

# **Electronic Technologies, LLC**

Marcum RT-9

FCC 15.207:2015 FCC 15.247:2015 802.11 bgn Radio

Report # ELTL0004.1





NVLAP Lab Code: 200881-0

# **CERTIFICATE OF TEST**



Last Date of Test: December 08, 2015 Electronic Technologies, LLC Model: Marcum RT-9

# **Radio Equipment Testing**

### **Standards**

Specification	Method
FCC 15.207:2015	ANSI C63.10:2013
FCC 15.247:2015	ANSI C03. 10.2013

### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
6.7	Spurious Conducted Emissions	Yes	Pass	
6.7	Band Edge Compliance	Yes	Pass	
6.9.1	Occupied Bandwidth	Yes	Pass	
6.10.2	Output Power	Yes	Pass	
6.11.2	Power Spectral Density	Yes	Pass	
7.5	Duty Cycle	Yes	N/A	

### **Deviations From Test Standards**

None

Approved By:

Tim OShea, Operations Manager

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. 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.

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# **REVISION HISTORY**



Revision Number	Description	Date	Page Number
00	None		

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# ACCREDITATIONS AND AUTHORIZATIONS



#### **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 17065 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

### Canada

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

### **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.

### Australia/New Zealand

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

#### Korea

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

### Japan

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

### **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.

### Singapore

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

#### Israel

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

### Hong Kong

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

### **Vietnam**

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

### SCOPE

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

http://www.nwemc.com/accreditations/ http://gsi.nist.gov/global/docs/cabs/designations.html

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# MEASUREMENT UNCERTAINTY



### **Measurement Uncertainty**

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	<u>- MU</u>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

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# **FACILITIES**







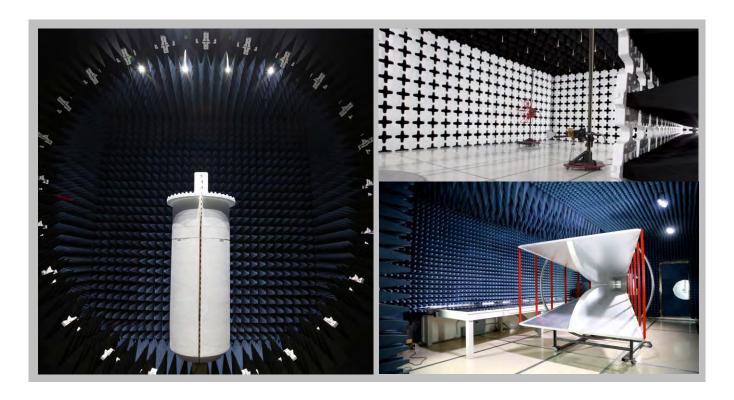
California	
Labs OC01-13	
41 Tesla	
Irvine, CA 92618	
(949) 861-8918	

Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136 New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214

Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066 **Texas**Labs TX01-09
3801 E Plano Pkwy
Plano, TX 75074
(469) 304-5255

**Washington**Labs NC01-05
19201 120<sup>th</sup> Ave NE
Bothell, WA 9801
(425)984-6600

Irvine, CA 92618 (949) 861-8918	Brooklyn Park, MN 55445 (612)-638-5136	Elbridge, NY 13060 (315) 554-8214	Hillsboro, OR 97124 (503) 844-4066	Plano, TX 75074 (469) 304-5255	Bothell, WA 9801 (425)984-6600	
	NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0	
		Industry	Canada			
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1	
		BS	МІ			
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R	
		VC	CI			
A-0029	A-0109	N/A	A-0108	A-0201	A-0110	
	Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157	



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# PRODUCT DESCRIPTION



### Client and Equipment Under Test (EUT) Information

Company Name:	Electronic Technologies, LLC
Address:	3943 Quebec Ave North
City, State, Zip:	New Hope, MN 55427
Test Requested By:	Deb See
Model:	Marcum RT-9
First Date of Test:	December 02, 2015
Last Date of Test:	December 04, 2015
Receipt Date of Samples:	November 18, 2015
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

### Information Provided by the Party Requesting the Test

### **Functional Description of the EUT:**

The RT9 is a ruggedized Android tablet. It has normal Android behavior and an ice fishing application. The RT9 can be used on its own as a tablet, or mounted in a docking station for recharge/mount. The tablet is powered by an internal Li-lon battery and will also ship with a standard 12 V battery that is the recharging station. The 12V battery has an external wall charger. The external battery should not be recharged while operating the tablet and documentation will state that. The tablet has 3 mounting attachment locations on its back where accessories for underwater cameras, ice fishing sonar, and open water sonars. Connectors are custom to the modules. The unit may operate with a maximum of 3 modules. The unit contains a GPS receiver, Wifi transmitter (2.4 GHz only is enabled). It has connections for HDMI, audio out, mini USB in for keyboard accessory, speakers, backlight, touchscreen LCD.

### **Testing Objective:**

To demonstrate compliance of the 802.11 radio under FCC 15.247 for operation in the 2.4 GHz band

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# **CONFIGURATIONS**



# Configuration ELTL0004-1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Ruggedized Tablet	Electronic Technologies, LLC	Marcum RT-9	RTS0123456805

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Manta Camera (x2)	Electronic Technologies, LLC	None	None	
Camera Panner (x2)	Electronic Technologies, LLC	None	None	
Ice Transducer	Electronic Technologies, LLC	None	None	
Earbud Headphones	Unknown	None	None	

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Manta Camera Cable (x2)	No	24.5m	Yes	Ruggedized Tablet	Manta Camera (x2)
Camera Panner Cable (x2)	No	3.5m	No	Ruggedized Tablet	Camera Panner (x2)
Ice Transducer Cable	No	2.5m	Yes	Ruggedized Tablet	Ice Transducer
Headphone Cable	No	2.0m	No	Earbud Headphones	Ruggedized Tablet
HDMI Cable	Yes	1.8m	No	Unterminated	Ruggedized Tablet
USB Cale	Yes	1.0m	No	Unterminated	Ruggedized Tablet

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# **CONFIGURATIONS**



# **Configuration ELTL0004-3**

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Ruggedized Tablet	Electronic Technologies, LLC	Marcum RT-9	RTS0123456811

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Manta Camera (x2)	Electronic Technologies, LLC	None	None	
Camera Panner (x2)	Electronic Technologies, LLC	None	None	
AC Adapter	Universal Power Group, Inc.	12BC0500D-1	None	
Ice Transducer	Electronic Technologies, LLC	None	None	
Keyboard	Dell	0U473D	CN-0U473D-44751-162-02NT-A02	
Earbud Headphones	Unknown	None	None	

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable	No	1.95m	Yes	AC Adapter	Ruggedized Tablet
Manta Camera Cable (x2)	No	24.5m	Yes	Ruggedized Tablet	Manta Camera (x2)
Camera Panner Cable (x2)	No	3.5m	No	Ruggedized Tablet	Camera Panner (x2)
lce Transducer Cable	No	2.5m	Yes	Ruggedized Tablet	Ice Transducer
USB Cable (Keyboard)	Yes	2.0m	Yes	Ruggedized Tablet	Keyboard
Headphone Cable	No	2.0m	No	Earbud Headphones	Ruggedized Tablet
HDMI Cable	Yes	1.8m	No	Unterminated	Ruggedized Tablet

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# **CONFIGURATIONS**



# **Configuration ELTL0004-5**

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Ruggedized Tablet	Electronic Technologies, LLC	Marcum RT-9	RTS0123456811
AC Adapter	Universal Power Group, Inc.	12BC0500D-1	None

Peripherals in t	test setup boundar	У	
Description	Manufacturer	Model/Part Number	Serial Number
Keyboard	Dell	0U473D	CN-0U473D-44751-162-02NT-A02

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable	No	1.95m	Yes	AC Adapter	Ruggedized Tablet
USB Cable (Keyboard)	Yes	2.0m	Yes	Ruggedized Tablet	Keyboard

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# **MODIFICATIONS**



# **Equipment Modifications**

Item	Date	Test	Modification	Note	Disposition of EUT
1	12/2/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module.	EUT was taken home by the client before the next scheduled test.
2	12/3/2015	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	12/4/2015	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	12/4/2015	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	12/4/2015	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	12/4/2015	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	12/4/2015	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	12/4/2015	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

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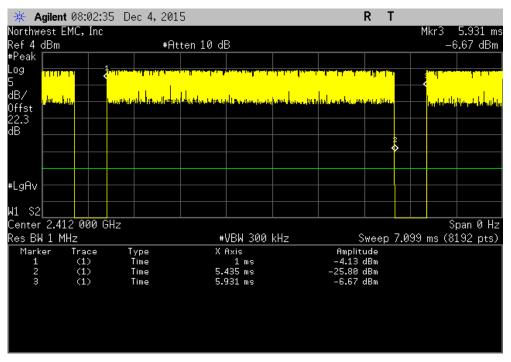


FUT	Morecom	т о						Work Order	ELTI 0004	
Serial Number:	: Marcum R :: RTS01234							Work Order: Date:	12/04/15	
Customer		Technologies,	LLC						22.2°C	
Attendees	: Rocky Ho	mes, Deb See						Humidity:	25%	
Project								Barometric Pres.:		
	Trevor Bu	ls			10VAC/60Hz			Job Site:	MN08	
TEST SPECIFICAT FCC 15.247:2015	HUNS				NSI C63.10:2013					
FCC 15.247:2015				<i>F</i>	MNSI C03. 10.2013					
COMMENTS										
None										
DEVIATIONS FROM	M TEST ST	ANDARD								
None										
Configuration #		5		Trevor	Bullo					
Comiguration #		·	Signature	Drevor	o mas					
		-					Number of	Value	Limit	
Chain A					Pulse Width	Period	Pulses	(%)	(%)	Results
Chain A	20 MHz									
		802.11(b) 1 M	1bps							
			Low Channel 1, 2412 MHz		4.435 ms	4.931 ms	1	89.9	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		4.435 ms N/A	4.931 ms N/A	1 5	89.9 N/A	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		N/A 4.435 ms	N/A 4.922 ms	5 1	N/A 90.1	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		4.435 IIIS N/A	4.922 IIIS N/A	5	90.1 N/A	N/A N/A	N/A N/A
		802.11(b) 11 l								
			Low Channel 1, 2412 MHz		580.1 us	1.067 ms	1	54.4	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz		579.8 us	1.067 ms	1	54.3	N/A	N/A
			Mid Channel 6, 2437 MHz High Channel 11, 2462 MHz		N/A 580.1 us	N/A 1.076 ms	5 1	N/A 53.9	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	55.9 N/A	N/A N/A	N/A N/A
		802.11(g) 6 M								
			Low Channel 1, 2412 MHz		727 us	1.225 ms	1	59.3	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		727.1 us N/A	1.234 ms N/A	1 5	58.9 N/A	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		727 us	1.225 ms	1	59.3	N/A N/A	N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	N/A	N/A	N/A
		802.11(g) 36 l	Mbps							
			Low Channel 1, 2412 MHz		135 us	642.2 us	1	21	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		135 us N/A	642.1 us N/A	1 5	21 N/A	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		135 us	642.1 us	5 1	N/A 21	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	N/A	N/A	N/A
		802.11(g) 54 l	Mbps							
			Low Channel 1, 2412 MHz		95.2 us	593.1 us	1	16.1	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz		95.3 us N/A	593.4 us N/A	1 5	16.1 N/A	N/A N/A	N/A N/A
			Mid Channel 6, 2437 MHz High Channel 11, 2462 MHz		95.3 us	593.4 us	5 1	N/A 16.1	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MC	S0							
			Low Channel 1, 2412 MHz		621.5 us	1.12 ms	1	55.5	N/A	N/A
			Low Channel 1, 2412 MHz		N/A 621.5 us	N/A 1.12 ms	5 1	N/A 55.5	N/A N/A	N/A N/A
			Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		621.5 us N/A	1.12 ms N/A	5	55.5 N/A	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		621.2 us	1.128 ms	1	55.1	N/A	N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MC	S7							
			Low Channel 1, 2412 MHz		92.3 us	590.4 us	1	15.6	N/A	N/A
			Low Channel 1, 2412 MHz		N/A	N/A	5	N/A	N/A	N/A
			Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		92.3 us N/A	590.4 us N/A	1 5	15.6 N/A	N/A N/A	N/A N/A
			High Channel 11, 2462 MHz		92.3 us	590.2 us	1	15.6	N/A N/A	N/A
			High Channel 11, 2462 MHz		N/A	N/A	5	N/A	N/A	N/A
	40 MHz							75.2		N1/A
	40 MHz	802.11(n) MC			1 000	4 4E 4				
	40 MHz		Low Channel 1/5, 2422 MHz		1.093 ms N/Δ	1.454 ms N/Δ	1		N/A N/A	N/A N/A
	40 MHz		Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz		N/A	N/A	6	N/A	N/A	N/A
	40 MHz		Low Channel 1/5, 2422 MHz							
	40 MHz		Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz		N/A 1.093 ms N/A 1.093 ms	N/A 1.454 ms N/A 1.454 ms	6 1 6 1	N/A 75.2 N/A 75.2	N/A N/A N/A N/A	N/A N/A N/A N/A
	40 MHz		Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz		N/A 1.093 ms N/A	N/A 1.454 ms N/A	6 1 6	N/A 75.2 N/A	N/A N/A N/A	N/A N/A N/A
	40 MHz	802.11(n) MC	Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz S7		N/A 1.093 ms N/A 1.093 ms N/A	N/A 1.454 ms N/A 1.454 ms N/A	6 1 6 1 6	N/A 75.2 N/A 75.2 N/A	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
	40 MHz	802.11(n) MC	Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz S7 Low Channel 1/5, 2422 MHz		N/A 1.093 ms N/A 1.093 ms N/A	N/A 1.454 ms N/A 1.454 ms N/A 478.6 us	6 1 6 1 6	N/A 75.2 N/A 75.2 N/A	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
	40 MHz	802.11(n) MC	Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz S7 Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz		N/A 1.093 ms N/A 1.093 ms N/A 117.5 us N/A	N/A 1.454 ms N/A 1.454 ms N/A 478.6 us N/A	6 1 6 1 6	N/A 75.2 N/A 75.2 N/A 24.6 N/A	N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A
	40 MHz	802.11(n) MC	Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz S7 Low Channel 1/5, 2422 MHz		N/A 1.093 ms N/A 1.093 ms N/A	N/A 1.454 ms N/A 1.454 ms N/A 478.6 us	6 1 6 1 6	N/A 75.2 N/A 75.2 N/A	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
	40 MHz	802.11(n) MC	Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz High Channel 7/11, 2452 MHz S7 Low Channel 1/5, 2422 MHz Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz	_	N/A 1.093 ms N/A 1.093 ms N/A 117.5 us N/A 117.5 us	N/A 1.454 ms N/A 1.454 ms N/A 478.6 us N/A 478.6 us	6 1 6 1 6	N/A 75.2 N/A 75.2 N/A 24.6 N/A 24.6	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A

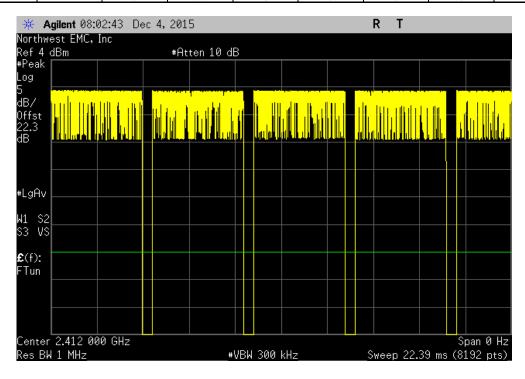
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Chain A, 20 MHz, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz								
	Number of Value Limit							
		Pulse Width	Period	Pulses	(%)	(%)	Results	
		4.435 ms	4.931 ms	1	89.9	N/A	N/A	



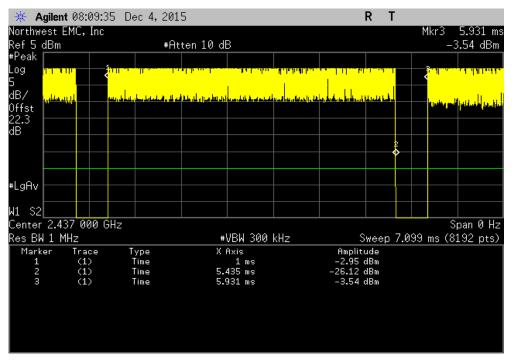
Chain A, 20 MHz, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
Number of Value Limit						
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



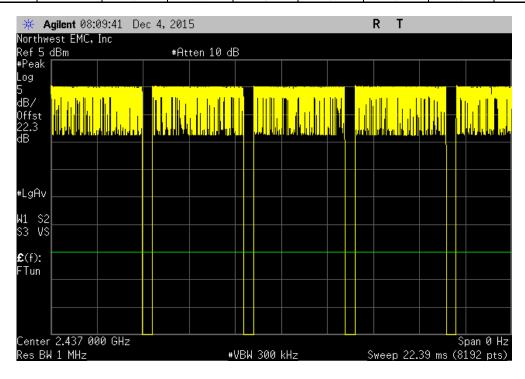
Report No. ELTL0004.1 14/223



Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz							
	Number of Value Limit						
	Pulse Width	Period	Pulses	(%)	(%)	Results	
ı	4.435 ms	4.931 ms	1	89.9	N/A	N/A	



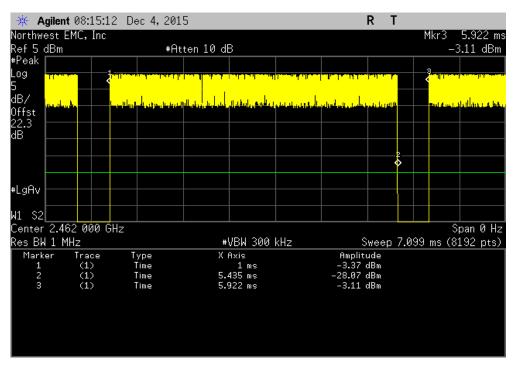
Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz							
Number of Value Limit							
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	N/A	N/A	5	N/A	N/A	N/A	



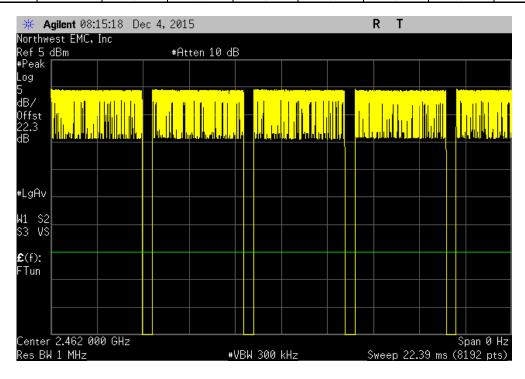
Report No. ELTL0004.1 15/223



Chain A, 20 MHz, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz								
	Number of Value Limit							
		Pulse Width	Period	Pulses	(%)	(%)	Results	
		4.435 ms	4.922 ms	1	90.1	N/A	N/A	



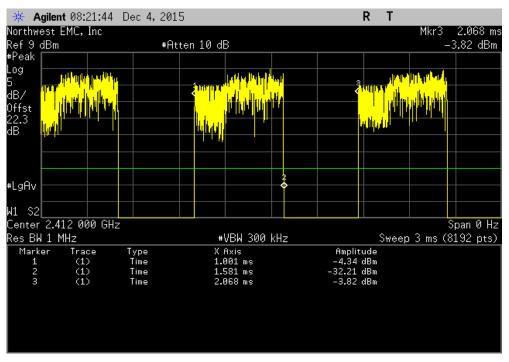
	Chain /	A, 20 MHz, 802.1	1(b) 1 Mbps, Higl	h Channel 11, 24	62 MHz		
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
ı	N/A	N/A	5	N/A	N/A	N/A	



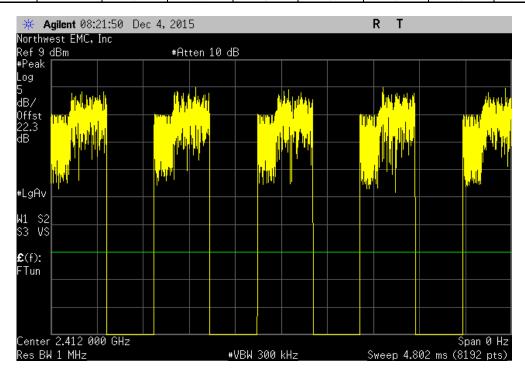
Report No. ELTL0004.1 16/223



	Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz									
			Number of	Value	Limit					
	Pulse Width	Period	Pulses	(%)	(%)	Results				
1	580.1 us	1.067 ms	1	54.4	N/A	N/A				



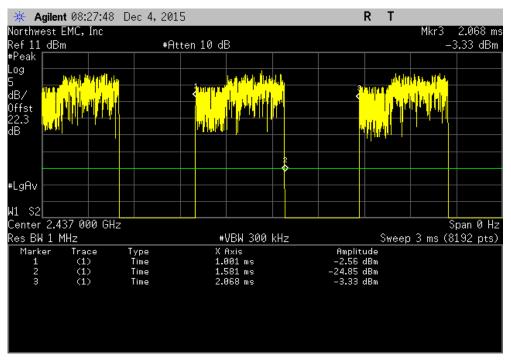
Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz							
		Number of	Value	Limit			
 Pulse Width	Period	Pulses	(%)	(%)	Results		
N/A	N/A	5	N/A	N/A	N/A		



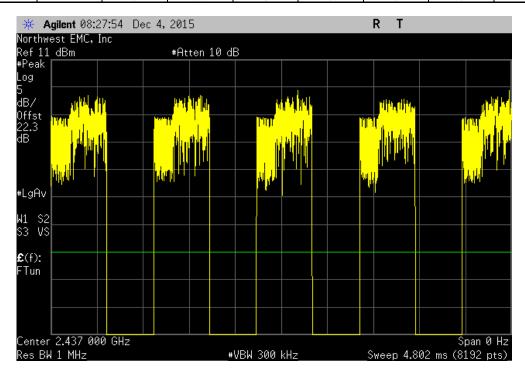
Report No. ELTL0004.1 17/223



Chain A, 20 MHz, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
579.8 us	1.067 ms	1	54.3	N/A	N/A			



