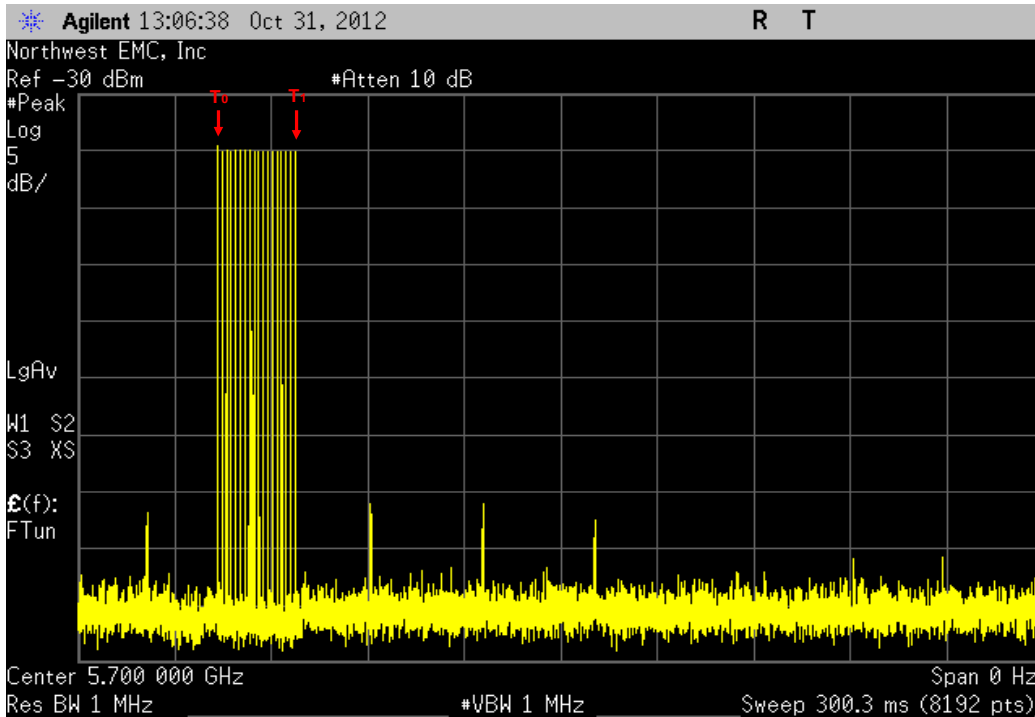


Antenna A, 802.11(a), Lower Sub-Band 5250 MHz - 5350 MHz, Channel 60, 30 minute period			
	Value	Limit	Result
T <sub>2</sub>	> 30 minutes	≥ 30 minutes	Pass



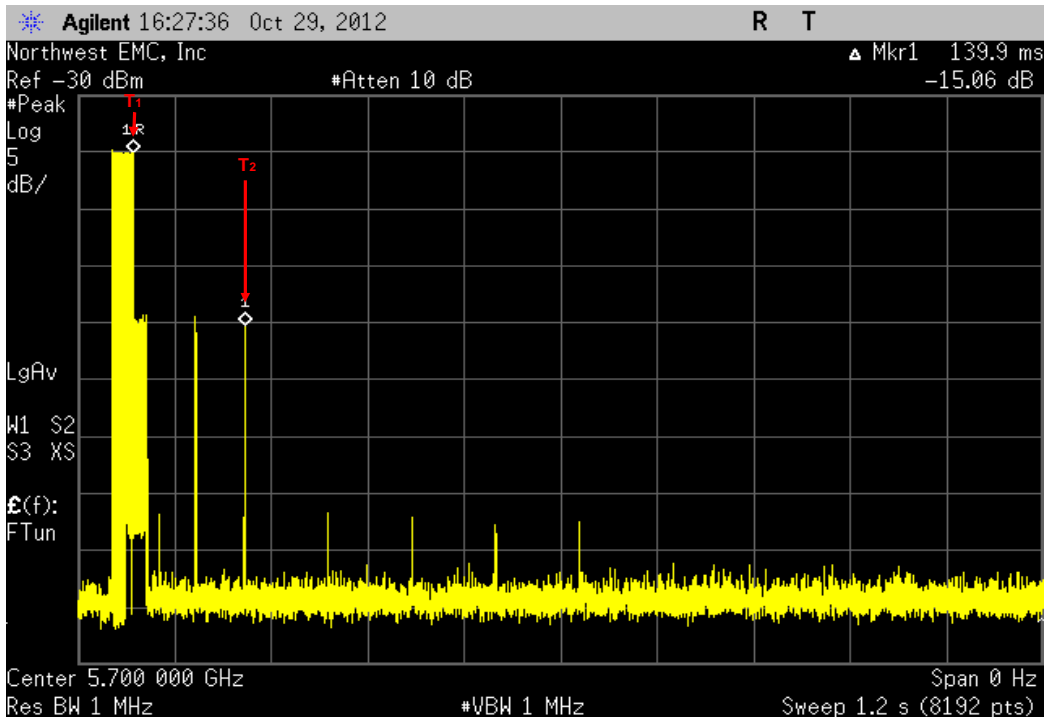
Antenna A, 802.11(a), Upper Sub-Band 5470 MHz - 5725 MHz, Channel 140, 300 ms period