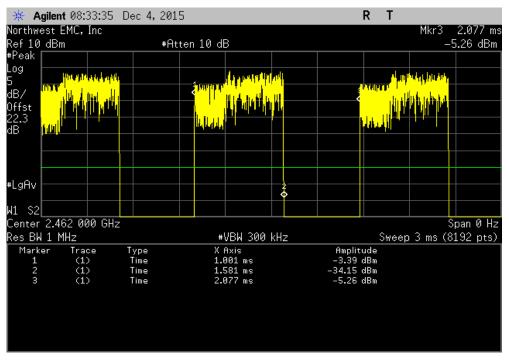
	Chain A, 20 MHz, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz							
				Number of	Value	Limit		
		Pulse Width	Period	Pulses	(%)	(%)	Results	
I		N/A	N/A	5	N/A	N/A	N/A	



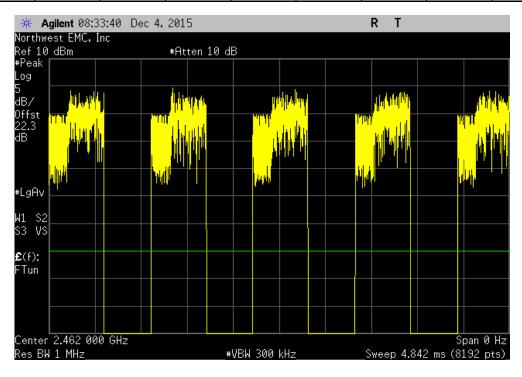
Report No. ELTL0004.1 18/223



	Chain A, 20 MHz, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz							
				Number of	Value	Limit		
		Pulse Width	Period	Pulses	(%)	(%)	Results	
1		580.1 us	1.076 ms	1	53.9	N/A	N/A	l



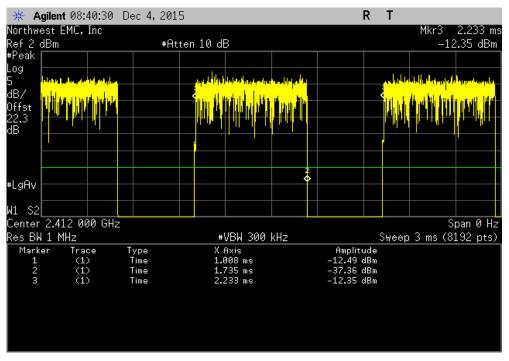
	Chain A, 20 MHz, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz							
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	N/A	N/A	5	N/A	N/A	N/A		



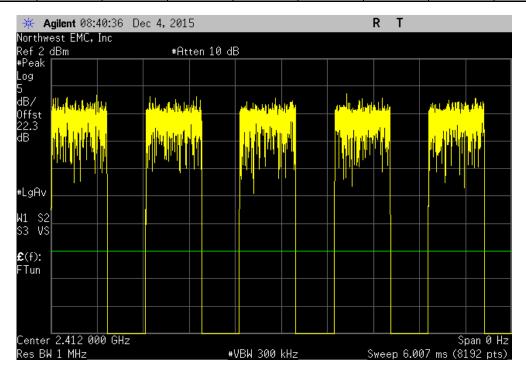
Report No. ELTL0004.1 19/223



Chain A, 20 MHz, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
727 us	1.225 ms	1	59.3	N/A	N/A			



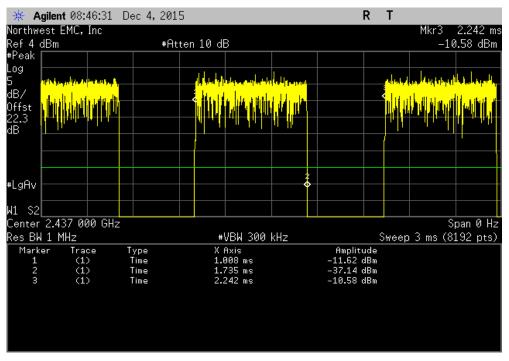
	Chain A, 20 MHz, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz								
				Number of	Value	Limit			
		Pulse Width	Period	Pulses	(%)	(%)	Results		
l		N/A	N/A	5	N/A	N/A	N/A		



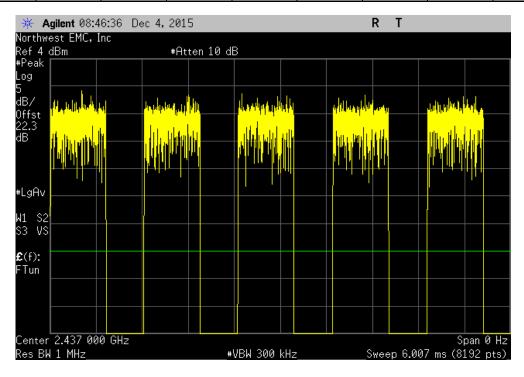
Report No. ELTL0004.1 20/223



Chain A, 20 MHz, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
727.1 us	1.234 ms	1	58.9	N/A	N/A			



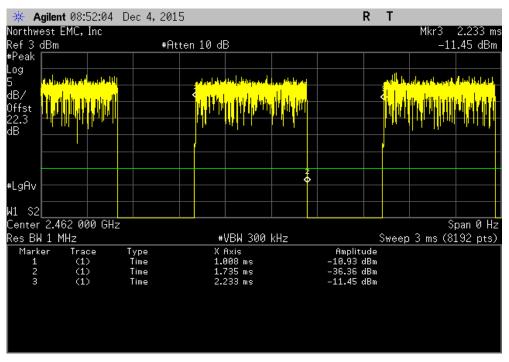
Chain A, 20 MHz, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	N/A	N/A	5	N/A	N/A	N/A		



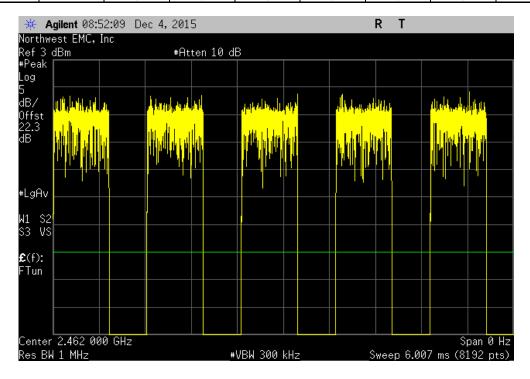
Report No. ELTL0004.1 21/223



Chain A, 20 MHz, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
727 us	1.225 ms	1	59.3	N/A	N/A			



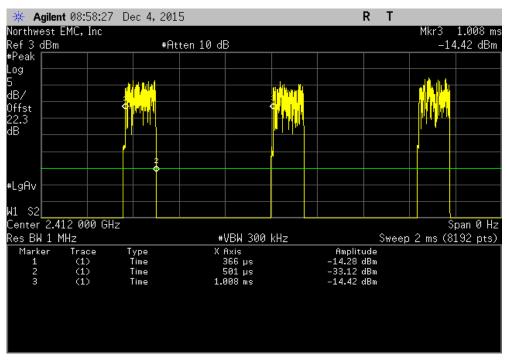
Chain A, 20 MHz, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz								
		Number of	Value	Limit				
 Pulse Width	Period	Pulses	(%)	(%)	Results			
N/A	N/A	5	N/A	N/A	N/A			



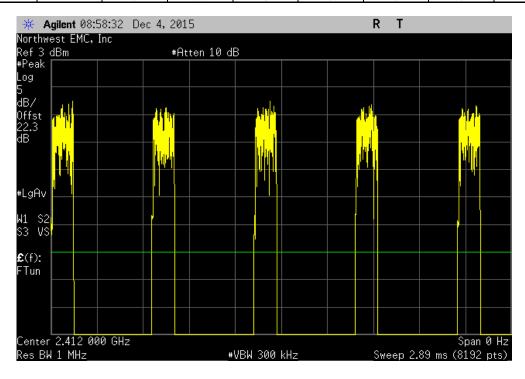
Report No. ELTL0004.1 22/223



Chain A, 20 MHz, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	135 us	642.2 us	1	21	N/A	N/A		



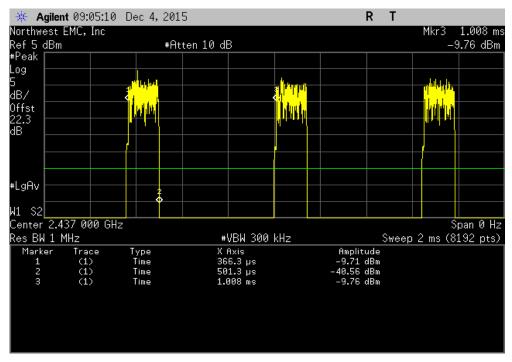
	Chain .	A, 20 MHz, 802.1	11(g) 36 Mbps, Lo	w Channel 1, 24	12 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
,	N/A	N/A	5	N/A	N/A	N/A



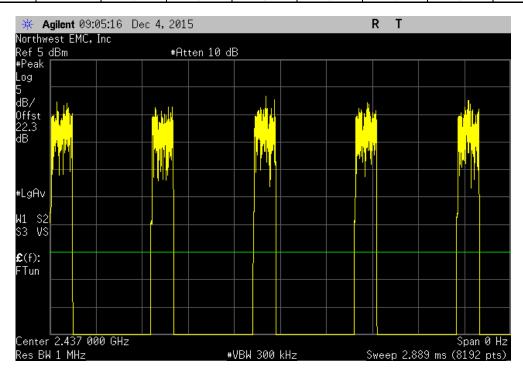
Report No. ELTL0004.1 23/223



	Chain .	A, 20 MHz, 802.1	1(g) 36 Mbps, M	id Channel 6, 243	7 MHz		
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	135 us	642.1 us	1	21	N/A	N/A	



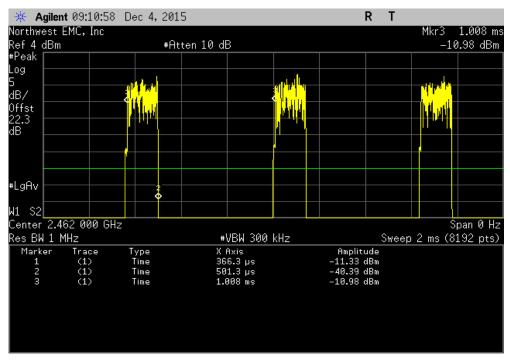
Chain A, 20 MHz, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz							
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	N/A	N/A	5	N/A	N/A	N/A	



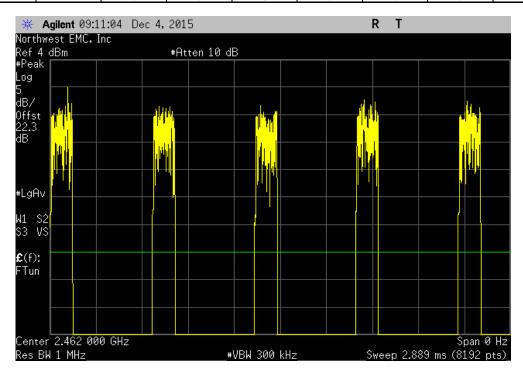
Report No. ELTL0004.1 24/223



Chain A, 20 MHz, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	135 us	642.1 us	1	21	N/A	N/A			



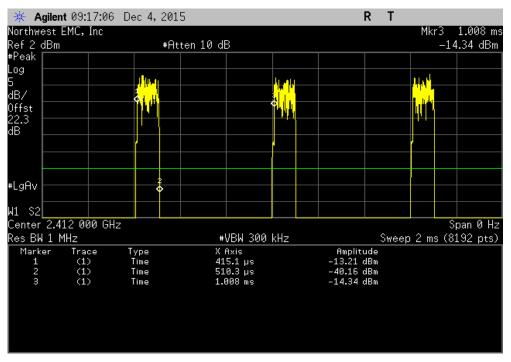
	Chain A	i, 20 MHz, 802.11	1(g) 36 Mbps, Hig	h Channel 11, 24	62 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



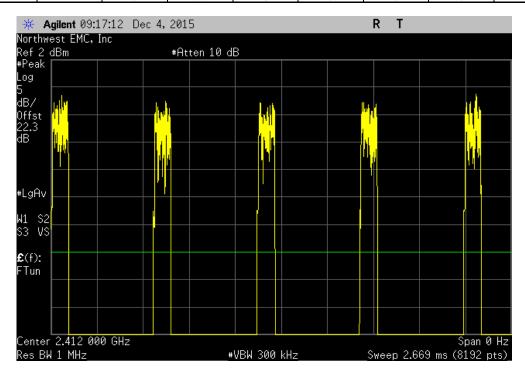
Report No. ELTL0004.1 25/223



	Chain A, 20 MHz, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz								
				Number of	Value	Limit			
		Pulse Width	Period	Pulses	(%)	(%)	Results		
1		95.2 us	593.1 us	1	16.1	N/A	N/A		



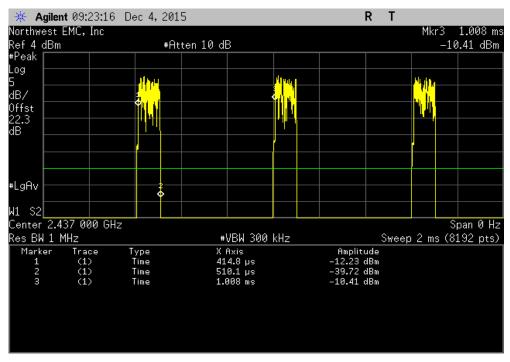
	Chain .	A, 20 MHz, 802.1	11(g) 54 Mbps, Lo	w Channel 1, 24	12 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
,	N/A	N/A	5	N/A	N/A	N/A



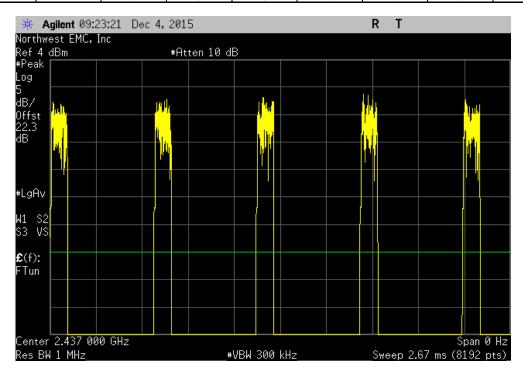
Report No. ELTL0004.1 26/223



Chain A, 20 MHz, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	95.3 us	593.4 us	1	16.1	N/A	N/A			



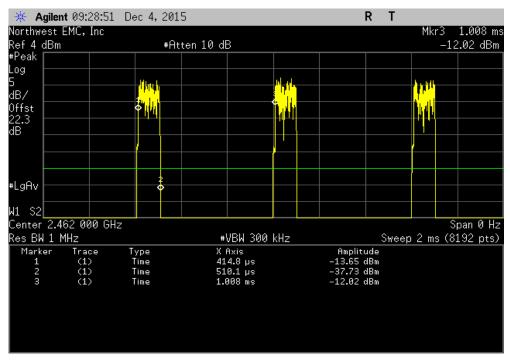
	Chain A, 20 MHz, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz							
				Number of	Value	Limit		
		Pulse Width	Period	Pulses	(%)	(%)	Results	
l		N/A	N/A	5	N/A	N/A	N/A	



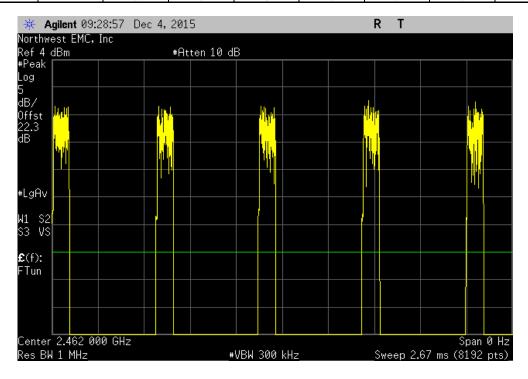
Report No. ELTL0004.1 27/223



Chain A, 20 MHz, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	95.3 us	593.4 us	1	16.1	N/A	N/A			



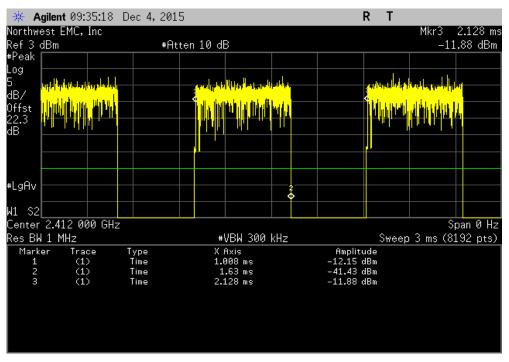
Chain /	A, 20 MHz, 802.1	1(g) 54 Mbps, Hig	jh Channel 11, 24	l62 MHz	
		Number of	Value	Limit	
 Pulse Width	Period	Pulses	(%)	(%)	Results
N/A	N/A	5	N/A	N/A	N/A



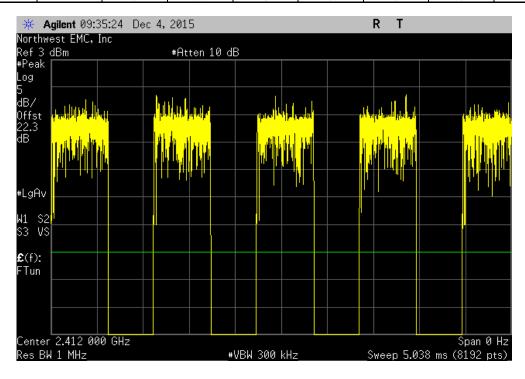
Report No. ELTL0004.1 28/223



	Chair	A, 20 MHz, 802.	11(n) MCS0, Lov	v Channel 1, 2412	2 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
I	621.5 us	1.12 ms	1	55.5	N/A	N/A



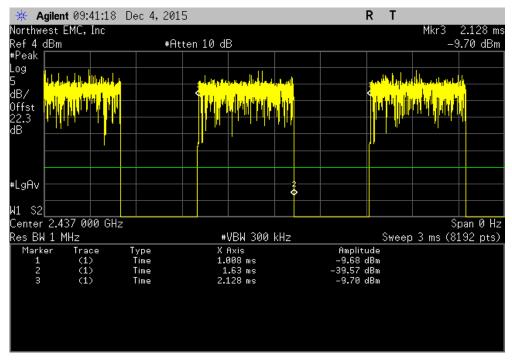
Chair	A, 20 MHz, 802	.11(n) MCS0, Lov	v Channel 1, 241	2 MHz	
		Number of	Value	Limit	
 Pulse Width	Period	Pulses	(%)	(%)	Results
N/A	N/A	5	N/A	N/A	N/A



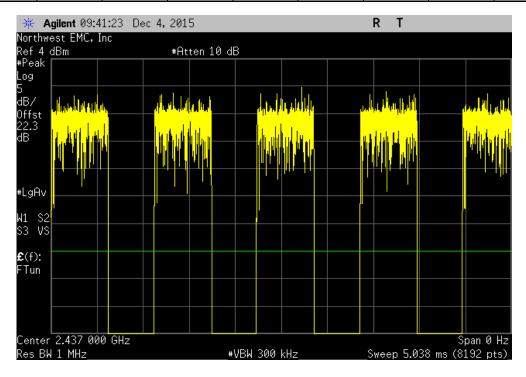
Report No. ELTL0004.1 29/223



	Chair	A, 20 MHz, 802	.11(n) MCS0, Mic	d Channel 6, 2437	MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	621.5 us	1.12 ms	1	55.5	N/A	N/A



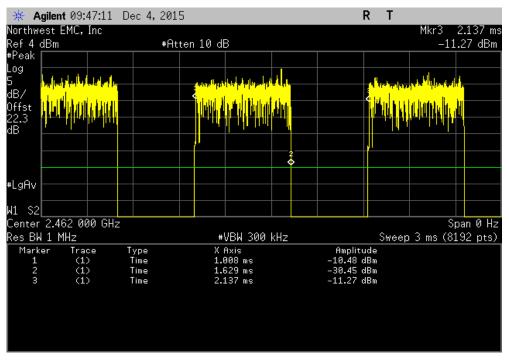
	Chair	n A, 20 MHz, 802.	.11(n) MCS0, Mid	d Channel 6, 2437	MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



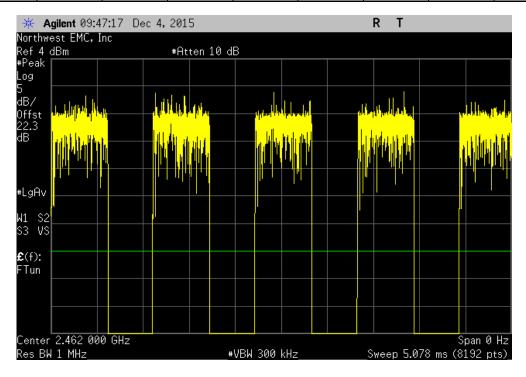
Report No. ELTL0004.1 30/223



	Chain	A, 20 MHz, 802.1	I1(n) MCS0, High	Channel 11, 246	2 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	621.2 us	1.128 ms	1	55.1	N/A	N/A



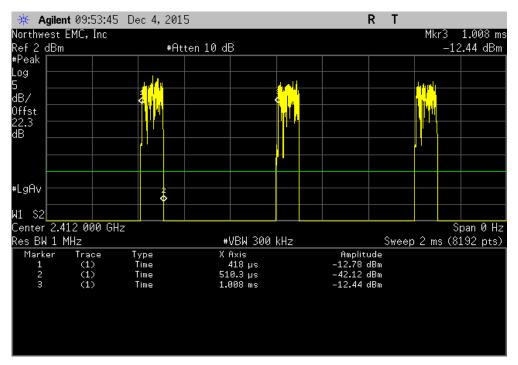
	Chain	A, 20 MHz, 802.1	I1(n) MCS0, High	Channel 11, 246	2 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



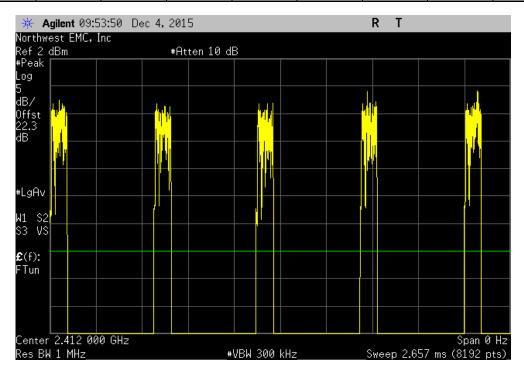
Report No. ELTL0004.1 31/223



	Chain	A, 20 MHz, 802.	11(n) MCS7, Lov	/ Channel 1, 2412	2 MHz		
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	92.3 us	590.4 us	1	15.6	N/A	N/A	



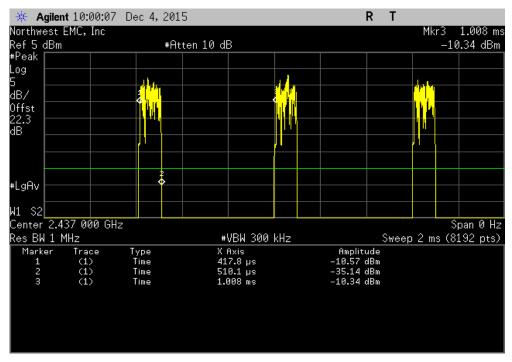
	Chair	n A, 20 MHz, 802.	.11(n) MCS7, Lov	v Channel 1, 2412	2 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



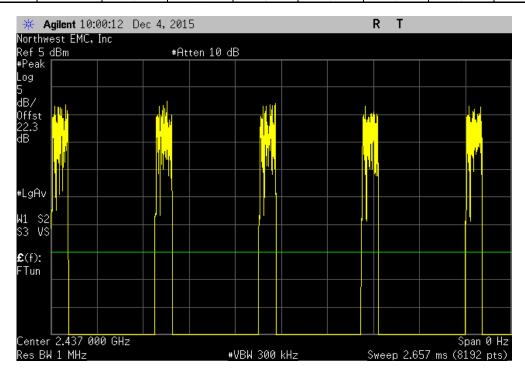
Report No. ELTL0004.1 32/223



	Chair	A, 20 MHz, 802	.11(n) MCS7, Mic	d Channel 6, 2437	MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	92.3 us	590.4 us	1	15.6	N/A	N/A



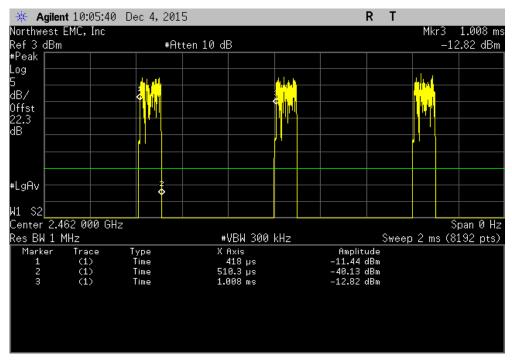
	Chair	n A, 20 MHz, 802	.11(n) MCS7, Mic	d Channel 6, 2437	MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
ı	N/A	N/A	5	N/A	N/A	N/A



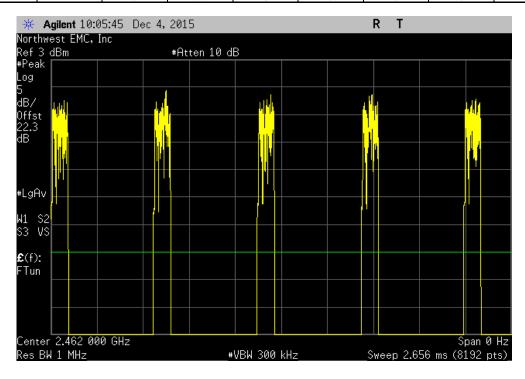
Report No. ELTL0004.1 33/223



Chain	A, 20 MHz, 802.	11(n) MCS7, High	Channel 11, 246	2 MHz	
		Number of	Value	Limit	
Pulse Width	Period	Pulses	(%)	(%)	Results
92.3 us	590.2 us	1	15.6	N/A	N/A



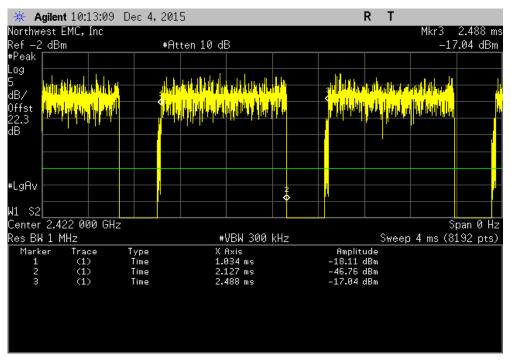
Chain	A, 20 MHz, 802.	11(n) MCS7, High	Channel 11, 246	2 MHz	
		Number of	Value	Limit	
 Pulse Width	Period	Pulses	(%)	(%)	Results
N/A	N/A	5	N/A	N/A	N/A



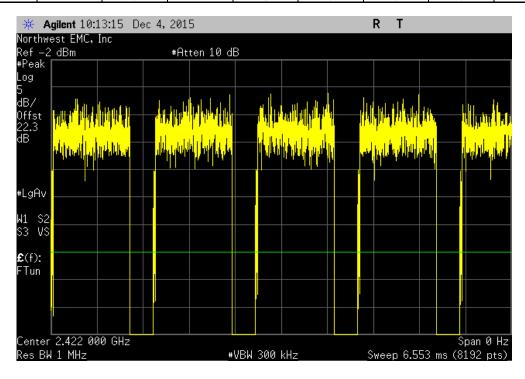
Report No. ELTL0004.1 34/223



	Chain	A, 40 MHz, 802.1	11(n) MCS0, Low	Channel 1/5, 242	22 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	1.093 ms	1.454 ms	1	75.2	N/A	N/A



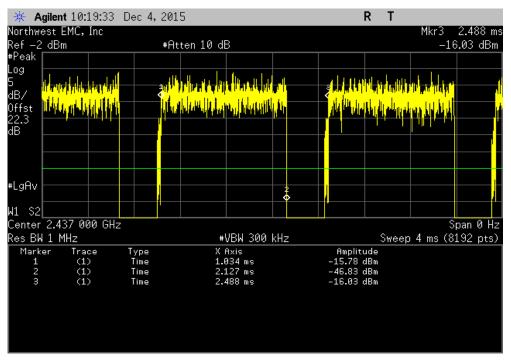
	Chain	A, 40 MHz, 802.1	11(n) MCS0, Low	Channel 1/5, 242	22 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	6	N/A	N/A	N/A



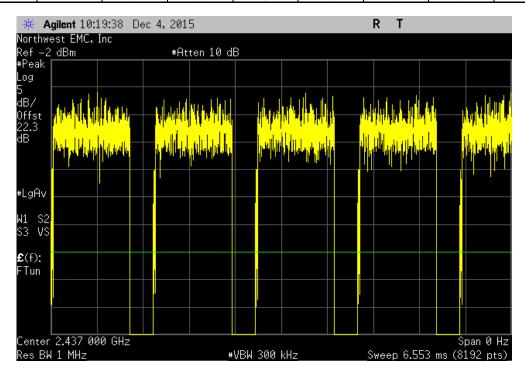
Report No. ELTL0004.1 35/223



	Chain	A, 40 MHz, 802.	11(n) MCS0, Mid	Channel 4/8, 243	7 MHz	
			Number of	Value	Limit	
Pulse	e Width	Period	Pulses	(%)	(%)	Results
1.0	93 ms	1.454 ms	1	75.2	N/A	N/A



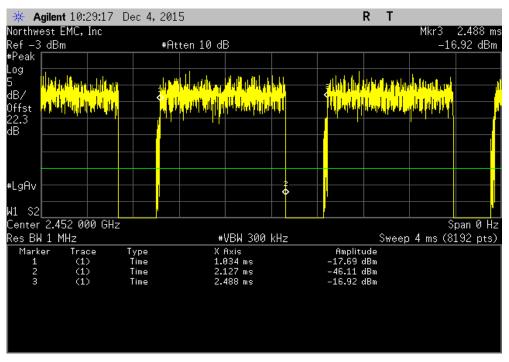
	Chain	A, 40 MHz, 802.	11(n) MCS0, Mid	Channel 4/8, 243	7 MHz	
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
1	N/A	N/A	6	N/A	N/A	N/A



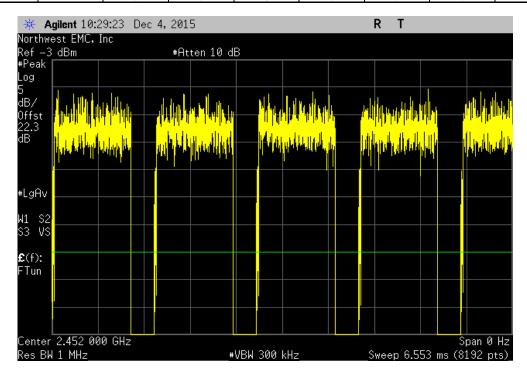
Report No. ELTL0004.1 36/223



Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
1.093 ms	1.454 ms	1	75.2	N/A	N/A			



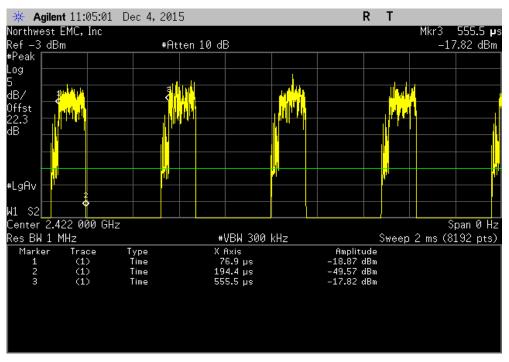
Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz								
		Number of	Value	Limit				
 Pulse Width	Period	Pulses	(%)	(%)	Results			
N/A	N/A	6	N/A	N/A	N/A			



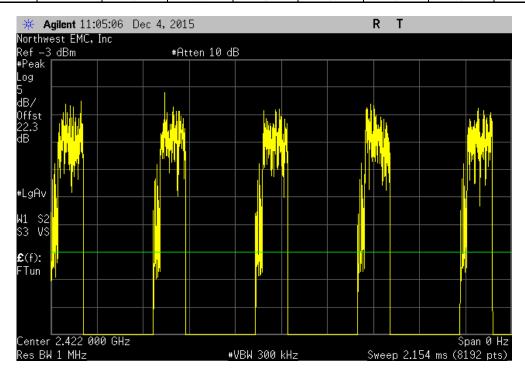
Report No. ELTL0004.1 37/223



Chain A, 40 MHz, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	117.5 us	478.6 us	1	24.6	N/A	N/A		



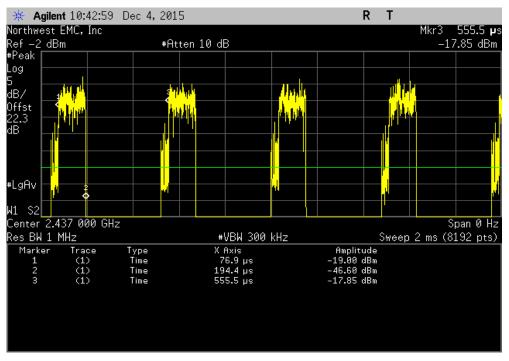
Chain A, 40 MHz, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	N/A	N/A	6	N/A	N/A	N/A		



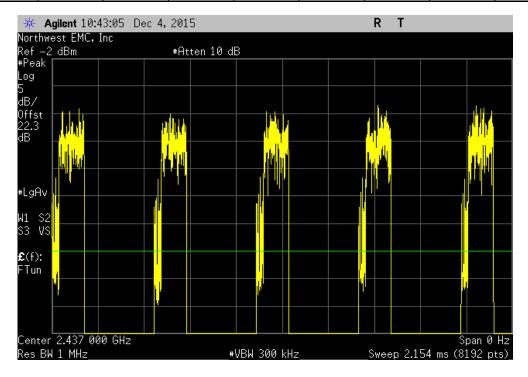
Report No. ELTL0004.1 38/223



Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	117.5 us	478.6 us	1	24.6	N/A	N/A		



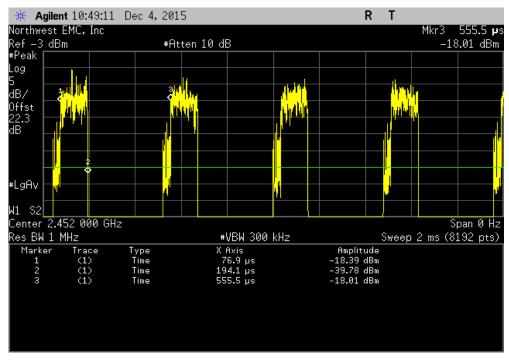
	Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz							
				Number of	Value	Limit		
		Pulse Width	Period	Pulses	(%)	(%)	Results	
l		N/A	N/A	6	N/A	N/A	N/A	



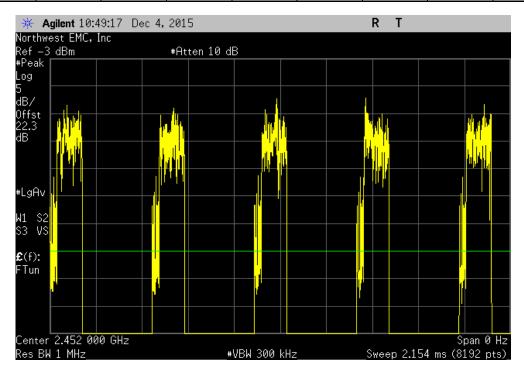
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Chain A, 40 MHz, 802.11(n) MCS7, High Channel 7/11, 2452 MHz								
		Number of	Value	Limit				
Pulse Width	Period	Pulses	(%)	(%)	Results			
117.2 us	478.6 us	1	24.5	N/A	N/A			



	Chain A, 40 MHz, 802.11(n) MCS7, High Channel 7/11, 2452 MHz								
				Number of	Value	Limit			
		Pulse Width	Period	Pulses	(%)	(%)	Results		
l		N/A	N/A	6	N/A	N/A	N/A		



Report No. ELTL0004.1 40/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

	Description	Manufacturer	Model	ID	Last Cal.	Interval
	Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
	Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
•	Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
•	Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
,	Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

Report No. ELTL0004.1

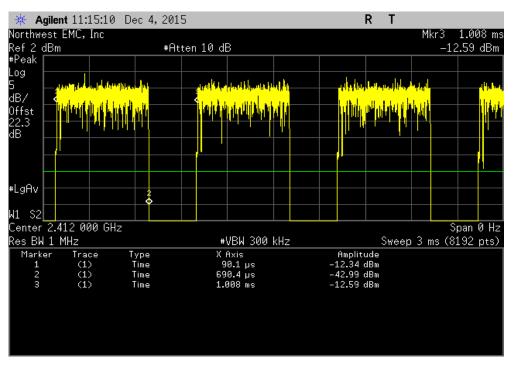


EUT: Marc	rum RT-9					Work Order:	FI TI 0004	
Serial Number: RTS							12/04/15	
	tronic Technologies	. LLC				Temperature:		
	ky Holmes, Deb See	,				Humidity:		
Project: Non						Barometric Pres.:		
Tested by: Trev			Power: 110VAC/60Hz			Job Site:		
EST SPECIFICATIONS			Test Method					
CC 15.247:2015			ANSI C63.10:2013					
COMMENTS								
None								
DEVIATIONS FROM TES	ST STANDARD							
None								
	_		revor Buls					
Configuration #	5	01 1	10000 Dulls					
		Signature	WC -		Normalia and	W-live	1 1 14	
			Pulse Width	Period	Number of Pulses	Value	Limit	Results
Chain A			ruise Wiutii	renou	ruises	(%)	(%)	Results
20 N	1H7							
20 1		2483.5 MHz Band						
		802.11(n) MCS8						
		Low Channel 1, 2412 MHz	600.3 us	918.2 us	1	65.4	N/A	N/A
		Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	599.9 us	918.2 us	1	65.3	N/A	N/A
		Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
		High Channel 11, 2462 MF	600.3 us	918.2 us	1	65.4	N/A	N/A
		High Channel 11, 2462 MF	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15						
		Low Channel 1, 2412 MHz	150.4 us	468.1 us	1	32.1	N/A	N/A
		Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	150.4 us	468.1 us	1	32.1	N/A	N/A
		Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
		High Channel 11, 2462 MF	150.4 us	468.1 us	1	32.1	N/A	N/A
o		High Channel 11, 2462 MF	N/A	N/A	5	N/A	N/A	N/A
Chain B 20 M	0.1-							
20 IV		2483.5 MHz Band						
		802.11(n) MCS8						
		Low Channel 1, 2412 MHz	598.8 us	918.2 us	1	65.2	N/A	N/A
		Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	598.4 us	917.8 us	1	65.2	N/A	N/A
		Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
		High Channel 11, 2462 MF	599.2 us	918.2 us	1	65.3	N/A	N/A
		High Channel 11, 2462 MF	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15						
		Low Channel 1, 2412 MHz	149.7 us	468.3 us	1	32	N/A	N/A
		Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	149.7 us	468 us	1	32	N/A	N/A
		Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
		High Channel 11, 2462 MF	149.7 us	468.1 us	1	32	N/A	N/A
		High Channel 11, 2462 MF	N/A	N/A	5	N/A	N/A	N/A

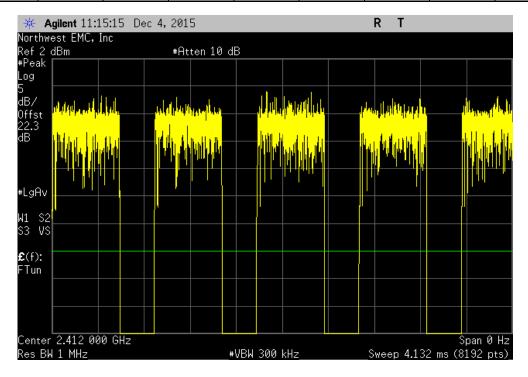
Report No. ELTL0004.1 42/223



Cha	Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz								
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	600.3 us	918.2 us	1	65.4	N/A	N/A			



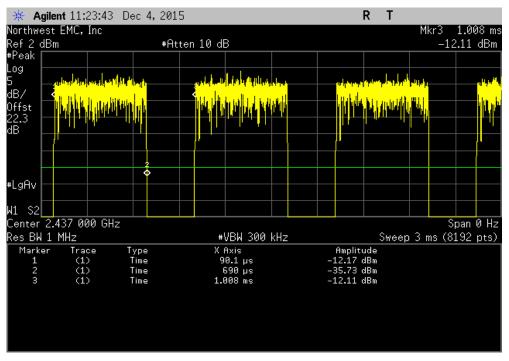
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz								
			Number of	Value	Limit			
	Pulse Width	Period	Pulses	(%)	(%)	Results		
	N/A	N/A	5	N/A	N/A	N/A		



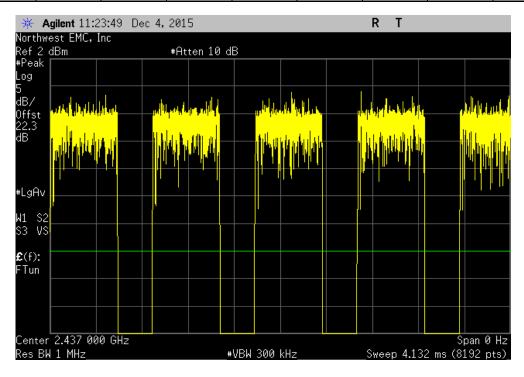
Report No. ELTL0004.1 43/223



Cha	in A, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid (	Channel 6, 2437	MHz	
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	599.9 us	918.2 us	1	65.3	N/A	N/A	l



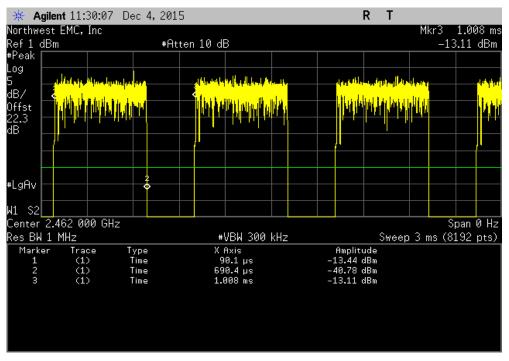
Cha	in A, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid	Channel 6, 2437	MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



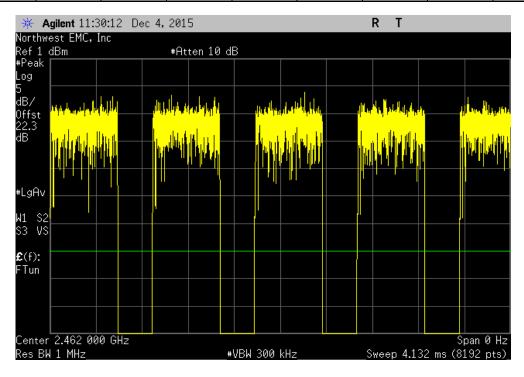
Report No. ELTL0004.1 44/223



Chair	n A, 20 MHz, 240	0 MHz - 2483.5 M	1Hz Band, 802.11	(n) MCS8, High (	Channel 11, 2462	MHz	
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	600.3 us	918.2 us	1	65.4	N/A	N/A	



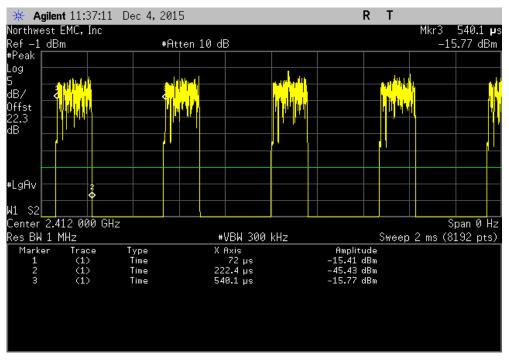
Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	/IHz Band, 802.11	I(n) MCS8, High (	Channel 11, 2462	2 MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



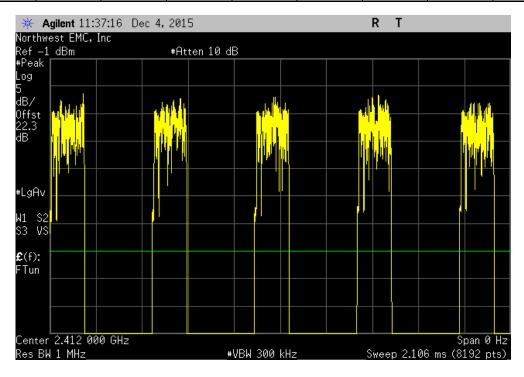
Report No. ELTL0004.1 45/223



Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	1(n) MCS15, Low	Channel 1, 2412	MHz	
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	150.4 us	468.1 us	1	32.1	N/A	N/A	



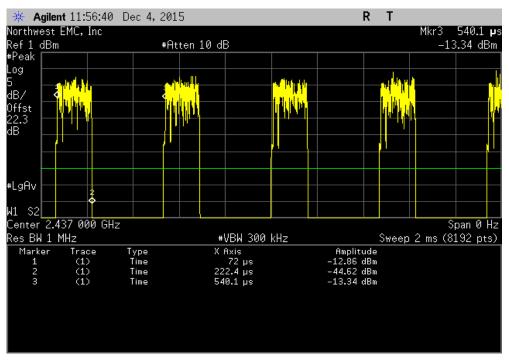
Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS15, Low	Channel 1, 2412	MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