Value	Limit	Result
25.7 ms	N/A	N/A

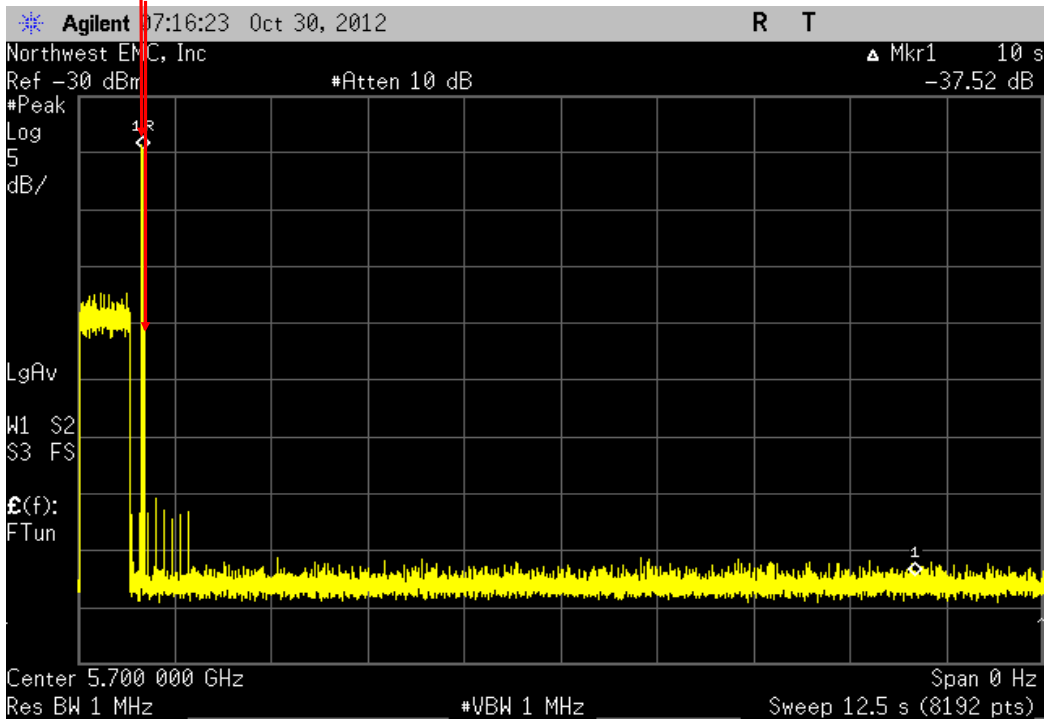


Antenna A, 802.11(a), Upper Sub-Band 5470 MHz - 5725 MHz, Channel 140, 1.2s period

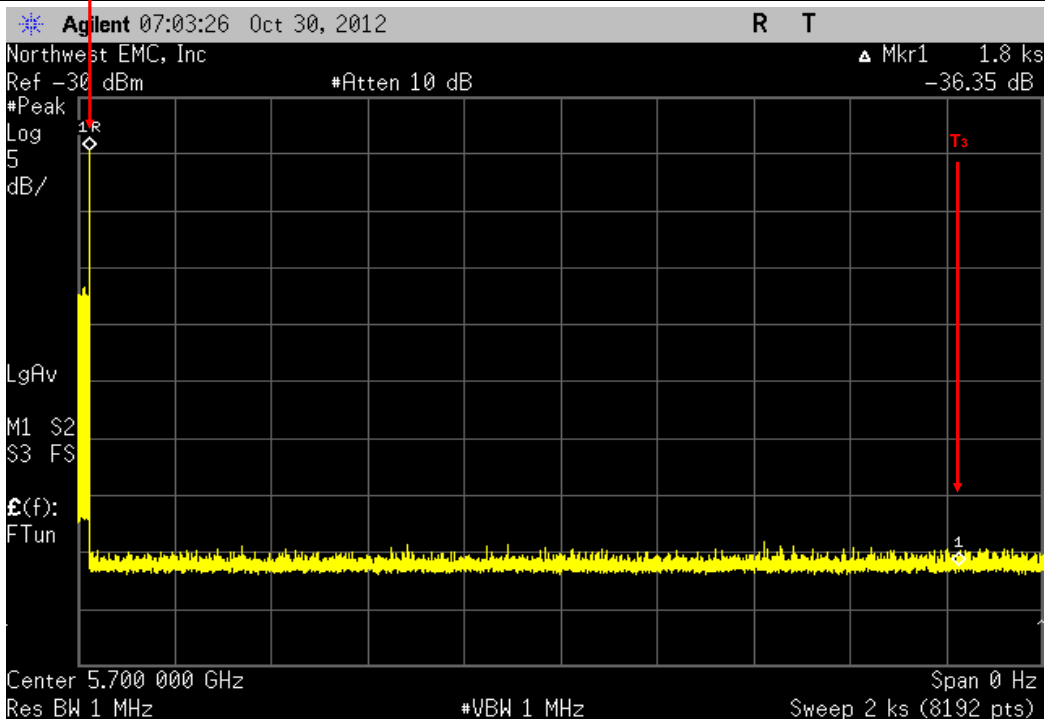
Value	Limit	Result
139.9 ms	≤ 260 ms	Pass



Antenna A, 802.11(a), Upper Sub-Band 5470 MHz - 5725 MHz, Channel 140, 12.5s period			
	Value	Limit	Result
T1 T2	< 1 s	≤ 10 s	Pass

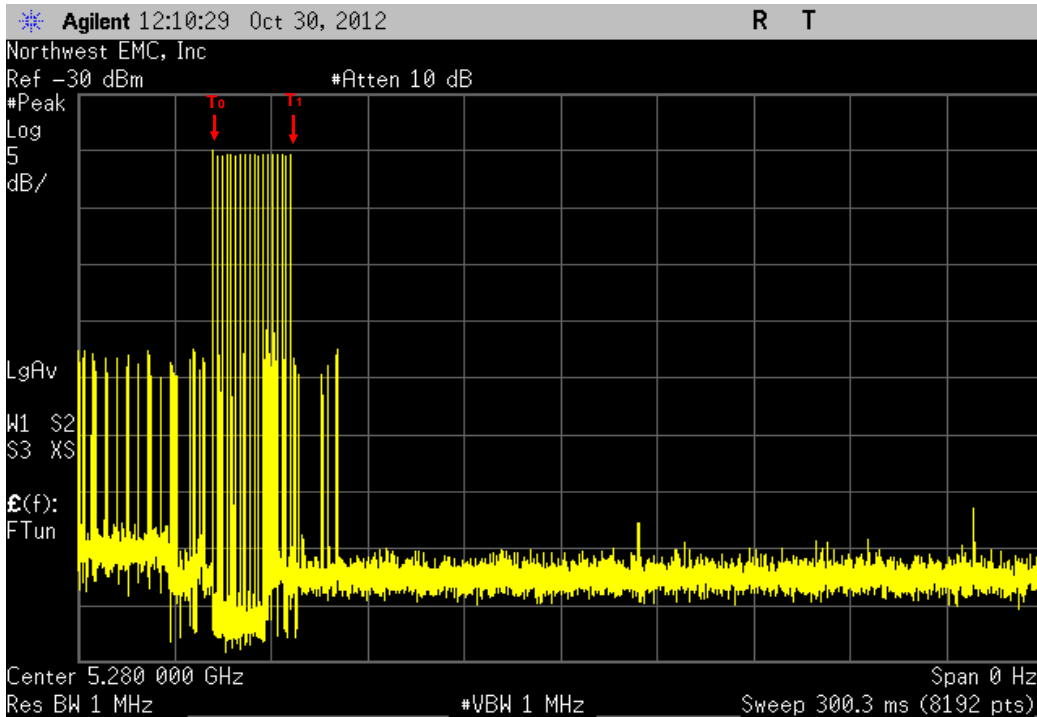


Antenna A, 802.11(a), Upper Sub-Band 5470 MHz - 5725 MHz, Channel 140, 30 minute period			
	Value	Limit	Result
T2	> 30 minutes	≥ 30 minutes	Pass