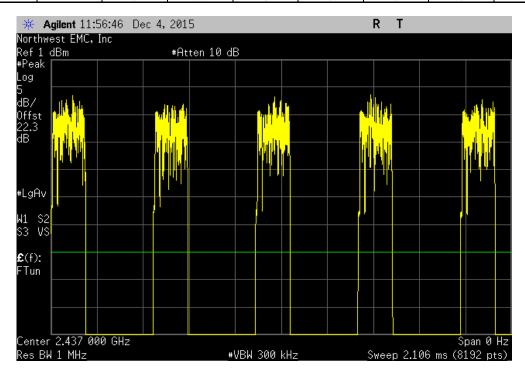
Report No. ELTL0004.1 46/223



Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz	
			Number of	Value	Limit		
	Pulse Width	Period	Pulses	(%)	(%)	Results	
	150.4 us	468.1 us	1	32.1	N/A	N/A	



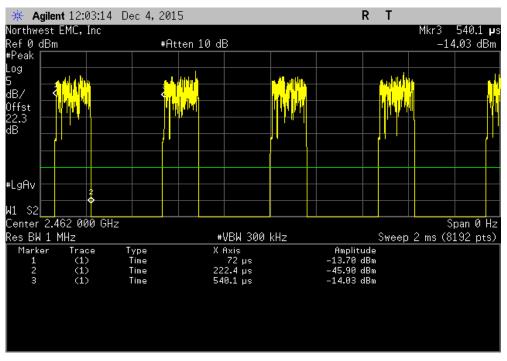
	Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz
				Number of	Value	Limit	
		Pulse Width	Period	Pulses	(%)	(%)	Results
1		N/A	N/A	5	N/A	N/A	N/A



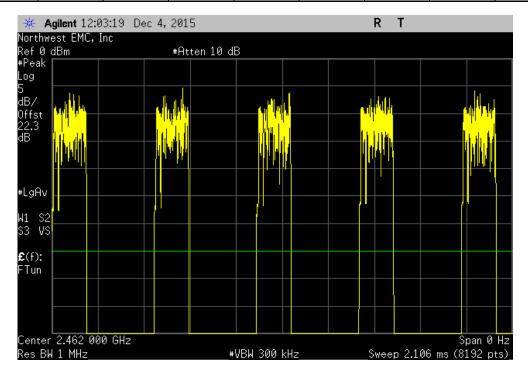
Report No. ELTL0004.1 47/223



Chair	n A, 20 MHz, 2400	) MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	150.4 us	468.1 us	1	32.1	N/A	N/A



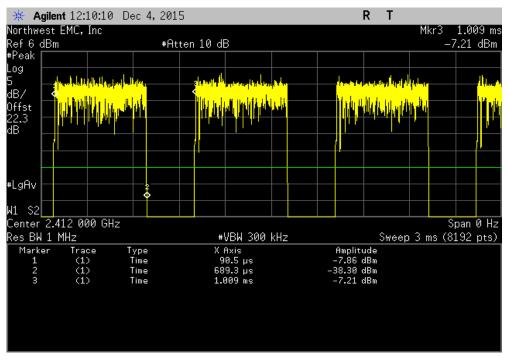
Chair	n A, 20 MHz, 2400	) MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 246	2 MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



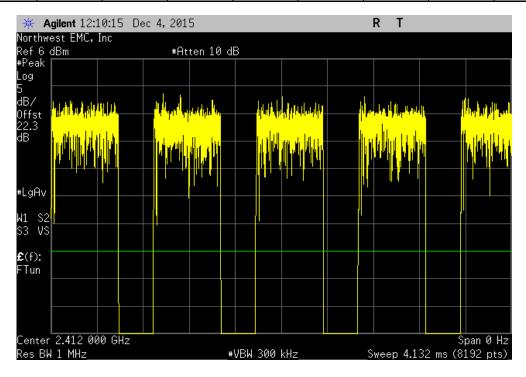
Report No. ELTL0004.1 48/223



C	hain B, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Low	Channel 1, 2412	MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	598.8 us	918.2 us	1	65.2	N/A	N/A



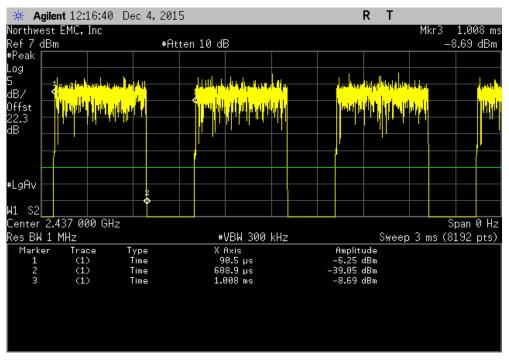
	Cha	in B, 20 MHz, 240	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Low	Channel 1, 2412	MHz
				Number of	Value	Limit	
		Pulse Width	Period	Pulses	(%)	(%)	Results
i		N/A	N/A	5	N/A	N/A	N/A



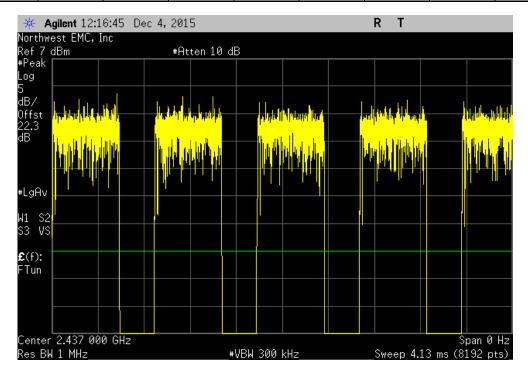
Report No. ELTL0004.1 49/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	598.4 us	917.8 us	1	65.2	N/A	N/A			



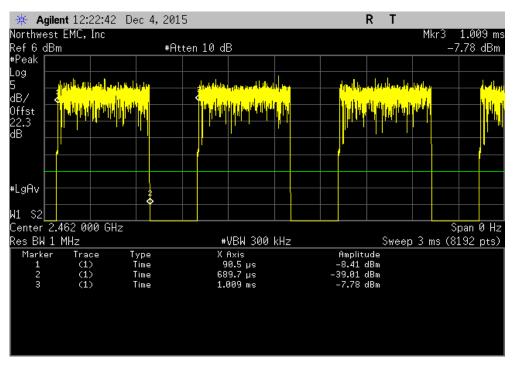
Cha	in B, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid	Channel 6, 2437	MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



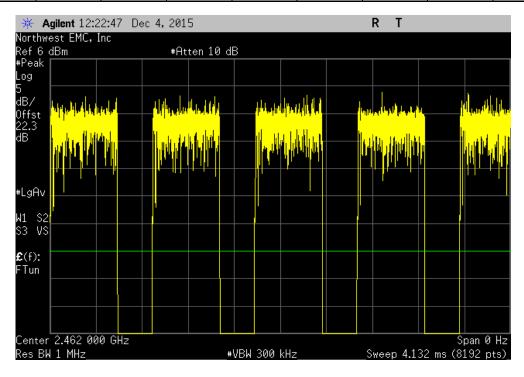
Report No. ELTL0004.1 50/223



Chain B, 20 MHz, 24	00 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS8, High	Channel 11, 2462	2 MHz
		Number of	Value	Limit	
Pulse Width	Period	Pulses	(%)	(%)	Results
599.2 us	918.2 us	1	65.3	N/A	N/A



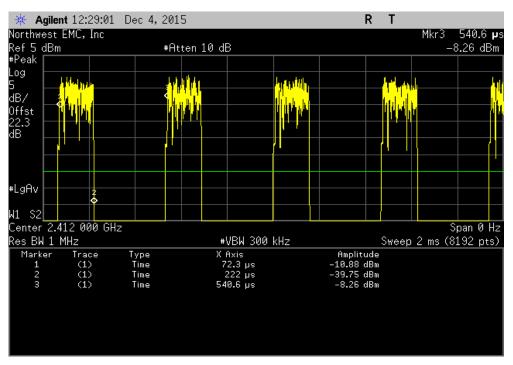
Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.11	I(n) MCS8, High (	Channel 11, 2462	MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



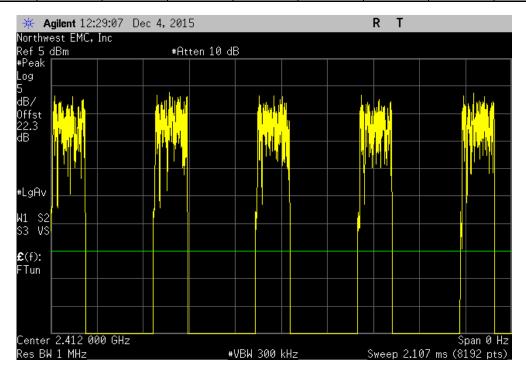
Report No. ELTL0004.1 51/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	149.7 us	468.3 us	1	32	N/A	N/A			



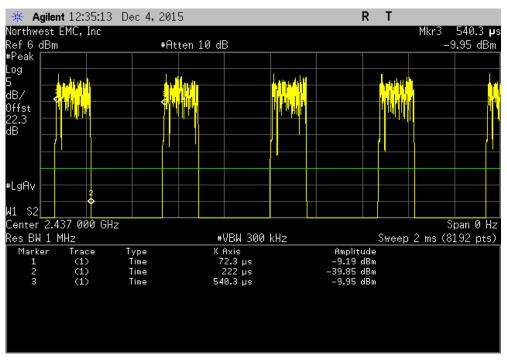
Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz								
			Number of	Value	Limit							
	Pulse Width	Period	Pulses	(%)	(%)	Results						
	N/A	N/A	5	N/A	N/A	N/A						



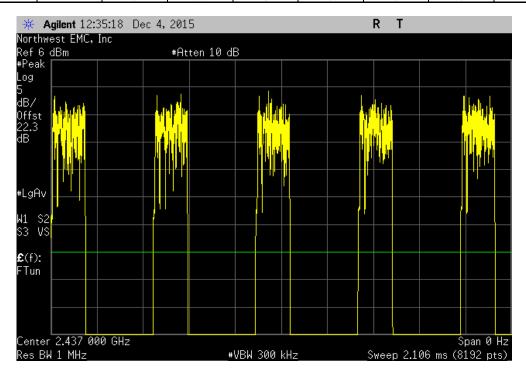
Report No. ELTL0004.1 52/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz									
			Number of	Value	Limit				
	Pulse Width	Period	Pulses	(%)	(%)	Results			
	149.7 us	468 us	1	32	N/A	N/A			



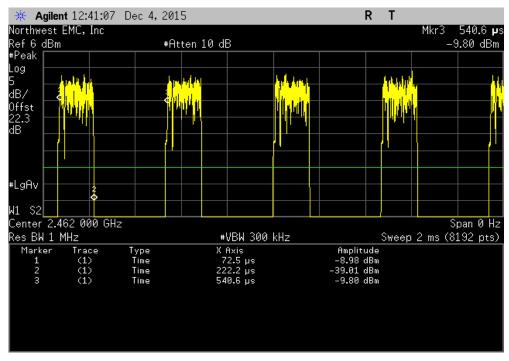
	Cha	in B, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz
				Number of	Value	Limit	
		Pulse Width	Period	Pulses	(%)	(%)	Results
l		N/A	N/A	5	N/A	N/A	N/A



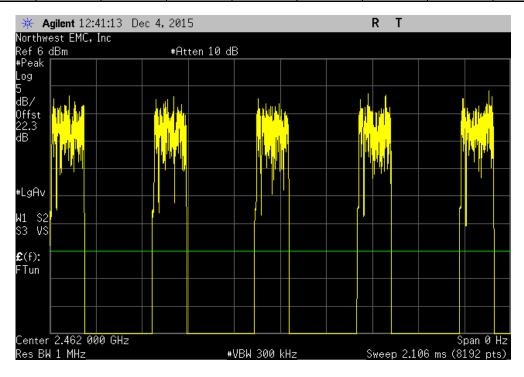
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	Chain B, 20 MHz, 2400	MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
1	149.7 us	468.1 us	1	32	N/A	N/A



Chair	B, 20 MHz, 2400	) MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz
			Number of	Value	Limit	
	Pulse Width	Period	Pulses	(%)	(%)	Results
	N/A	N/A	5	N/A	N/A	N/A



Report No. ELTL0004.1 54/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

	Description	Manufacturer	Model	ID	Last Cal.	Interval
	Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
	Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
•	Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
•	Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
,	Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

The EUT was set to the channels and modes listed in the datasheet. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer.

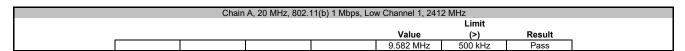
Report No. ELTL0004.1 55/223

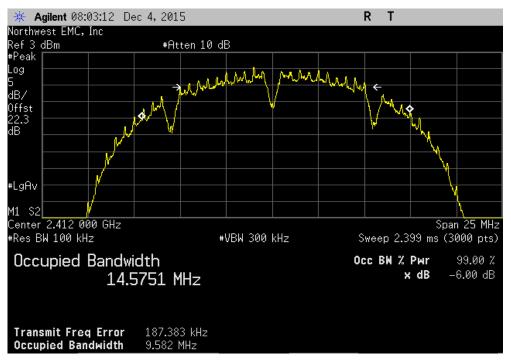


EUT: Marcum	RT-9	Work Order:	FI TI 0004	
Serial Number: RTS0123			12/04/15	
	ic Technologies, LLC	Temperature:		
Attendees: Rocky H		Humidity:		
Project: None		Barometric Pres.:		
Tested by: Trevor B	uls Power: 110VAC/60Hz	Job Site:		
ST SPECIFICATIONS	Test Method			
C 15.247:2015	ANSI C63.10:2013			
MMENTS				
ne				
VIATIONS FROM TEST ST	TANDARD			
ne			<u>'</u>	
	5 Signature Trevor Buls			
onfiguration #	5 Just Buls			
	Signature			
		Value	Limit (>)	Result
ain A		Fuido	(*)	Result
20 MHz				
	802.11(b) 1 Mbps			
	Low Channel 1, 2412 MHz	9.582 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	10.052 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	9.863 MHz	500 kHz	Pass
	802.11(b) 11 Mbps			
	Low Channel 1, 2412 MHz	10.103 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	9.995 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	9.856 MHz	500 kHz	Pass
	802.11(g) 6 Mbps	44,000,1411	500111	
	Low Channel 1, 2412 MHz	14.999 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	13.862 MHz 13.8 MHz	500 kHz 500 kHz	Pass Pass
	High Channel 11, 2462 MHz	13.0 MITZ	DUU KITZ	Pass
	802.11(g) 36 Mbps Low Channel 1, 2412 MHz	14.742 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	15.023 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	14.951 MHz	500 kHz	Pass
	802.11(g) 54 Mbps	14.931 WHZ	JUU KIIZ	F d 5 5
	Low Channel 1, 2412 MHz	15.269 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	15.325 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	15.092 MHz	500 kHz	Pass
	802.11(n) MCS0	10.002 WH IZ	000 KHZ	1 433
	Low Channel 1, 2412 MHz	13.98 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	14.623 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	14.81 MHz	500 kHz	Pass
	802.11(n) MCS7			1
	Low Channel 1, 2412 MHz	15.47 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	15.032 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	14.895 MHz	500 kHz	Pass
40 MHz				
	802.11(n) MCS0			
	Low Channel 1/5, 2422 MHz	28.923 MHz	500 kHz	Pass
	Mid Channel 4/8, 2437 MHz	33.344 MHz	500 kHz	Pass
	High Channel 7/11, 2452 MHz	33.099 MHz	500 kHz	Pass
	802.11(n) MCS7			
	Low Channel 1/5, 2422 MHz	33.419 MHz	500 kHz	Pass
	Mid Channel 4/8, 2437 MHz High Channel 7/11, 2452 MHz	34.67 MHz 35.053 MHz	500 kHz 500 kHz	Pass Pass

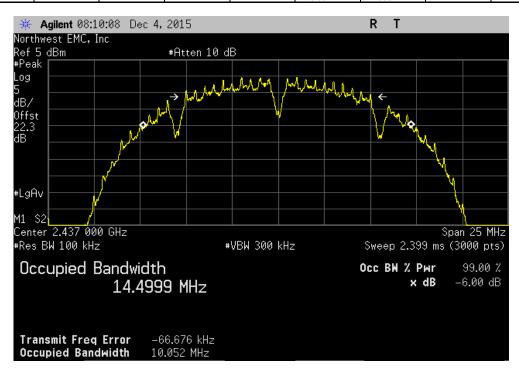
Report No. ELTL0004.1 56/223





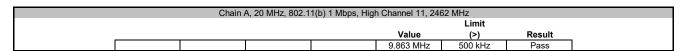


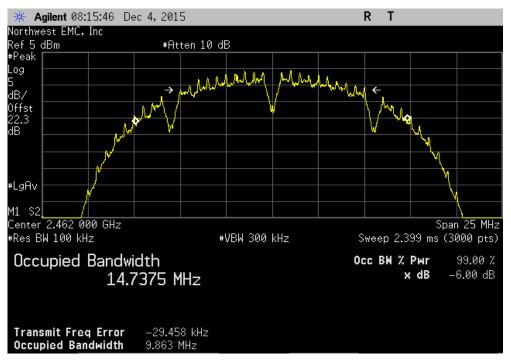
	Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz									
	Limit									
_					Value	(>)	Result	_		
l					10.052 MHz	500 kHz	Pass	1		



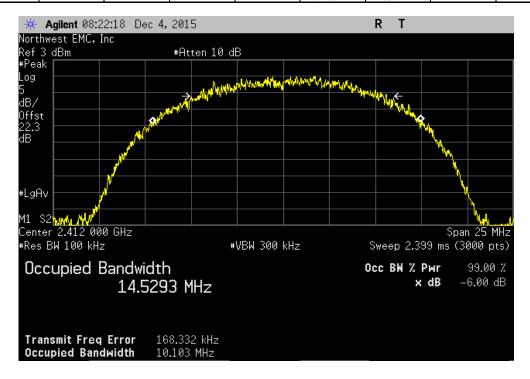
Report No. ELTL0004.1 57/223





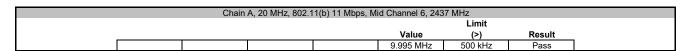


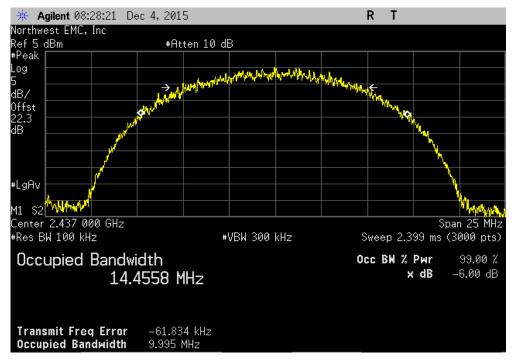
	Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz									
	Limit									
_					Value	(>)	Result			
					10.103 MHz	500 kHz	Pass			



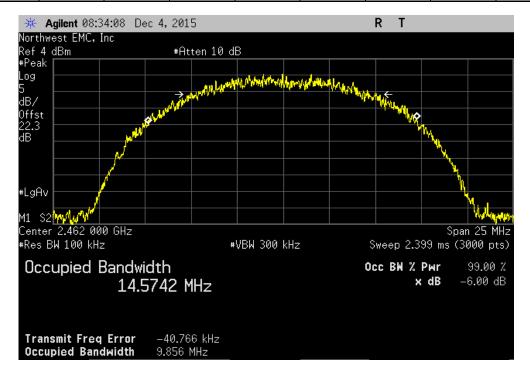
Report No. ELTL0004.1 58/223





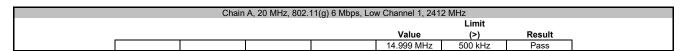


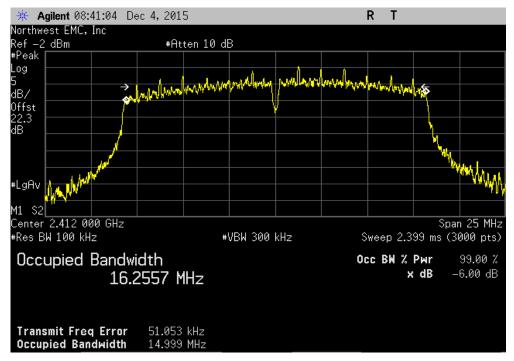
	Chain A, 20 MHz, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz									
		Limit								
_					Value	(>)	Result			
					9.856 MHz	500 kHz	Pass	1		



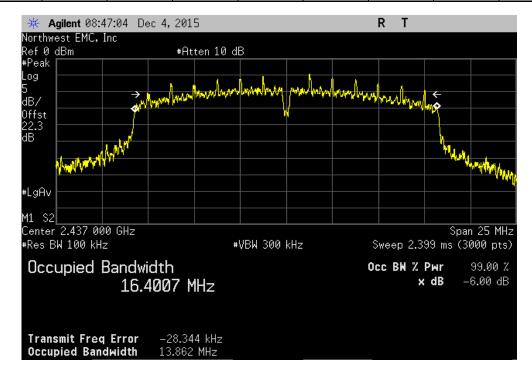
Report No. ELTL0004.1 59/223





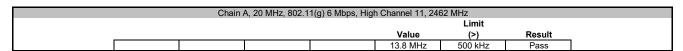


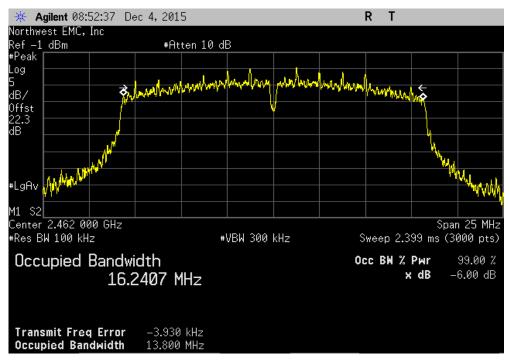
	Chain A, 20 MHz, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz									
		Limit								
					Value	(>)	Result			
l					13.862 MHz	500 kHz	Pass			