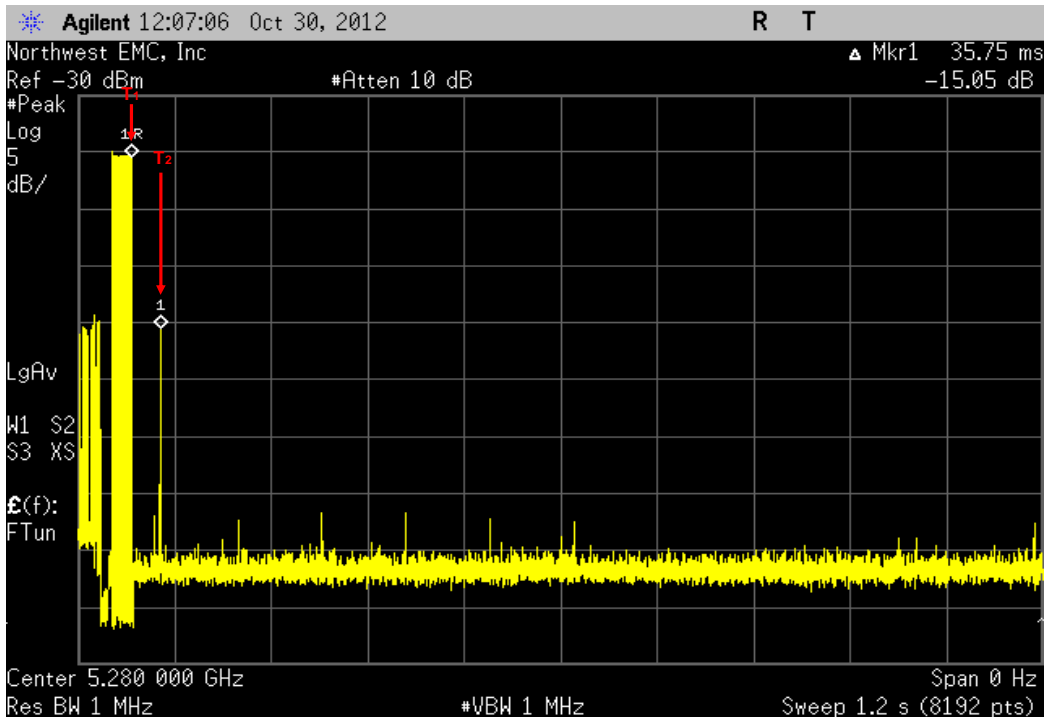
Antenna A, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 300 ms period

Value	Limit	Result
25.7 ms	N/A	N/A



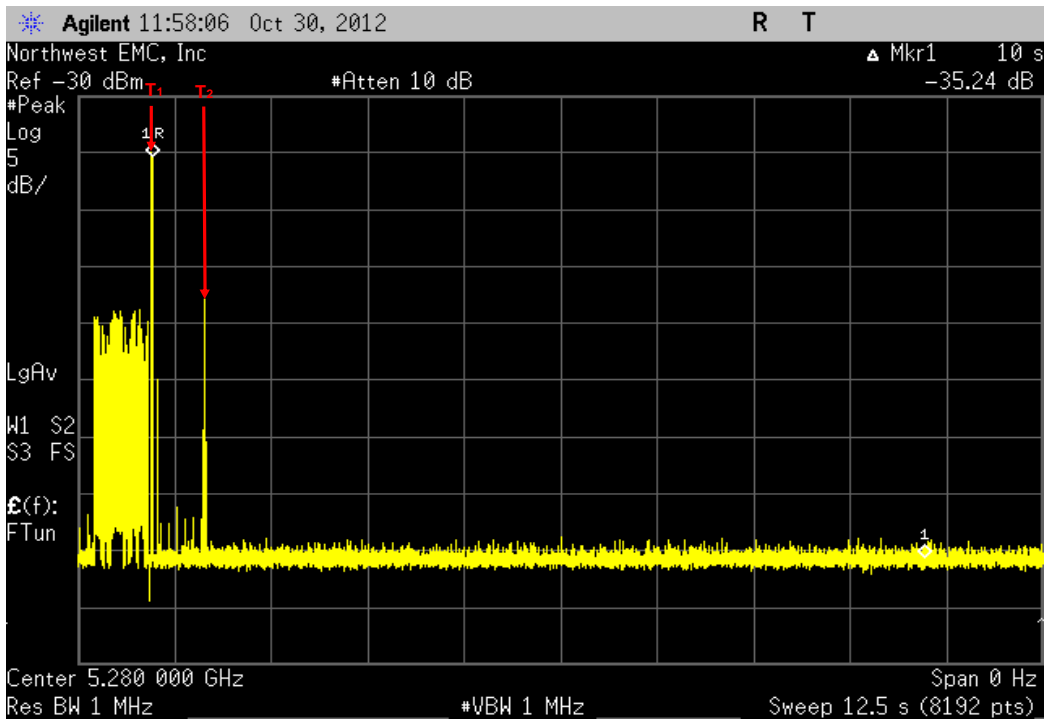
Antenna A, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 1.2s period