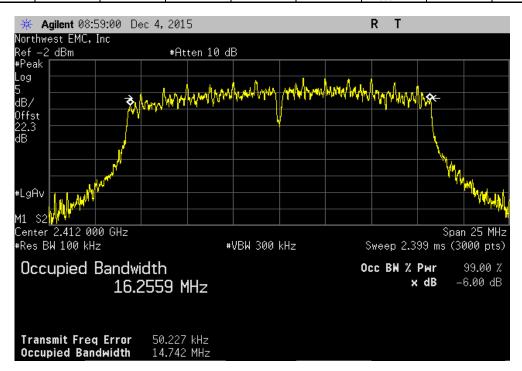
Report No. ELTL0004.1 60/223





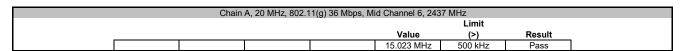


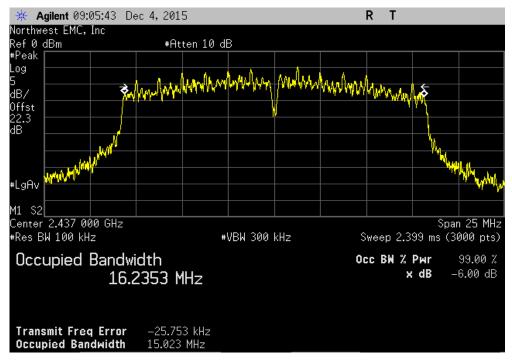
Chain A, 20 MHz, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz									
Limit									
				Value	(>)	Result			
				14.742 MHz	500 kHz	Pass			



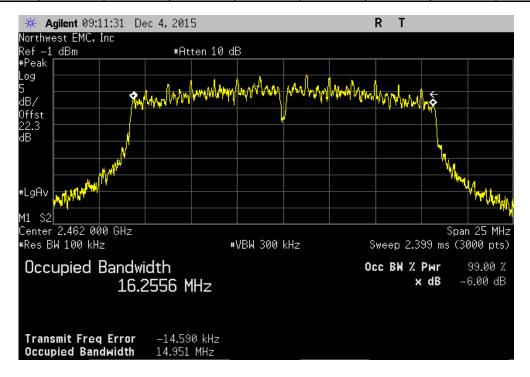
Report No. ELTL0004.1 61/223





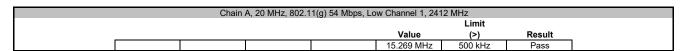


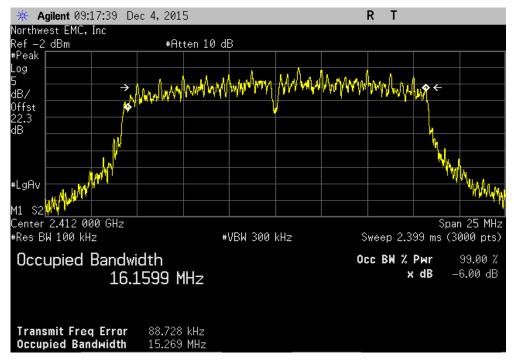
Chain A, 20 MHz, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz									
	Limit								
_					Value	(>)	Result		
ĺ					14.951 MHz	500 kHz	Pass	Ī	



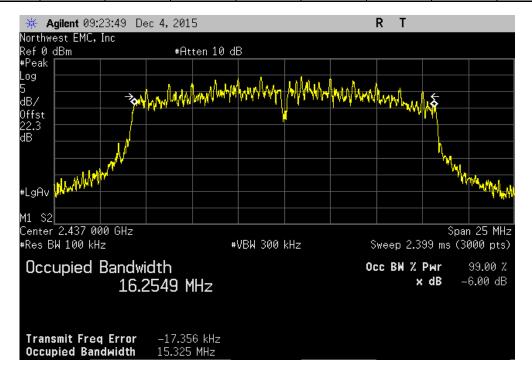
Report No. ELTL0004.1 62/223





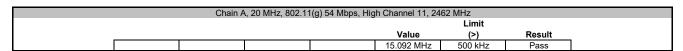


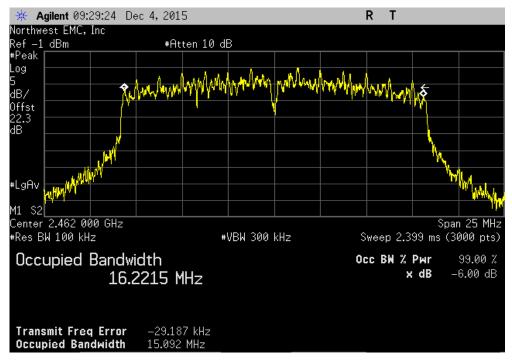
Chain A, 20 MHz, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz									
	Limit								
					Value	(>)	Result		
					15.325 MHz	500 kHz	Pass		



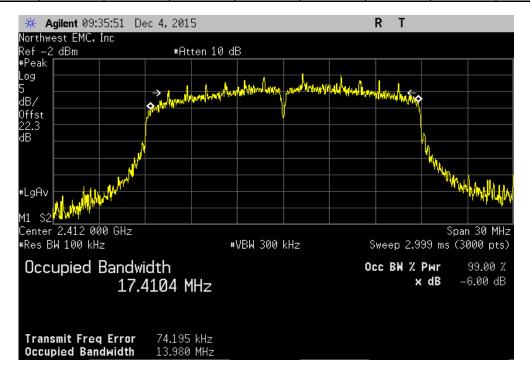
Report No. ELTL0004.1 63/223





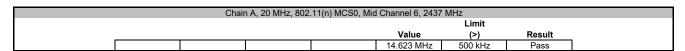


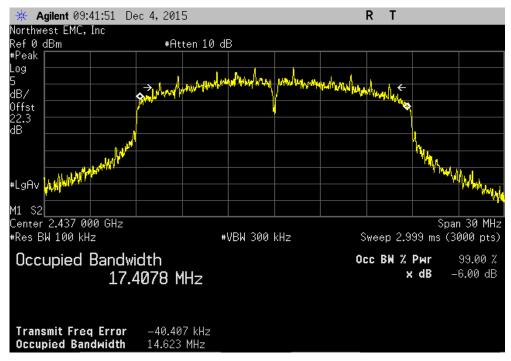
Chain A, 20 MHz, 802.11(n) MCS0, Low Channel 1, 2412 MHz										
	Limit									
_					Value	(>)	Result			
					13.98 MHz	500 kHz	Pass	I		



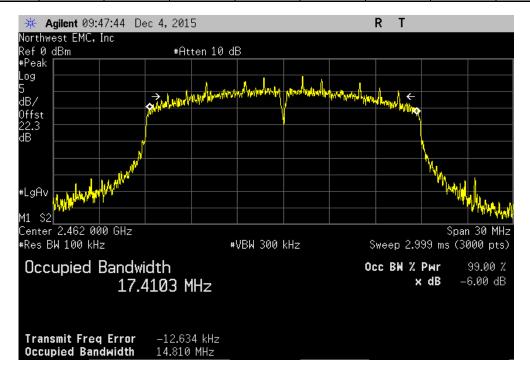
Report No. ELTL0004.1 64/223





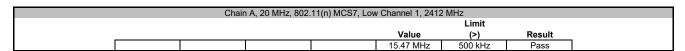


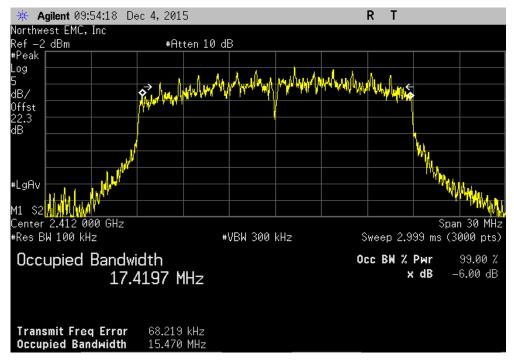
	Chain A, 20 MHz, 802.11(n) MCS0, High Channel 11, 2462 MHz									
	Limit									
_					Value	(>)	Result			
ı					14.81 MHz	500 kHz	Pass			



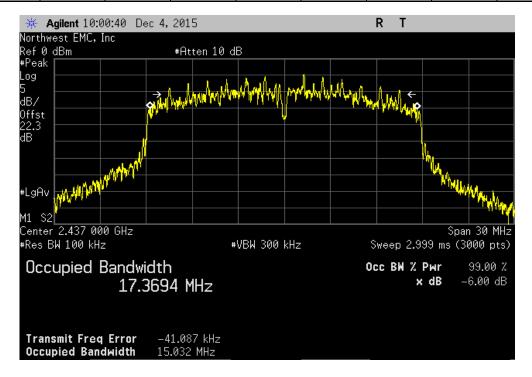
Report No. ELTL0004.1 65/223





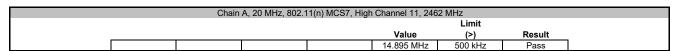


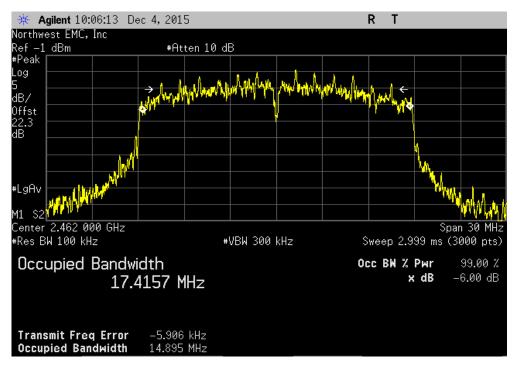
	Chain A, 20 MHz, 802.11(n) MCS7, Mid Channel 6, 2437 MHz									
	Limit									
_					Value	(>)	Result	_		
	•				15.032 MHz	500 kHz	Pass	I		



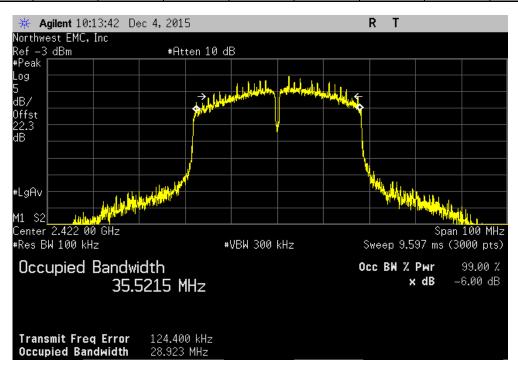
Report No. ELTL0004.1 66/223





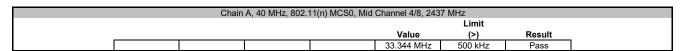


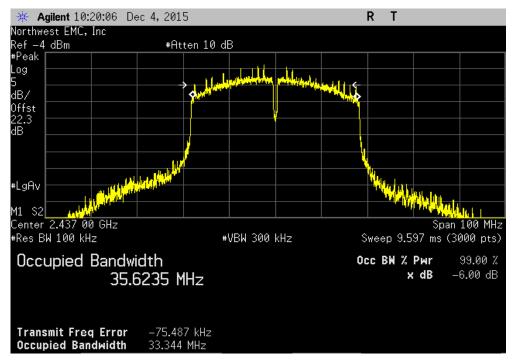
Chain A, 40 MHz, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz									
	Limit								
_					Value	(>)	Result		
					28.923 MHz	500 kHz	Pass	I	



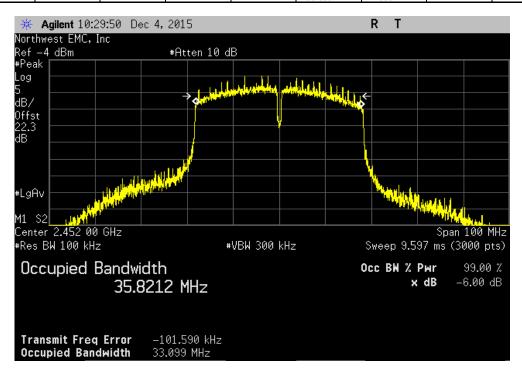
Report No. ELTL0004.1 67/223





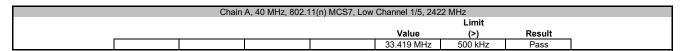


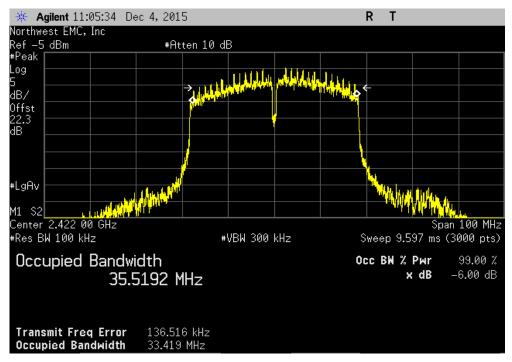
	Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz									
		Limit								
					Value	(>)	Result			
l					33.099 MHz	500 kHz	Pass	il.		



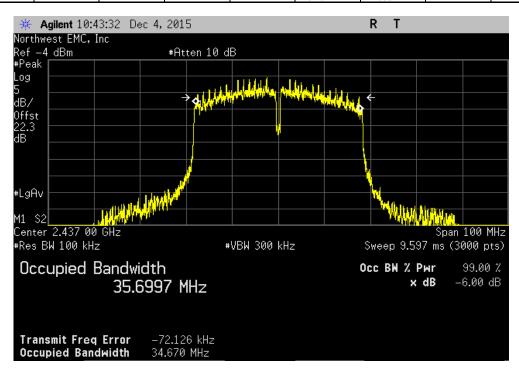
Report No. ELTL0004.1 68/223





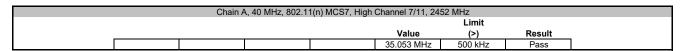


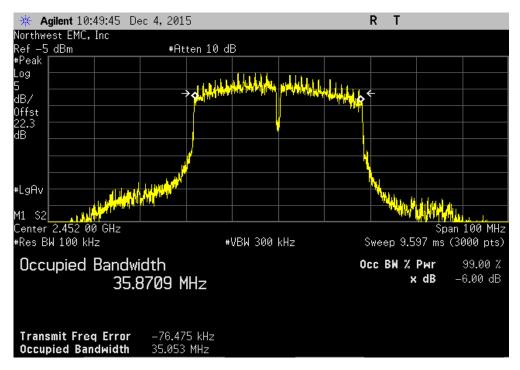
	Chain	A, 40 MHz, 802.1	11(n) MCS7, Mid	Channel 4/8, 243	7 MHz	
					Limit	
_				Value	(>)	Result
				34.67 MHz	500 kHz	Pass



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Report No. ELTL0004.1 70/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

		40" "							
Description		Manufacturer	Model	ID	Last Cal.	Interval			
	Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12			
	Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12			
	Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12			
	Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36			
	Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12			

#### **TEST DESCRIPTION**

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

The EUT was set to the channels and modes listed in the datasheet. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer.

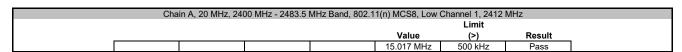
Report No. ELTL0004.1 71/223

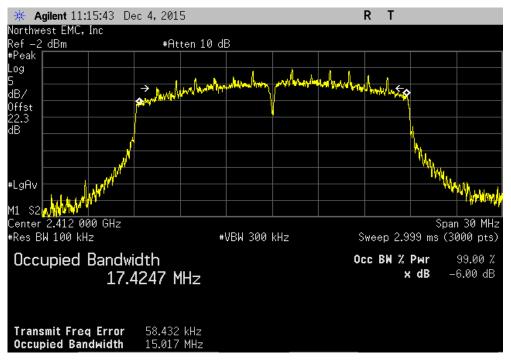


	Marcum RT-9	Marcum RT-9				Work Order: ELTL0004				
Serial Number:	RTS0123456811					Date: 12/04/15				
Customer:	Electronic Technologies		Temperature: 22.2°C							
	Rocky Holmes, Deb See		Humidity: 25%							
Project:						998.9				
	Trevor Buls		Power: 110VAC/60Hz		Job Site:	MN08				
TEST SPECIFICAT	IONS		Test Method							
FCC 15.247:2015	FCC 15.247:2015 ANSI C63.10:2013									
COMMENTS	COMMENTS									
None										
DEVIATIONS FROM	DEVIATIONS FROM TEST STANDARD									
None	II ILUI GIARDARD									
140110			2 0							
Configuration #	5		revor Buls							
•		Signature	levo c vines							
		· · · · · · · · · · · · · · · · · · ·				Limit				
					Value	(>)	Result			
Chain A										
	20 MHz									
	2400 MHz - 2	2483.5 MHz Band								
		802.11(n) MCS8								
		Low Channel 1, 2412 MHz			5.017 MHz	500 kHz	Pass			
	Mid Channel 6, 2437 MHz High Channel 11, 2462 MF				5.011 MHz	500 kHz	Pass			
		1	5.006 MHz	500 kHz	Pass					
	802.11(n) MCS15  Low Channel 1, 2412 MHz 15, 336 MHz 500 kHz Pass									
	Low Channel 1, 2412 MHz					500 kHz	Pass			
		Mid Channel 6, 2437 MHz			5.057 MHz	500 kHz	Pass			
		High Channel 11, 2462 MF		1	5.122 MHz	500 kHz	Pass			
Chain B										
	20 MHz									
	2400 MHz - 2	2483.5 MHz Band								
		802.11(n) MCS8								
		Low Channel 1, 2412 MHz			5.055 MHz	500 kHz	Pass			
		Mid Channel 6, 2437 MHz			4.888 MHz	500 kHz	Pass			
		High Channel 11, 2462 MF		1	5.019 MHz	500 kHz	Pass			
		802.11(n) MCS15								
		Low Channel 1, 2412 MHz			5.183 MHz	500 kHz	Pass			
		Low Channel 1, 2412 MHz Mid Channel 6, 2437 MHz High Channel 11, 2462 MH		1	5.183 MHz 5.088 MHz 15.04 MHz	500 kHz 500 kHz 500 kHz	Pass Pass Pass			

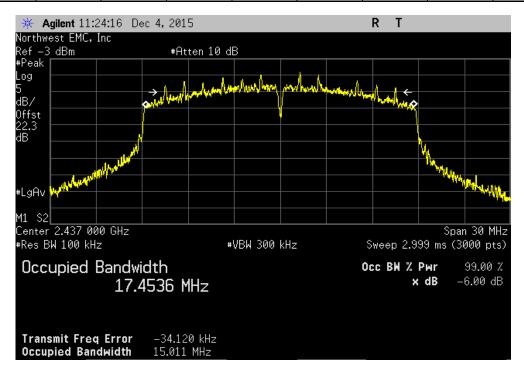
Report No. ELTL0004.1 72/223







	Cha	in A, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid	Channel 6, 2437 I	MHz
						Limit	
_					Value	(>)	Result
ſ					15.011 MHz	500 kHz	Pass



Report No. ELTL0004.1 73/223

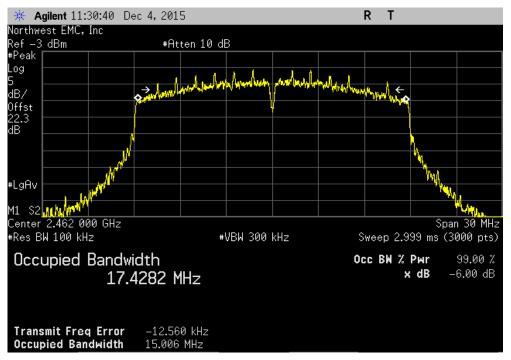


Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

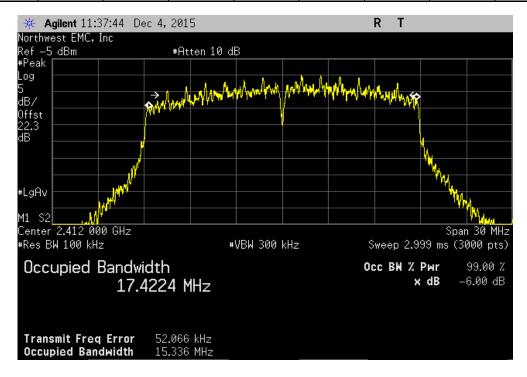
Limit

Value (>) Result

15.006 MHz 500 kHz Pass

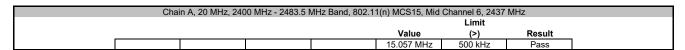


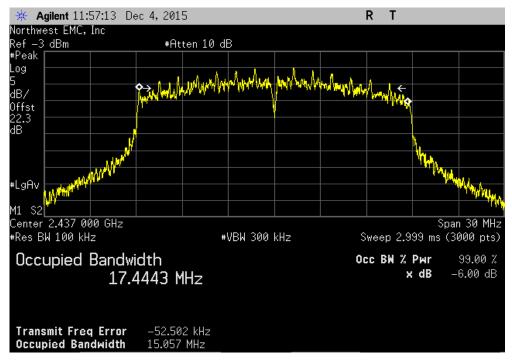
Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	I(n) MCS15, Low	Channel 1, 2412	MHz	
					Limit		
				Value	(>)	Result	
				15.336 MHz	500 kHz	Pass	1



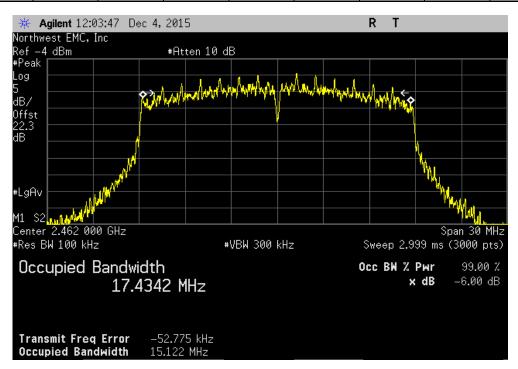
Report No. ELTL0004.1 74/223





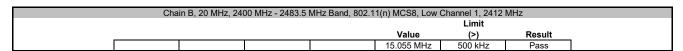


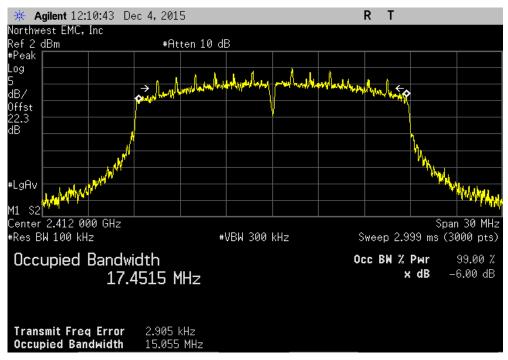
	Chair	A, 20 MHz, 2400	0 MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz	
						Limit		
					Value	(>)	Result	
l					15.122 MHz	500 kHz	Pass	1