Value	Limit	Result
35.8 ms	≤ 260 ms	Pass

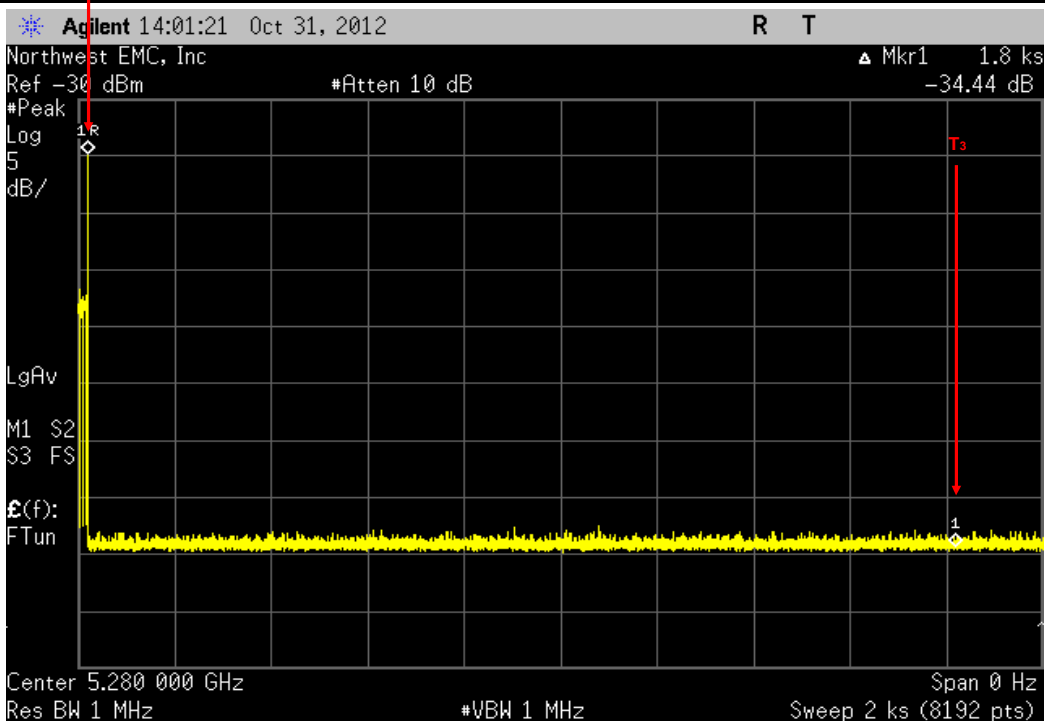




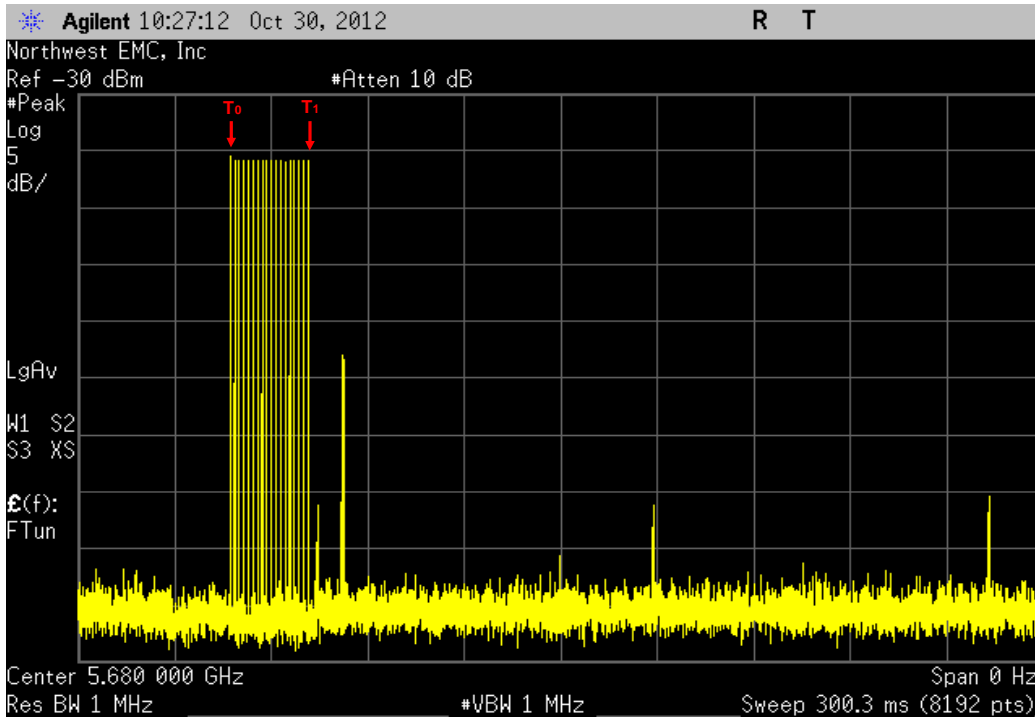
Antenna A, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 12.5s period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	< 1 s	≤ 10 s	Pass



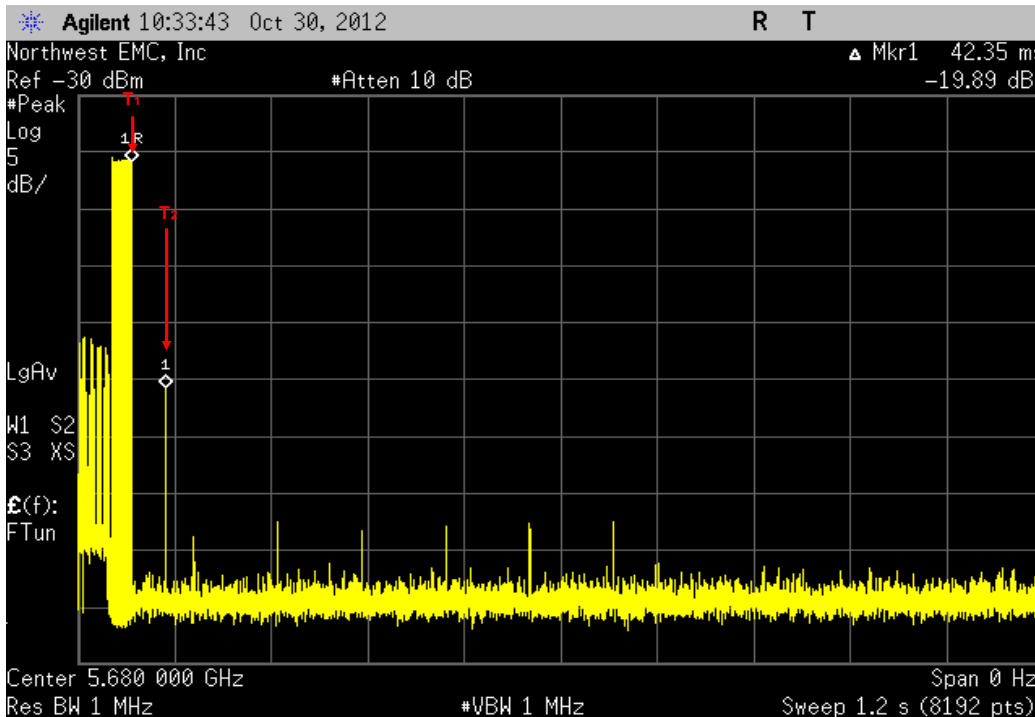
Antenna A, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 30 minute period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	> 30 minutes	≥ 30 minutes	Pass