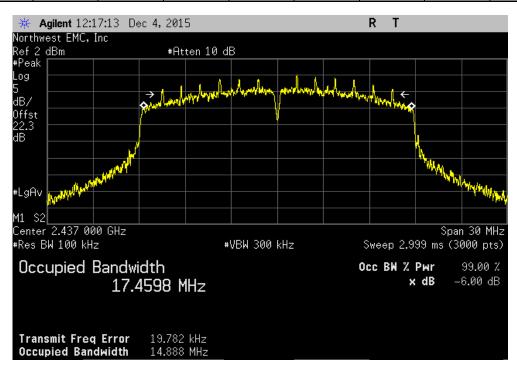
Report No. ELTL0004.1 75/223





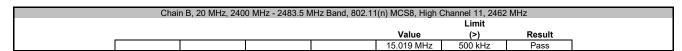


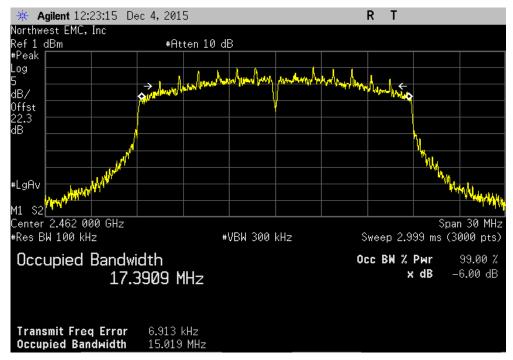
Cha	in B, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid (	Channel 6, 2437 I	MHz	
					Limit		
				Value	(>)	Result	_
		•		14.888 MHz	500 kHz	Pass	1



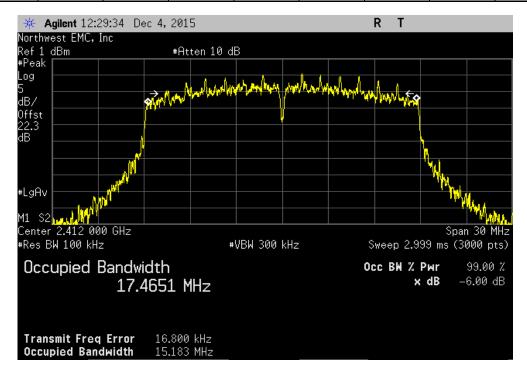
Report No. ELTL0004.1 76/223





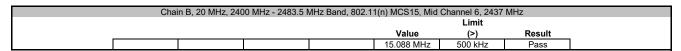


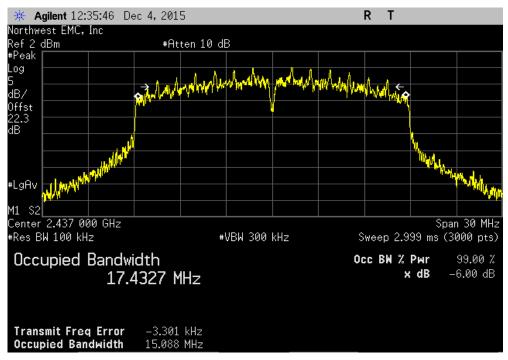
Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.11	I(n) MCS15, Low	Channel 1, 2412	MHz	
					Limit		
				Value	(>)	Result	
				15.183 MHz	500 kHz	Pass	



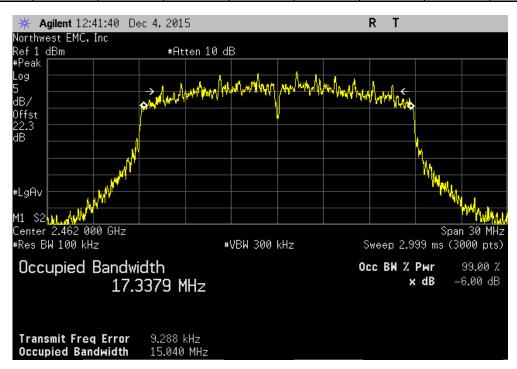
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Chain	B, 20 MHz, 2400	MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz	
					Limit		
				Value	(>)	Result	
				15.04 MHz	500 kHz	Pass	I



Report No. ELTL0004.1 78/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

Report No. ELTL0004.1

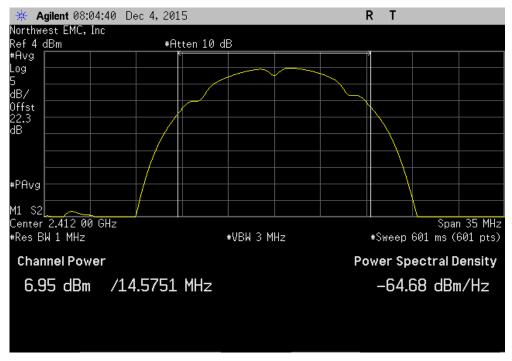


EUT: Marcum				Work Order:		
Serial Number: RTS012	3456811				12/04/15	
Customer: Electron	ic Technologies, LLC			Temperature:	22.2°C	
Attendees: Rocky H	olmes, Deb See			Humidity:	25%	
Project: None				Barometric Pres.:	998.9	
Tested by: Trevor E	Buls	Power: 110VAC/60Hz		Job Site:	MN08	
ST SPECIFICATIONS		Test Method				
C 15.247:2015		ANSI C63.10:2013				
MMENTS						
ne						
VIATIONS FROM TEST S	TANDARD					
ne						
		Trevor Buls				
nfiguration #	5	Jan or Bull				
	Signature					
		Avg Cond	Duty Cycle	Value	Limit	
		Pwr (dBm)	Factor (dB)	(dBm)	(dBm)	Results
ain A						
20 MHz						
	802.11(b) 1 Mbps					<u>_</u>
	Low Channel 1, 2412 MHz	6.953	0.5	7.4	30	Pass
	Mid Channel 6, 2437 MHz	8.674	0.5	9.1	30	Pass
	High Channel 11, 2462 MHz	8.053	0.5	8.5	30	Pass
	802.11(b) 11 Mbps					_
	Low Channel 1, 2412 MHz	5.449	2.6	8.1	30	Pass
	Mid Channel 6, 2437 MHz	6.812	2.7	9.5	30	Pass
	High Channel 11, 2462 MHz	6.227	2.7	8.9	30	Pass
	802.11(g) 6 Mbps	4.000	0.0	2.0	20	D
	Low Channel 1, 2412 MHz	1.068	2.3	3.3	30	Pass
	Mid Channel 6, 2437 MHz	2.609	2.3	4.9	30	Pass
	High Channel 11, 2462 MHz	2.014	2.3	4.3	30	Pass
	802.11(g) 36 Mbps	-3.382	6.8	3.4	30	Pass
	Low Channel 1, 2412 MHz Mid Channel 6, 2437 MHz	-3.362 -1.453	6.8	5.3	30	Pass
	High Channel 11, 2462 MHz 802.11(g) 54 Mbps	-2.357	6.8	4.4	30	Pass
	Low Channel 1, 2412 MHz	-4.548	7.9	3.4	30	Pass
	Mid Channel 6, 2437 MHz	-2.811	7.9	5.1	30	Pass
	High Channel 11, 2462 MHz	-3.416	7.9	4.5	30	Pass
	802.11(n) MCS0	-5.410	7.9	4.5	30	газэ
	Low Channel 1, 2412 MHz	0.836	2.6	3.4	30	Pass
	Mid Channel 6, 2437 MHz	2.485	2.6	5	30	Pass
	High Channel 11, 2462 MHz	1.893	2.6	4.5	30	Pass
	802.11(n) MCS7	1.093	2.0	4.0		1 433
	Low Channel 1, 2412 MHz	-4.426	8.1	3.6	30	Pass
	Mid Channel 6, 2437 MHz	-2.765	8.1	5.3	30	Pass
	High Channel 11, 2462 MHz	-3.389	8.1	4.7	30	Pass
40 MHz		3.000				, 100
	802.11(n) MCS0					
	Low Channel 1/5, 2422 MHz	3.204	1.2	4.4	30	Pass
	Mid Channel 4/8, 2437 MHz	3.597	1.2	4.8	30	Pass
	High Channel 7/11, 2452 MHz	3.288	1.2	4.5	30	Pass
	802.11(n) MCS7	3.200				
		-1.95	6.1	4.1	30	Pass
	LOW Channel 1/5, 2422 MHz					
	Low Channel 1/5, 2422 MHz Mid Channel 4/8, 2437 MHz	-1.58	6.1	4.5	30	Pass

Report No. ELTL0004.1 80/223



Chain	A, 20 MHz, 802.1	11(b) 1 Mbps, Lov	v Channel 1, 241	2 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
6.953	0.5		7.4	30	Pass



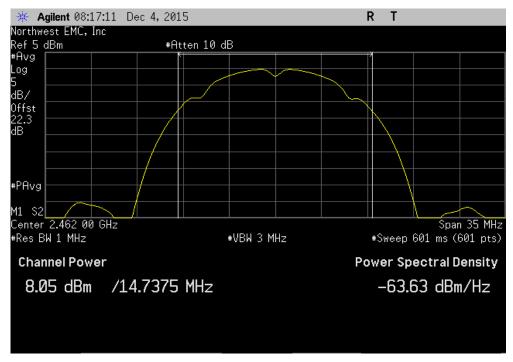
	Chain	A, 20 MHz, 802.	11(b) 1 Mbps, Mid	d Channel 6, 243	7 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
	8.674	0.5		9.1	30	Pass



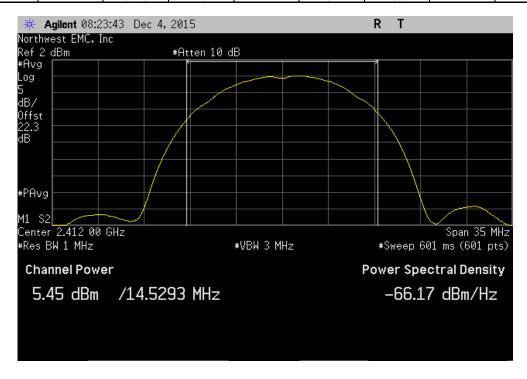
Report No. ELTL0004.1 81/223



Chain	A, 20 MHz, 802.1	1(b) 1 Mbps, High	n Channel 11, 24	62 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
8.053	0.5		8.5	30	Pass



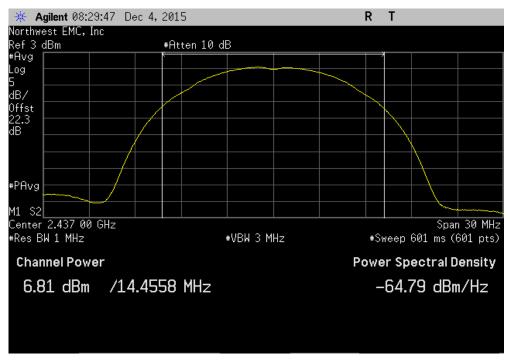
	Chain .	A, 20 MHz, 802.1	1(b) 11 Mbps, Lo	w Channel 1, 24	12 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
_	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l l	5.449	2.6		8.1	30	Pass



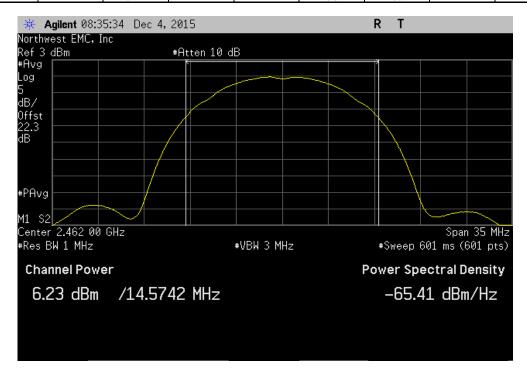
Report No. ELTL0004.1 82/223



	Chain .	A, 20 MHz, 802.1	1(b) 11 Mbps, Mi	d Channel 6, 243	7 MHz	
	Avg Cond	<b>Duty Cycle</b>		Value	Limit	
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
	6.812	2.7		9.5	30	Pass



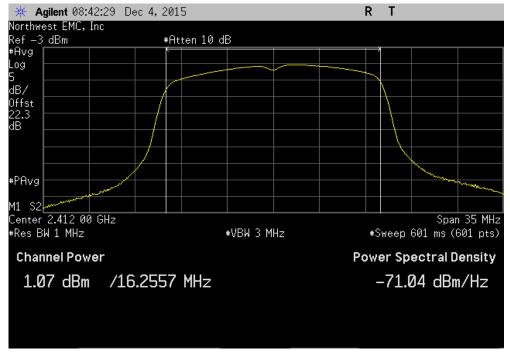
		Chain A	i, 20 MHz, 802.11	1(b) 11 Mbps, Hig	h Channel 11, 24	62 MHz	
		Avg Cond	Duty Cycle		Value	Limit	
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l	<u> </u>	6.227	2.7		8.9	30	Pass



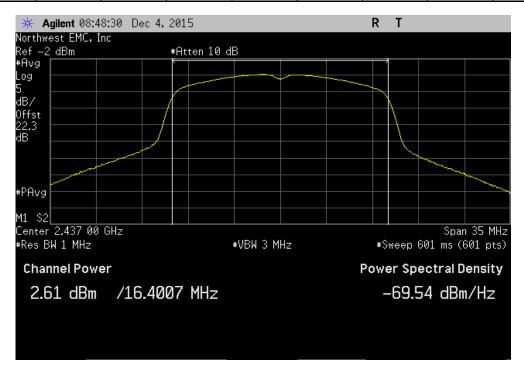
Report No. ELTL0004.1 83/223



Chain	A, 20 MHz, 802.	11(g) 6 Mbps, Lov	w Channel 1, 241	2 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
1.068	2.3		3.3	30	Pass



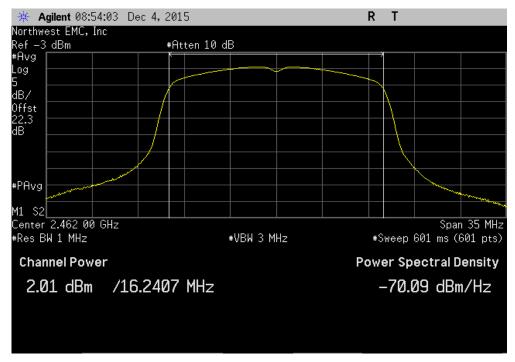
	Chain	A, 20 MHz, 802.	11(g) 6 Mbps, Mid	d Channel 6, 243	7 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
	2.609	2.3		4.9	30	Pass



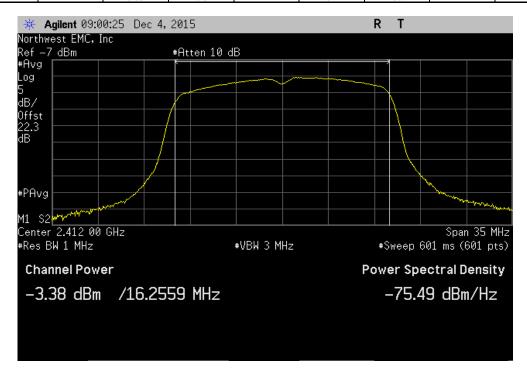
Report No. ELTL0004.1 84/223



Chain /	A, 20 MHz, 802.1	1(g) 6 Mbps, High	n Channel 11, 246	62 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
2.014	2.3		4.3	30	Pass



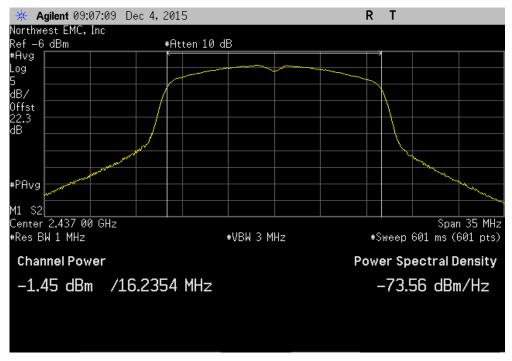
	Chain .	A, 20 MHz, 802.1	1(g) 36 Mbps, Lo	w Channel 1, 24	12 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
_	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l	-3.382	6.8		3.4	30	Pass



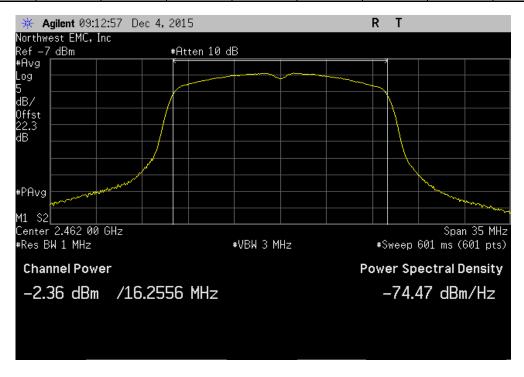
Report No. ELTL0004.1 85/223



	Chain .	A, 20 MHz, 802.1	1(g) 36 Mbps, Mi	id Channel 6, 243	7 MHz	
	Avg Cond	<b>Duty Cycle</b>		Value	Limit	
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
	-1.453	6.8		5.3	30	Pass



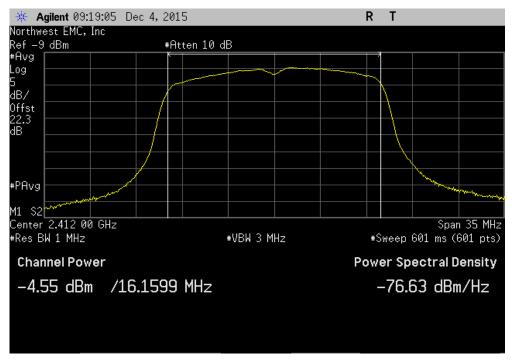
	Chain A	i, 20 MHz, 802.11	1(g) 36 Mbps, Hig	h Channel 11, 24	62 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
	-2.357	6.8		4.4	30	Pass



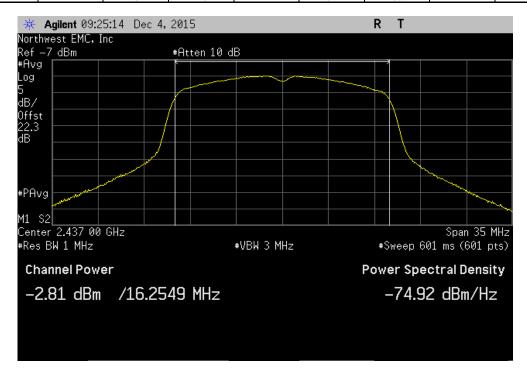
Report No. ELTL0004.1 86/223



Chain /	A, 20 MHz, 802.1	1(g) 54 Mbps, Lo	w Channel 1, 241	2 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
-4.548	7.9		3.4	30	Pass



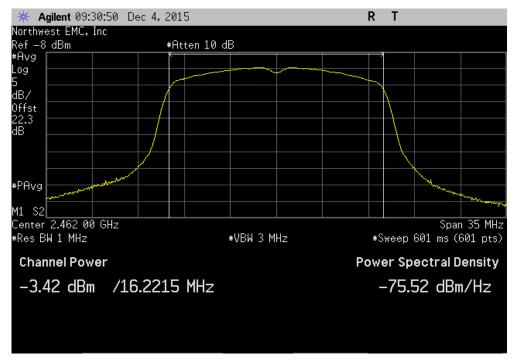
	Chain .	A, 20 MHz, 802.1	1(g) 54 Mbps, Mi	id Channel 6, 243	37 MHz	
	Avg Cond	<b>Duty Cycle</b>		Value	Limit	
_	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l	-2.811	7.9		5.1	30	Pass



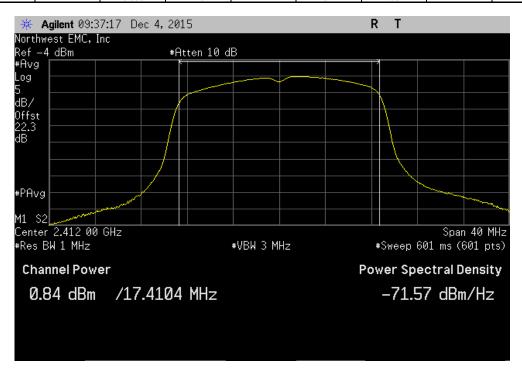
Report No. ELTL0004.1 87/223



Chain A	A, 20 MHz, 802.11	1(g) 54 Mbps, Hig	h Channel 11, 24	62 MHz	
Avg Cond	Duty Cycle		Value	Limit	
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
-3.416	7.9		4.5	30	Pass



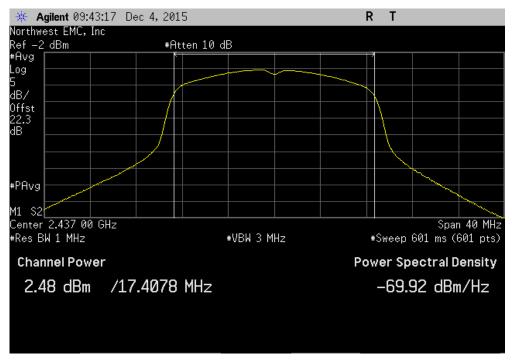
	Chair	A, 20 MHz, 802.	.11(n) MCS0, Low	/ Channel 1, 2412	2 MHz	
	Avg Cond	<b>Duty Cycle</b>		Value	Limit	
_	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l í	0.836	2.6		3.4	30	Pass



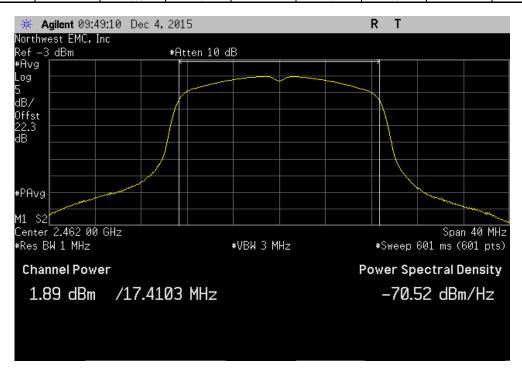
Report No. ELTL0004.1 88/223



Chain A, 20 MHz, 802.11(n) MCS0, Mid Channel 6, 2437 MHz									
	Avg Cond	Duty Cycle		Value	Limit				
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
	2.485	2.6		5	30	Pass			



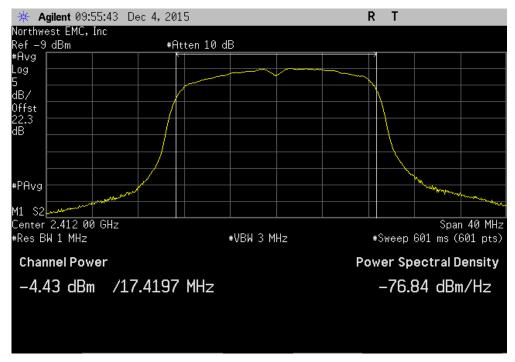
	Chain A, 20 MHz, 802.11(n) MCS0, High Channel 11, 2462 MHz									
		Avg Cond	Duty Cycle		Value	Limit				
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
	·	1.893	2.6		4.5	30	Pass			



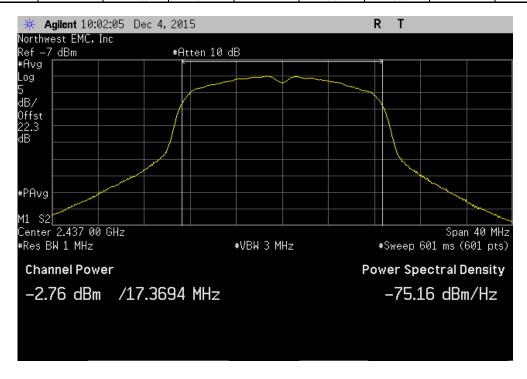
Report No. ELTL0004.1 89/223



Chain A, 20 MHz, 802.11(n) MCS7, Low Channel 1, 2412 MHz										
	Avg Cond	Duty Cycle		Value	Limit					
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
	-4.426	8.1		3.6	30	Pass				



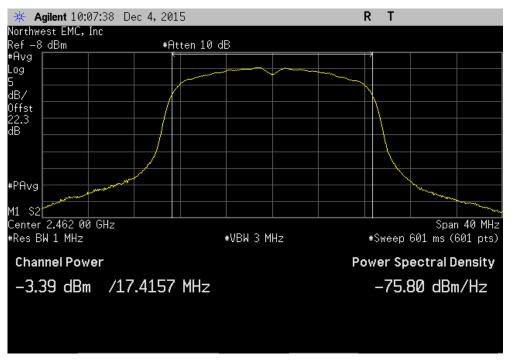
	Chain A, 20 MHz, 802.11(n) MCS7, Mid Channel 6, 2437 MHz									
		Avg Cond	Duty Cycle		Value	Limit				
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
l l	<u> </u>	-2.765	8.1		5.3	30	Pass			



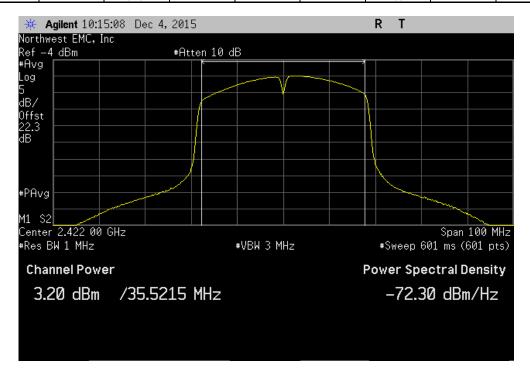
Report No. ELTL0004.1 90/223



Chain A, 20 MHz, 802.11(n) MCS7, High Channel 11, 2462 MHz										
	Avg Cond	Duty Cycle		Value	Limit					
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
	-3.389	8.1		4.7	30	Pass				



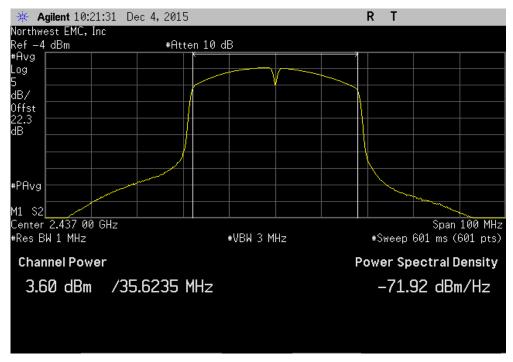
	Chain A, 40 MHz, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz									
		Avg Cond	Duty Cycle		Value	Limit				
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
l		3.204	1.2		4.4	30	Pass			



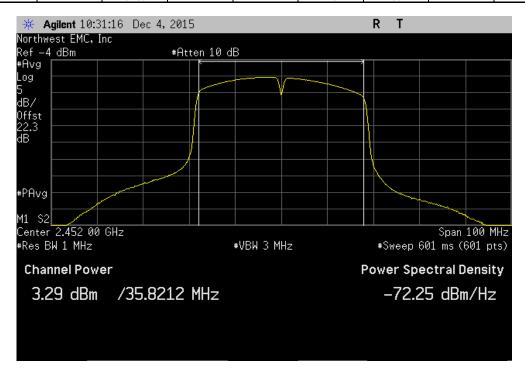
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Chain A, 40 MHz, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz									
	Avg Cond	Duty Cycle		Value	Limit				
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
	3.597	1.2		4.8	30	Pass			



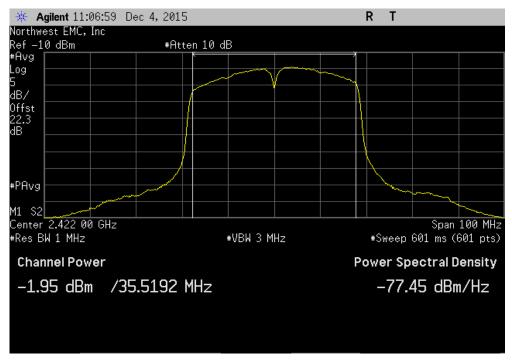
	Chain A	A, 40 MHz, 802.1	1(n) MCS0, High	Channel 7/11, 24	52 MHz	
	Avg Cond	Duty Cycle		Value	Limit	
_	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
ı	3.288	1.2		4.5	30	Pass



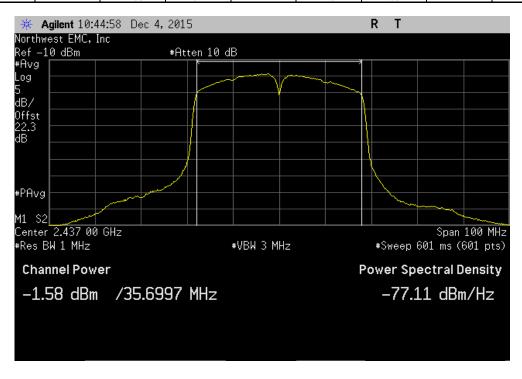
Report No. ELTL0004.1 92/223



Chain A, 40 MHz, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz									
Avg Cond	Duty Cycle		Value	Limit					
Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
-1.95	6.1		4.1	30	Pass				



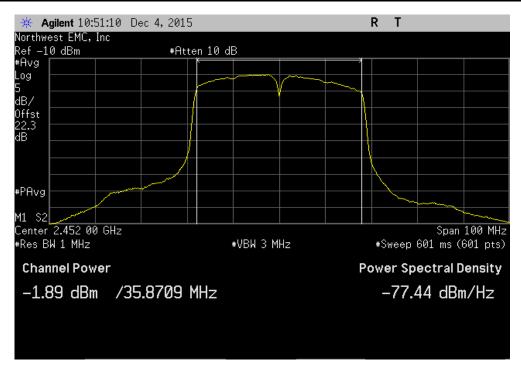
	Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz									
		Avg Cond	<b>Duty Cycle</b>		Value	Limit				
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
ĺ		-1.58	6.1		4.5	30	Pass			



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Chain A, 40 MHz, 802.11(n) MCS7, High Channel 7/11, 2452 MHz									
Avg Cond Duty Cycle					Value	Limit			
		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results		
		-1.892	6.1		4.2	30	Pass		



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring output power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The method AVGSA-2 in section 11.9.2.2.4 of ANSI C63.10:2013 was used to make the measurement. This method uses trace averaging across ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

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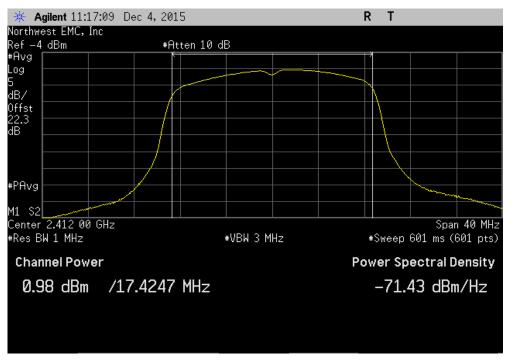


EUT: Mar	cum RT-9						Work Order:	FI TI 0004	
Serial Number: RTS								12/04/15	
	tronic Technologies	i. LLC					Temperature:		
	ky Holmes, Deb See						Humidity:		
Project: Non							Barometric Pres.:		
Tested by: Trev			Power: 1	10VAC/60Hz			Job Site:	MN08	
TEST SPECIFICATIONS			T	est Method					
FCC 15.247:2015			Α	NSI C63.10:2013					
COMMENTS									
None									
DEVIATIONS FROM TES	ST STANDARD								
None									
			revor	0 1.					
Configuration #	5		MODITON	Bull					
		Signature	10000						
I				Avg Cond	Duty Cycle		Value	Limit	
01 : 4				Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
Chain A	0.1-								
20 N		0400 F MI I- D d							
	2400 MHZ -	2483.5 MHz Band 802.11(n) MCS8							
		Low Channel 1, 2412 MHz		0.979	1.8		2.8	30	Pass
		Mid Channel 6, 2437 MHz		0.979	1.9		2.6	30	Pass
		High Channel 11, 2462 MF		-0.072	1.8		1.8	30	Pass
		802.11(n) MCS15	IZ	-0.072	1.0		1.0	30	1 000
		Low Channel 1, 2412 MHz		-4.62	4.9		0.3	30	Pass
		Mid Channel 6, 2437 MHz		-2.915	4.9		2	30	Pass
		High Channel 11, 2462 MH		-3.392	4.9		1.5	30	Pass
Chain B		, , , , , , , , , , , , , , , , , , ,							
20 N	1Hz								
	2400 MHz -	2483.5 MHz Band							
		802.11(n) MCS8							
		Low Channel 1, 2412 MHz		4.874	1.9		6.7	30	Pass
		Mid Channel 6, 2437 MHz		4.951	1.9		6.8	30	Pass
		High Channel 11, 2462 MF	łz	4.886	1.9		6.7	30	Pass
		802.11(n) MCS15							
		Low Channel 1, 2412 MHz		1.937	4.9		6.9	30	Pass
		Mid Channel 6, 2437 MHz		2.352	4.9		7.3	30	Pass
Oh -i AD		High Channel 11, 2462 MF	1Z	1.99	4.9	Ohala AD	6.9	30	Pass
Chain AB	0.1=			Chain A Avg Cond	Chain B Avg Cond	Chain AB Avg Cond	Chain AB Avg Cond	Limit	
20 N		2483.5 MHz Band							Desults
	2400 MITZ -	802.11(n) MCS8		Pwr (mW)	Pwr (mW)	Pwr (mW)	Pwr (dBm)	(dBm)	Results
		Low Channel 1, 2412 MHz		1.90	4.76	6.65	8.2	30	Pass
		Mid Channel 6, 2437 MHz		1.82	4.84	6.66	8.2	30	Pass
		High Channel 11, 2462 MF		1.49	4.77	6.26	8.0	30	Pass
		802.11(n) MCS15	-			0.20	0.0		. 400
		Low Channel 1, 2412 MHz		1.07	4.83	5.89	7.7	30	Pass
		Mid Channel 6, 2437 MHz		1.58	5.31	6.89	8.4	30	Pass
		High Channel 11, 2462 MH	łz	1.42	4.89	6.30	8.0	30	Pass
		<b>y</b> ,							

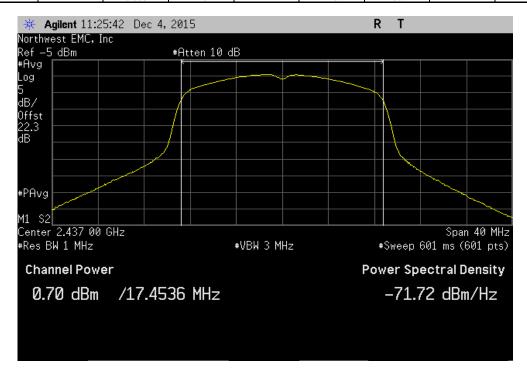
Report No. ELTL0004.1 96/223



Cha	in A, 20 MHz, 240	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Low	Channel 1, 2412	MHz			
Avg Cond Duty Cycle Value Limit									
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results			
	0.979	1.8		2.8	30	Pass			



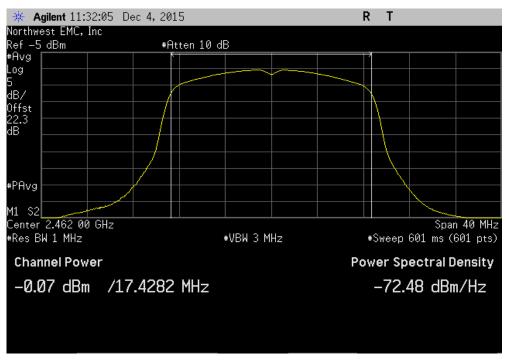
	Cha	in A, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid	Channel 6, 2437	MHz				
		Avg Cond Duty Cycle Value Limit									
		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
ĺ		0.695	1.9		2.5	30	Pass				



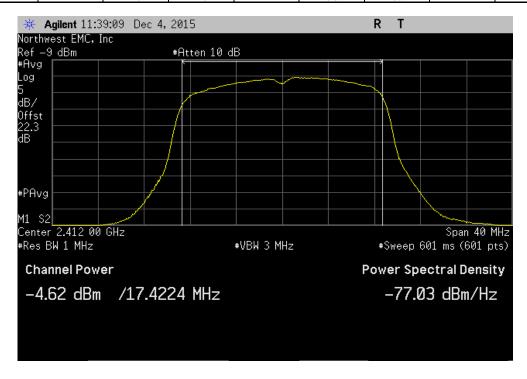
Report No. ELTL0004.1 97/223



Chair	n A, 20 MHz, 240	0 MHz - 2483.5 M	1Hz Band, 802.11	(n) MCS8, High (	Channel 11, 2462	MHz	
	Avg Cond	<b>Duty Cycle</b>		Value	Limit		
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results	
	-0.072	1.8		1.8	30	Pass	



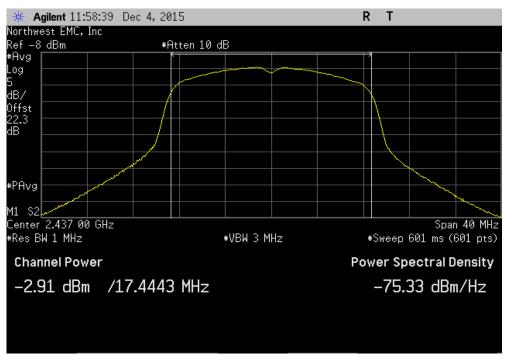
	Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.11	I(n) MCS15, Low	Channel 1, 2412	MHz				
		Avg Cond Duty Cycle Value Limit									
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
i [	<u> </u>	-4.62	4.9		0.3	30	Pass				



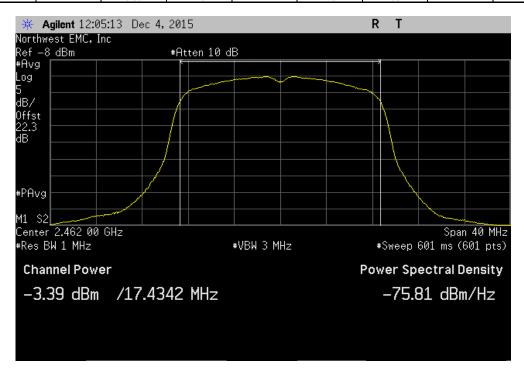
Report No. ELTL0004.1 98/223



Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz	
	Avg Cond	Duty Cycle		Value	Limit		
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results	
	-2.915	4.9		2	30	Pass	



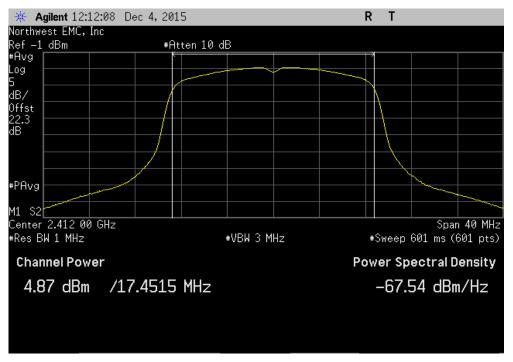
	Chair	n A, 20 MHz, 2400	MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz				
		Avg Cond Duty Cycle Value Limit									
		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
1		-3.392	4.9		1.5	30	Pass				



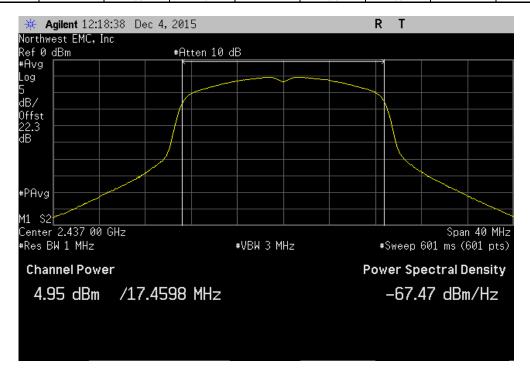
Report No. ELTL0004.1 99/223



	Cha	in B, 20 MHz, 240	00 MHz - 2483.5 I	MHz Band, 802.1	1(n) MCS8, Low	Channel 1, 2412	MHz				
		Avg Cond Duty Cycle Value Limit									
		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
1		4.874	1.9		6.7	30	Pass				



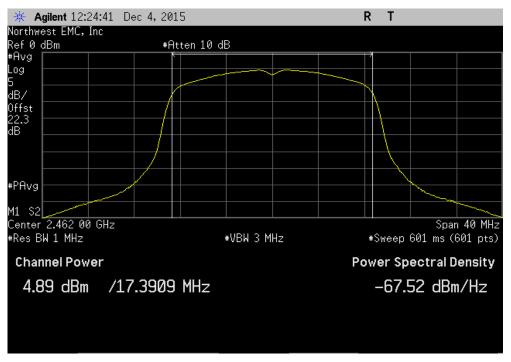
	Cha	in B, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Mid	Channel 6, 2437 I	MHz				
		Avg Cond Duty Cycle Value Limit									
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
ĺ		4.951	1.9		6.8	30	Pass				



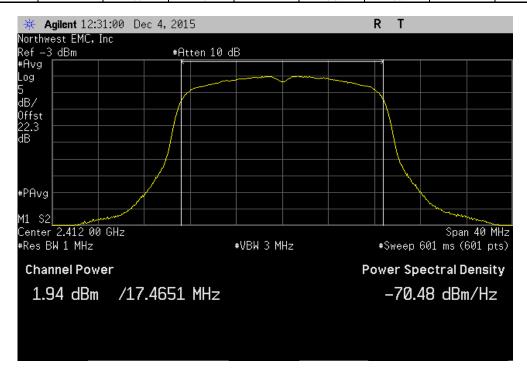
Report No. ELTL0004.1 100/223



Chair	n B, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.11	(n) MCS8, High (	Channel 11, 2462	MHz	
	Avg Cond	Duty Cycle		Value	Limit		
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results	
	4.886	1.9		6.7	30	Pass	



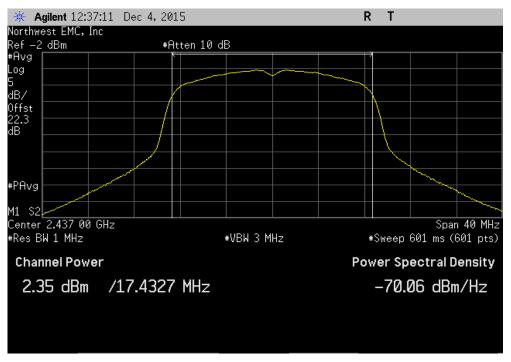
	Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.11	I(n) MCS15, Low	Channel 1, 2412	MHz				
		Avg Cond Duty Cycle Value Limit									
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results				
i í		1.937	4.9		6.9	30	Pass				



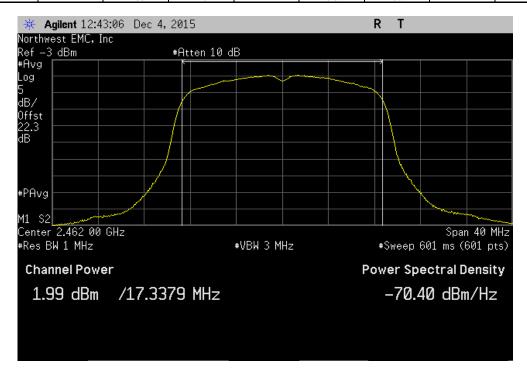
Report No. ELTL0004.1 101/223



Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.11	1(n) MCS15, Mid	Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz										
	Avg Cond	Duty Cycle		Value	Limit										
	Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results									
	2.352	4.9		7.3	30	Pass									



	Chair	B, 20 MHz, 2400	) MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High	Channel 11, 2462	2 MHz
		Avg Cond	Duty Cycle		Value	Limit	
_		Pwr (dBm)	Factor (dB)		(dBm)	(dBm)	Results
l		1.99	4.9		6.9	30	Pass