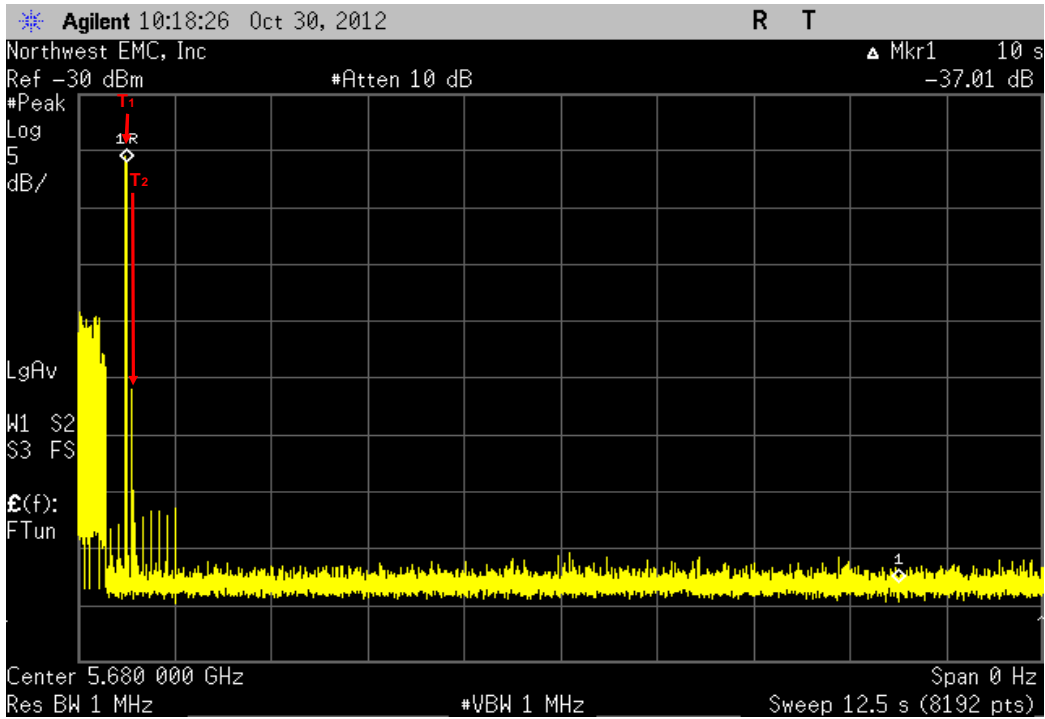
Antenna A, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 300 ms period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	25.7 ms	N/A	N/A



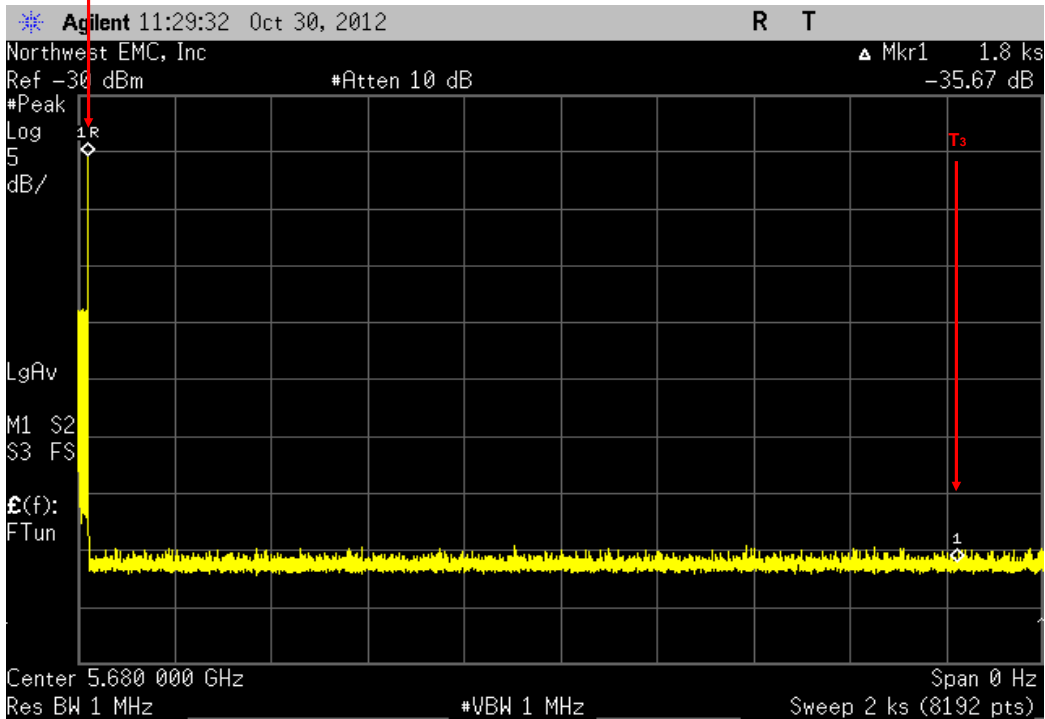
Antenna A, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 1.2s period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	42.4 ms	≤ 260 ms	Pass



Antenna A, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 12.5s period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	< 1 s	≤ 10 s	Pass

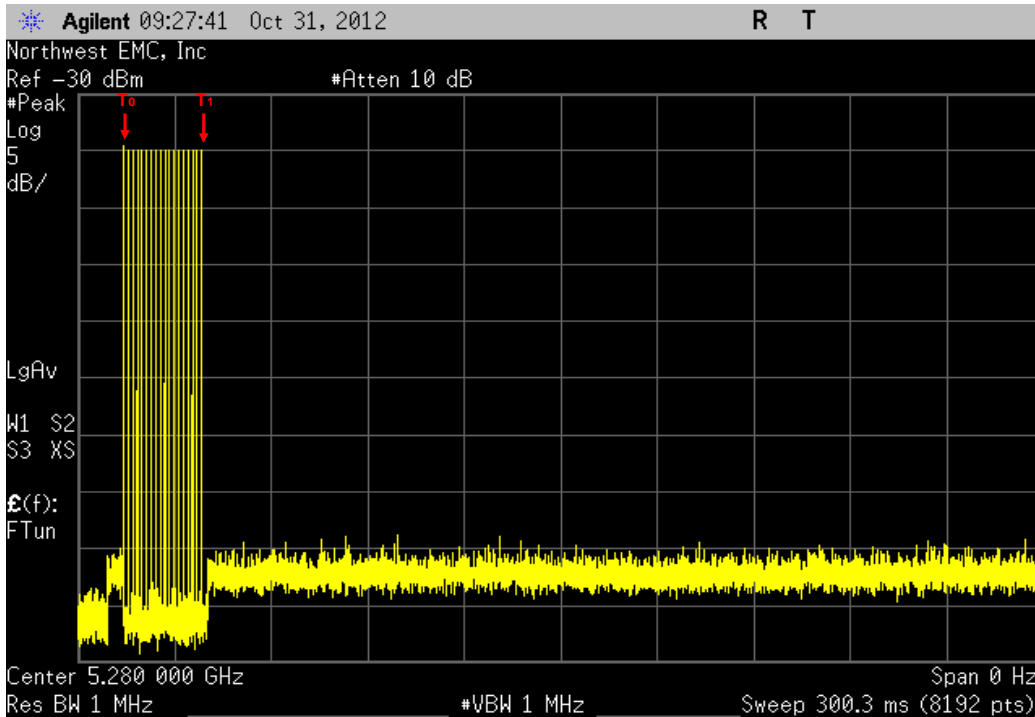


Antenna A, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 30 minute period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	> 30 minutes	≥ 30 minutes	Pass



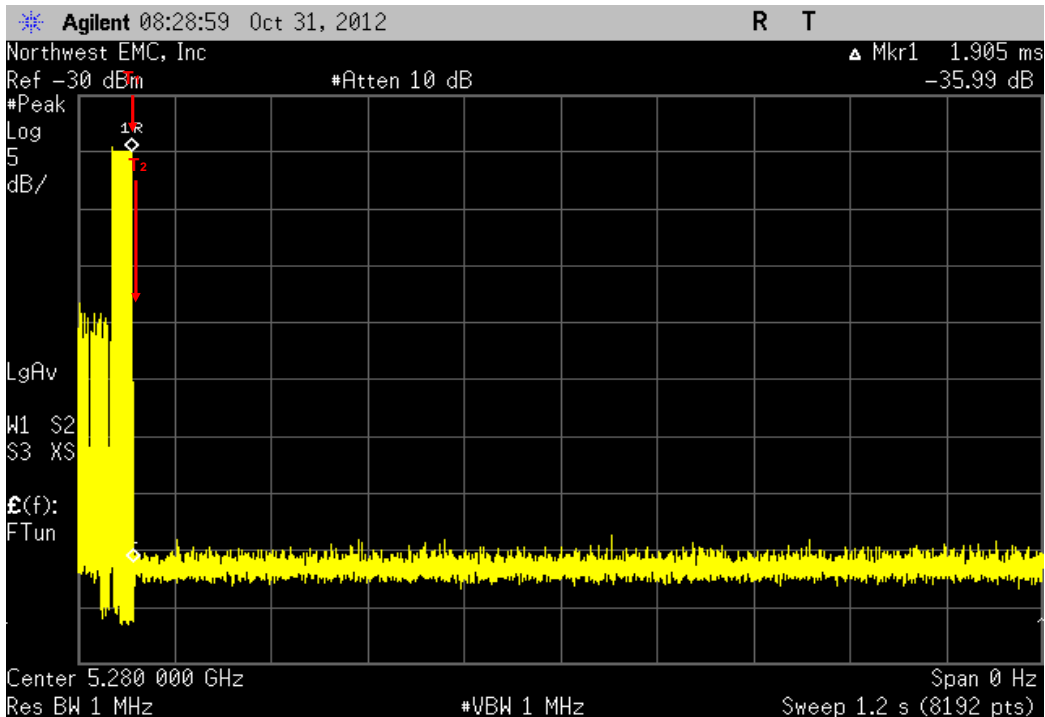
Antenna B, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 300 ms period

Value	Limit	Result
25.7 ms	N/A	N/A

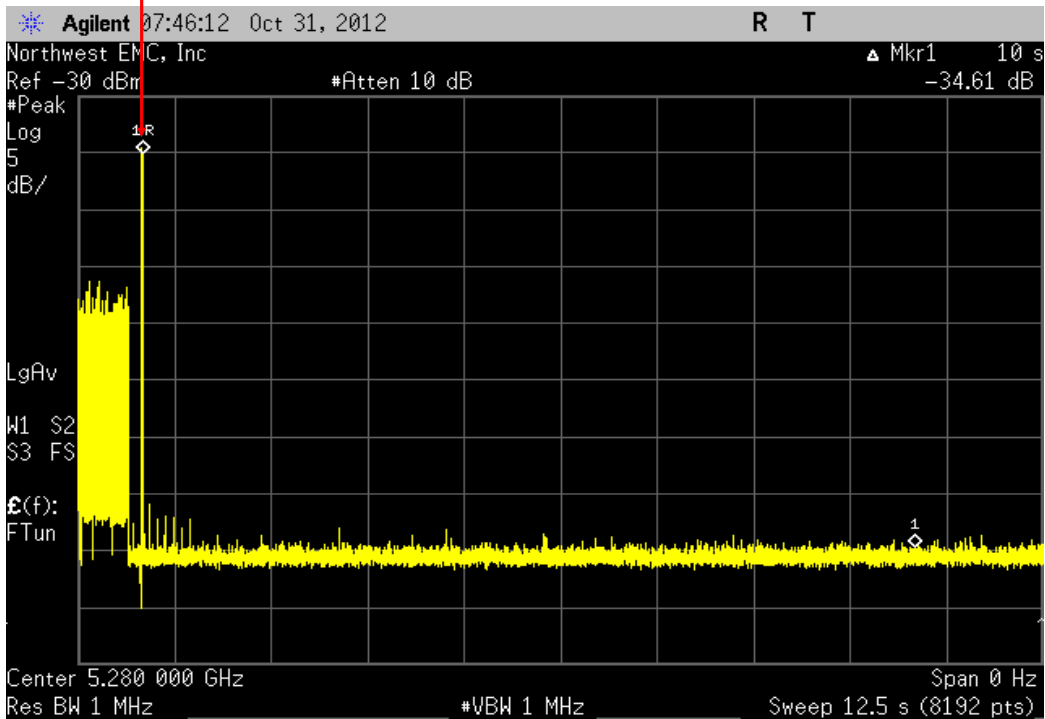


Antenna B, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 1.2s period

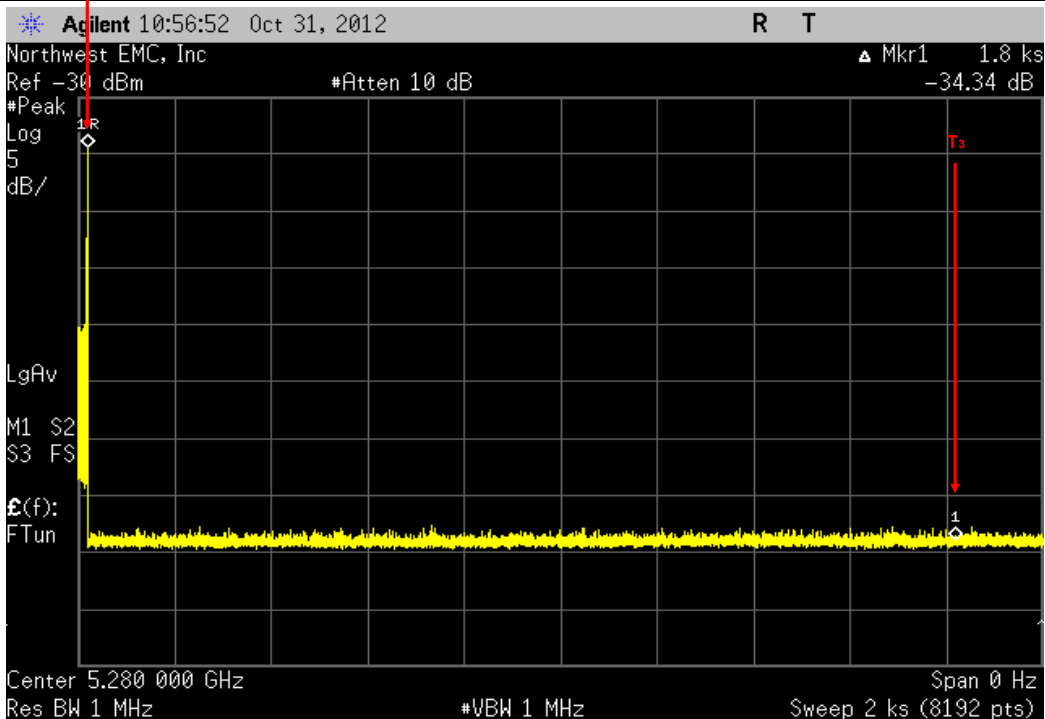
Value	Limit	Result
2 ms	≤ 260 ms	Pass



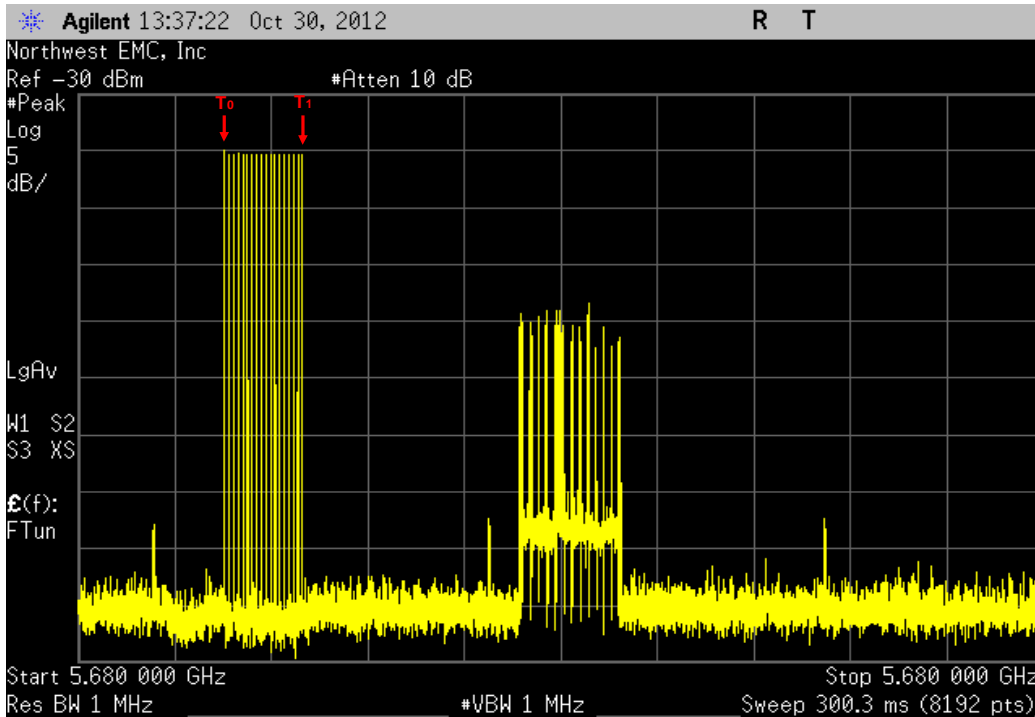
Antenna B, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 12.5s period		
<b>T<sub>1</sub>/T<sub>2</sub></b>	<b>Value</b>	<b>Limit</b>
	< 1 s	≤ 10 s
		<b>Result</b>
		Pass



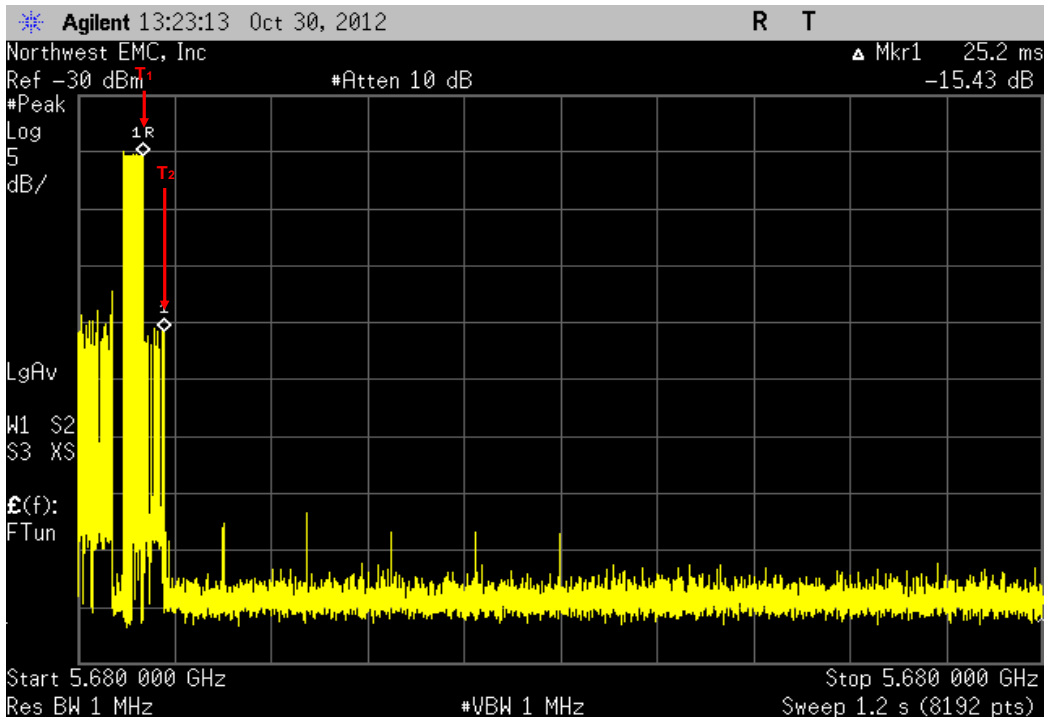
Antenna B, 802.11(n) 40 MHz, Lower Sub-Band 5250 MHz - 5350 MHz, Channel 56 below (Channel 54 paired), 30 minute period		
<b>T<sub>2</sub></b>	<b>Value</b>	<b>Limit</b>
	> 30 minutes	≥ 30 minutes
		<b>Result</b>
		Pass



Antenna B, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 300 ms period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	25.7 ms	N/A	N/A



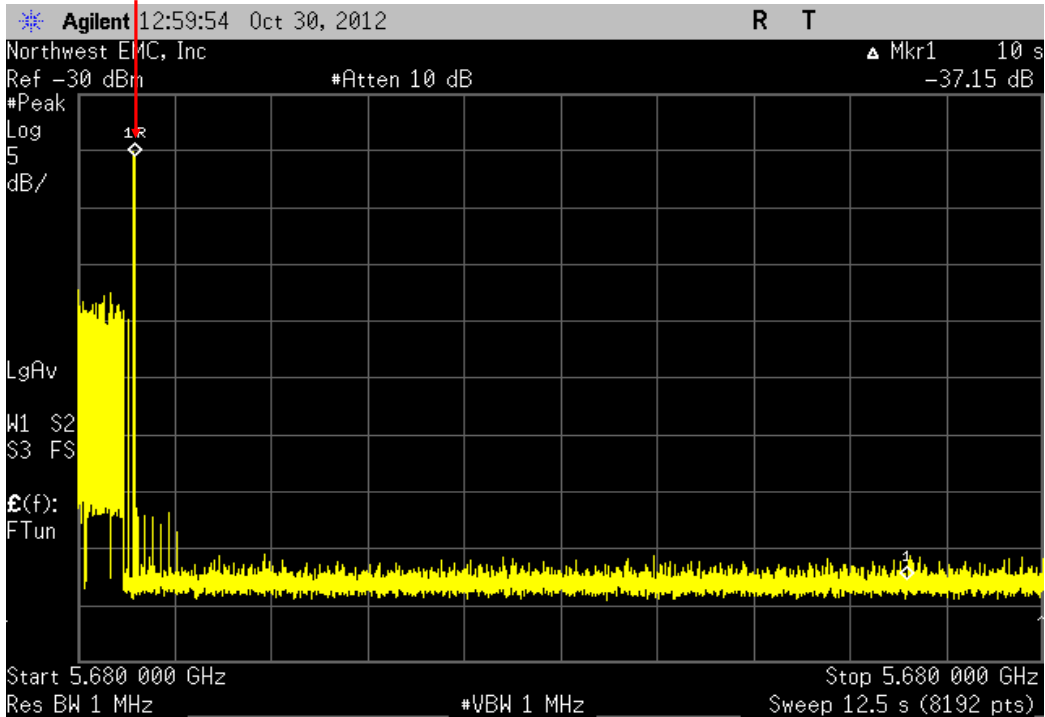
Antenna B, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 1.2s period			
	<b>Value</b>	<b>Limit</b>	<b>Result</b>
	25.2 ms	≤ 260 ms	Pass





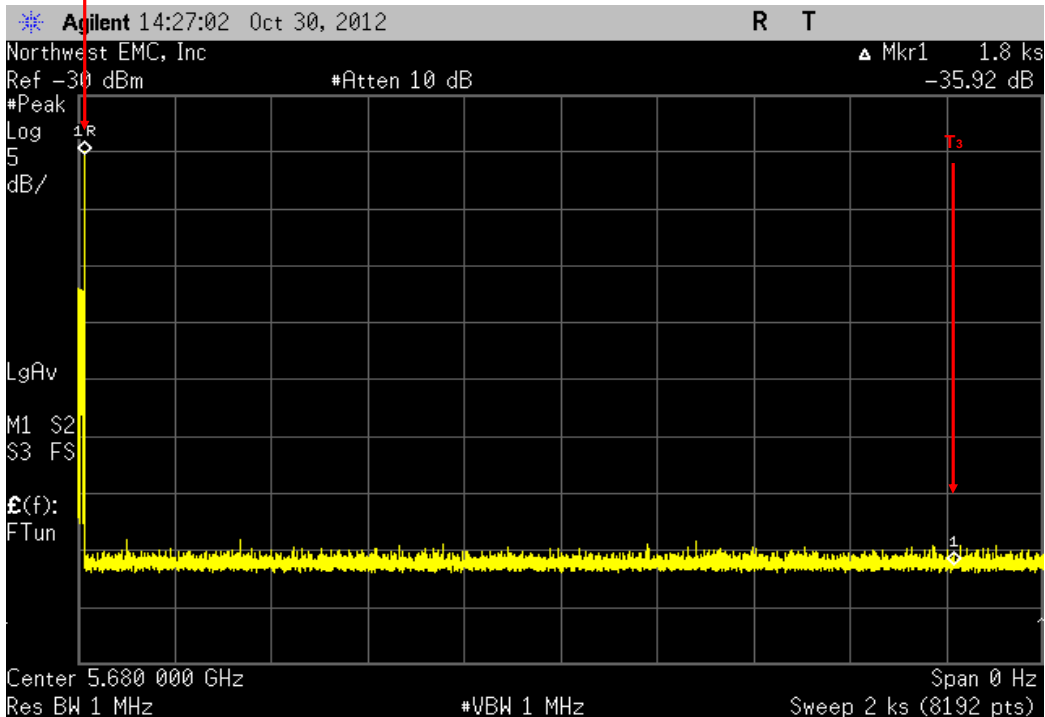
Antenna B, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 12.5s period

	Value	Limit	Result
T <sub>1</sub> /T <sub>2</sub>	< 1 s	≤ 10 s	Pass



Antenna B, 802.11(n) 40 MHz, Upper Sub-Band 5470 MHz - 5725 MHz, Channel 136 below (Channel 134 paired), 30 minute period

	Value	Limit	Result
T <sub>2</sub>	> 30 minutes	≥ 30 minutes	Pass



**System Block Diagram**