Report No. ELTL0004.1 102/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

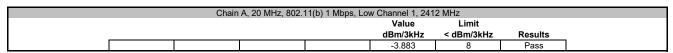
Report No. ELTL0004.1 103/223

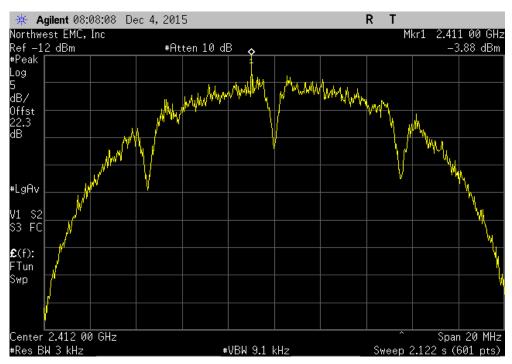


FUT	Marcum RT-9					Mark Outer	ELTI 0004	1
				Work Order: ELTL0004  Date: 12/04/15				
	RTS0123456811							
	Electronic Technolo					Temperature:		
	Rocky Holmes, Deb	See				Humidity:		
Project:					Ва	rometric Pres.:		
	Trevor Buls		Power:	110VAC/60Hz		Job Site:	MN08	
TEST SPECIFICATION	ONS			Test Method				
FCC 15.247:2015				ANSI C63.10:2013				
COMMENTS								
None								
DEVIATIONS FROM	TEST STANDARD							
None								
HONC	l			- 0				
Configuration #	5		-	Buls				
Comiguration #		Signature	Merrol	· · · · · · · · · · · · · · · · · · ·				
		Signature				Value	Limit	
						dBm/3kHz	< dBm/3kHz	Results
Oh - i A						UDIII/3KHZ	≺ ubili/3kHZ	Results
Chain A	00 1411-							
	20 MHz	*****						
	802.11(	(b) 1 Mbps				0.000		
		Low Channel 1, 2412 MHz				-3.883	8	Pass
		Mid Channel 6, 2437 MHz				-13.633	8	Pass
		High Channel 11, 2462 MHz				-14.429	8	Pass
	802.11(	(b) 11 Mbps						
		Low Channel 1, 2412 MHz				-14.681	8	Pass
		Mid Channel 6, 2437 MHz				-13.863	8	Pass
		High Channel 11, 2462 MHz				-14.78	8	Pass
	802.11(	(g) 6 Mbps						
		Low Channel 1, 2412 MHz				-21.481	8	Pass
		Mid Channel 6, 2437 MHz				-19.048	8	Pass
		High Channel 11, 2462 MHz				-20.079	8	Pass
	802.11(	(g) 36 Mbps						
		Low Channel 1, 2412 MHz				-22.763	8	Pass
		Mid Channel 6, 2437 MHz				-21.239	8	Pass
		High Channel 11, 2462 MHz				-22.103	8	Pass
	802.11(	(g) 54 Mbps						
		Low Channel 1, 2412 MHz				-24.215	8	Pass
		Mid Channel 6, 2437 MHz				-21.707	8	Pass
		High Channel 11, 2462 MHz				-23.099	8	Pass
	802.110	(n) MCS0						
		Low Channel 1, 2412 MHz				-20.272	8	Pass
		Mid Channel 6, 2437 MHz				-19.887	8	Pass
		High Channel 11, 2462 MHz				-20.134	8	Pass
	802.110	(n) MCS7						
	,	Low Channel 1, 2412 MHz				-22.72	8	Pass
		Mid Channel 6, 2437 MHz				-21.377	8	Pass
		High Channel 11, 2462 MHz				-22.574	8	Pass
	40 MHz	g Grannor 11, E10E mile						. 400
		(n) MCS0						
	002.11(	Low Channel 1/5, 2422 MHz				-24.276	8	Pass
		Mid Channel 4/8, 2437 MHz				-23.686	8	Pass
		High Channel 7/11, 2452 MHz				-23.923	8	Pass
	202 11/	(n) MCS7				-23.823	0	газэ
	002.11(					26.42	8	Page
		Low Channel 1/5, 2422 MHz				-26.42		Pass
		Mid Channel 4/8, 2437 MHz				-25.192 -25.146	8 8	Pass Pass
		High Channel 7/11, 2452 MHz				-20.140	0	Pass

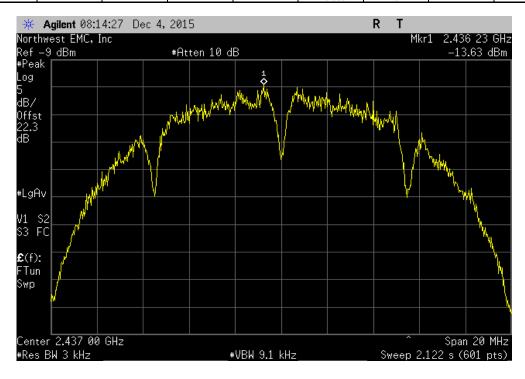
Report No. ELTL0004.1 104/223





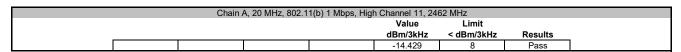


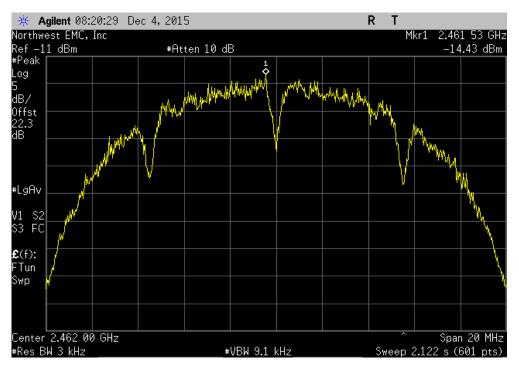
	Chain	A, 20 MHz, 802.	11(b) 1 Mbps, Mi	d Channel 6, 243	7 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-13.633	8	Pass



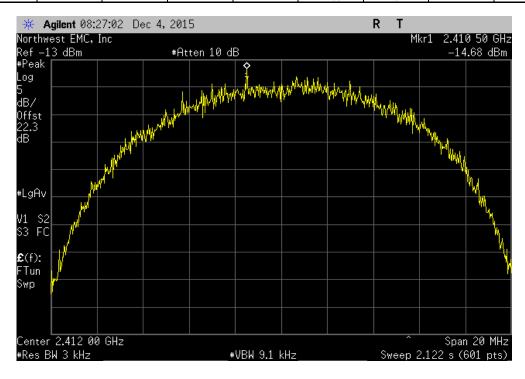
Report No. ELTL0004.1 105/223





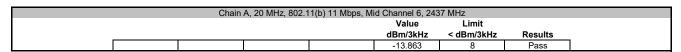


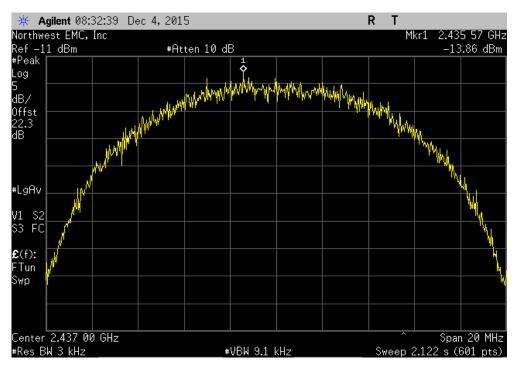
	Chain A	A, 20 MHz, 802.1	1(b) 11 Mbps, Lo	w Channel 1, 24	2 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-14.681	8	Pass



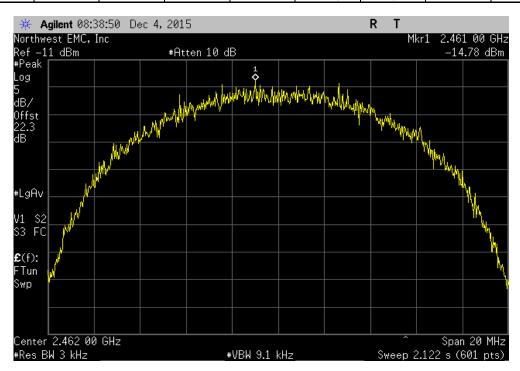
Report No. ELTL0004.1 106/223





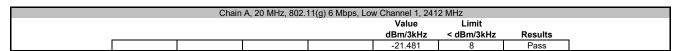


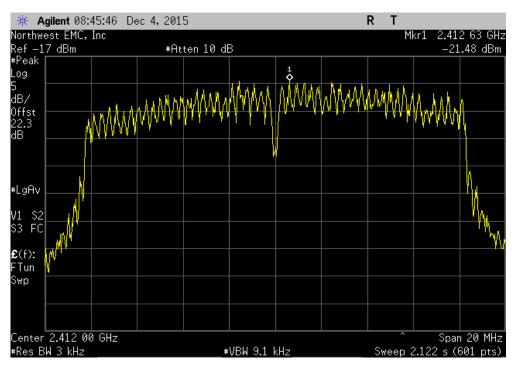
	Chain A,	20 MHz, 802.11	1(b) 11 Mbps, Hig	h Channel 11, 24	62 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-14.78	8	Pass



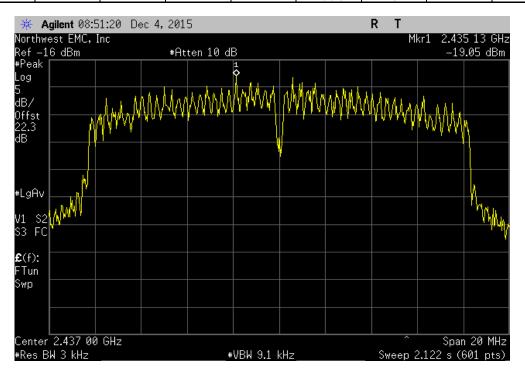
Report No. ELTL0004.1 107/223





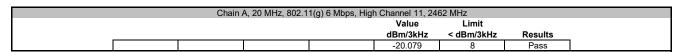


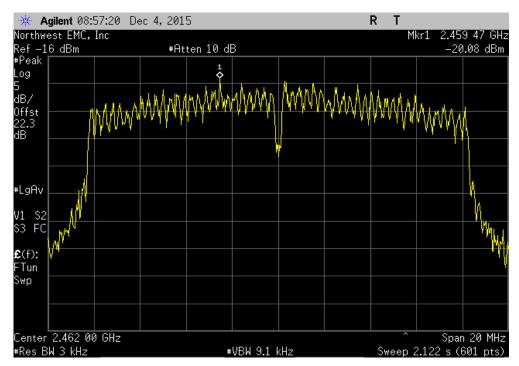
	Chain	A, 20 MHz, 802.	11(g) 6 Mbps, Mi	d Channel 6, 243	7 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-19.048	8	Pass



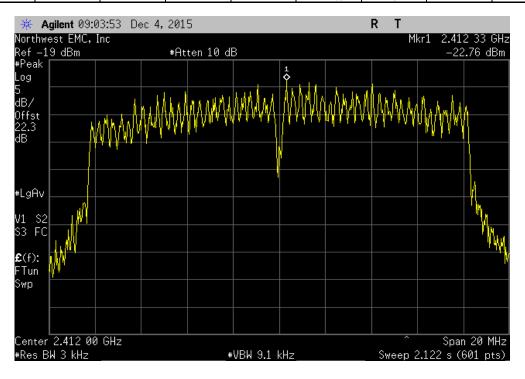
Report No. ELTL0004.1 108/223





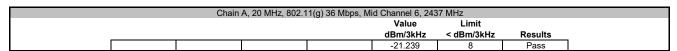


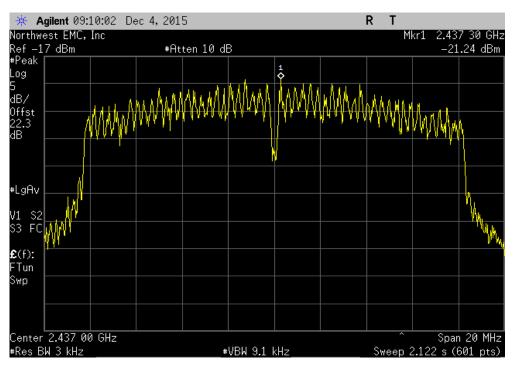
	Chain A,	20 MHz, 802.1	1(g) 36 Mbps, Lo	w Channel 1, 241	2 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-22.763	8	Pass



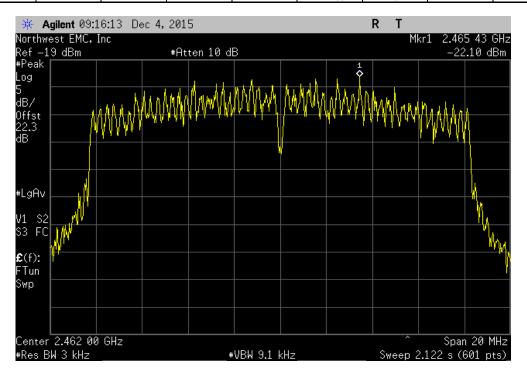
Report No. ELTL0004.1 109/223





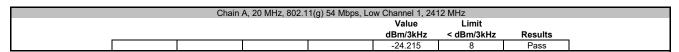


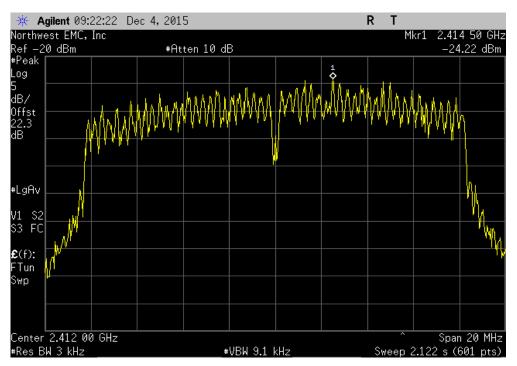
	Chain A	A, 20 MHz, 802.11	I(g) 36 Mbps, Hig	h Channel 11, 24	62 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-22.103	8	Pass



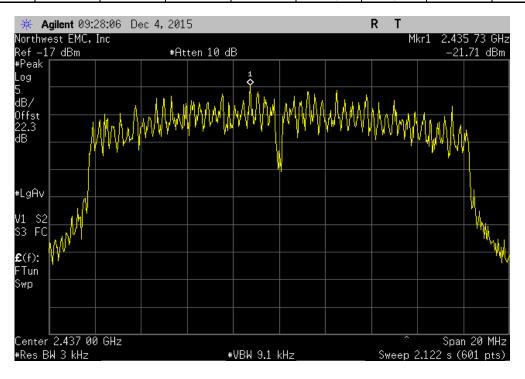
Report No. ELTL0004.1 110/223





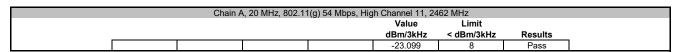


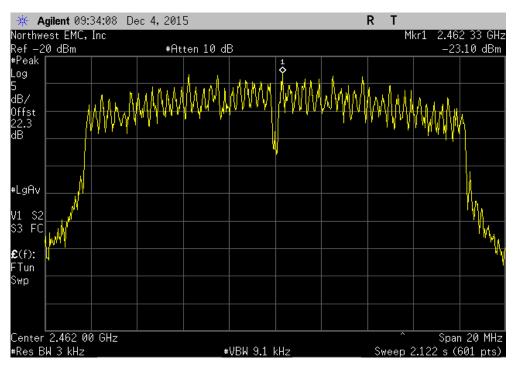
	Chain	A, 20 MHz, 802.1	1(g) 54 Mbps, M	id Channel 6, 243	7 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-21.707	8	Pass



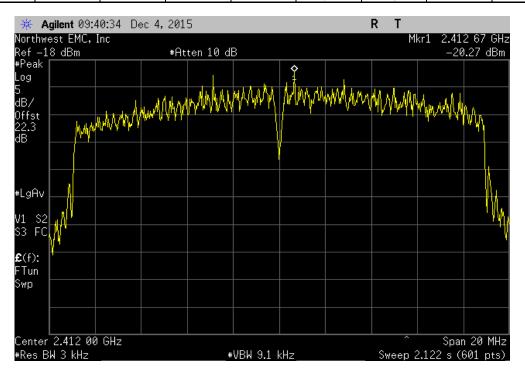
Report No. ELTL0004.1 111/223





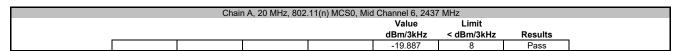


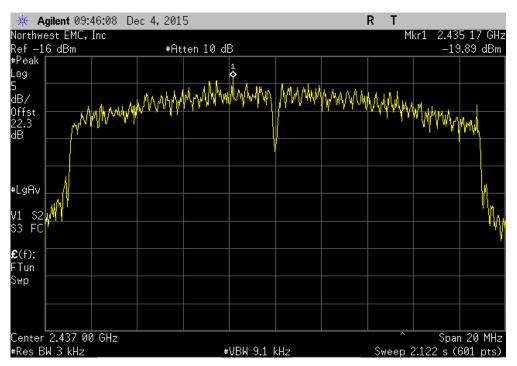
	Chair	n A, 20 MHz, 802.	11(n) MCS0, Lov	/ Channel 1, 2412	2 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-20.272	8	Pass



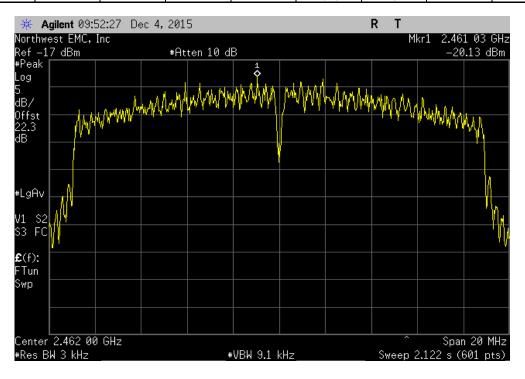
Report No. ELTL0004.1 112/223





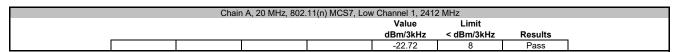


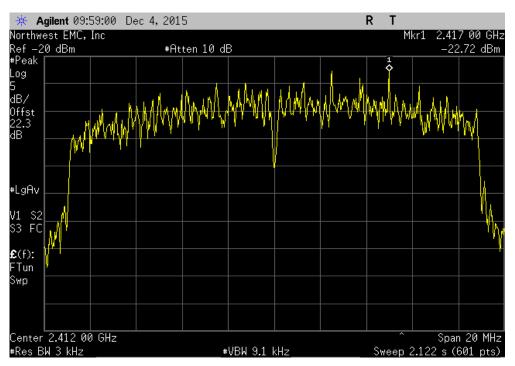
	Chain	A, 20 MHz, 802.1	I1(n) MCS0, High	Channel 11, 246	2 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-20.134	8	Pass



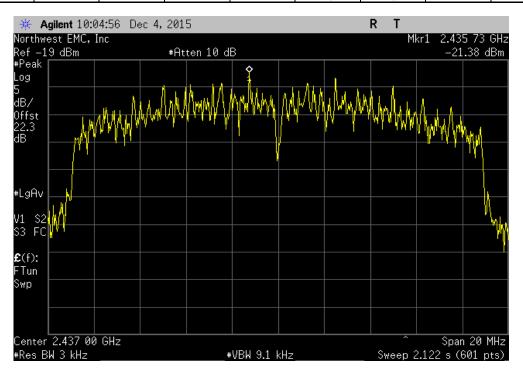
Report No. ELTL0004.1 113/223





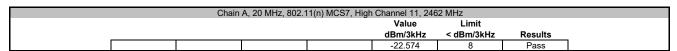


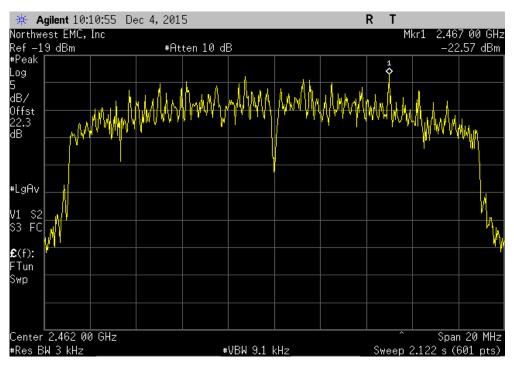
	Chair	n A, 20 MHz, 802.	.11(n) MCS7, Mic	Channel 6, 2437	MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-21.377	8	Pass



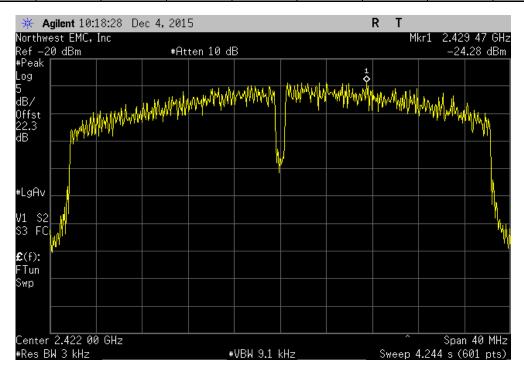
Report No. ELTL0004.1 114/223





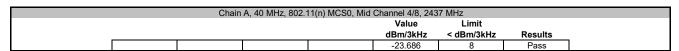


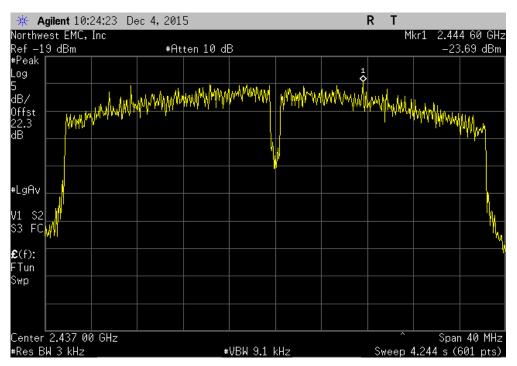
	Chain	A, 40 MHz, 802.1	11(n) MCS0, Low	Channel 1/5, 242	2 MHz	
				Value	Limit	
1				dBm/3kHz	< dBm/3kHz	Results
l				-24.276	0	Pass



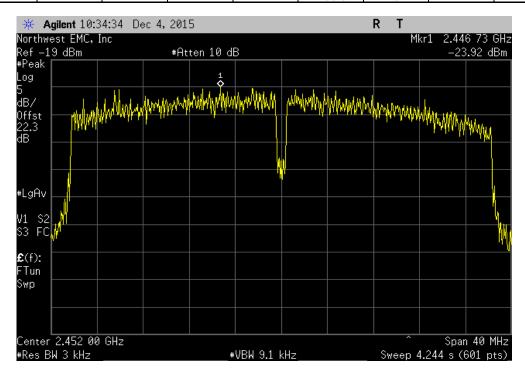
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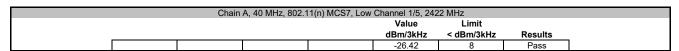


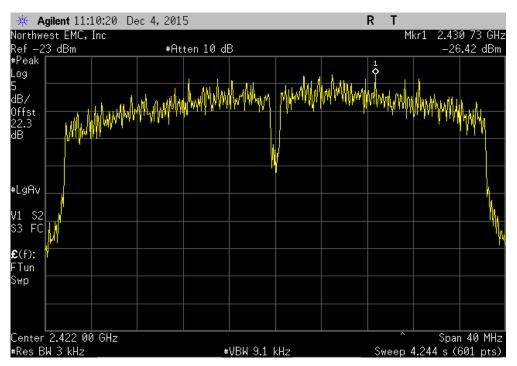
	Chain A	, 40 MHz, 802.1°	1(n) MCS0, High	Channel 7/11, 24	52 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-23.923	8	Pass



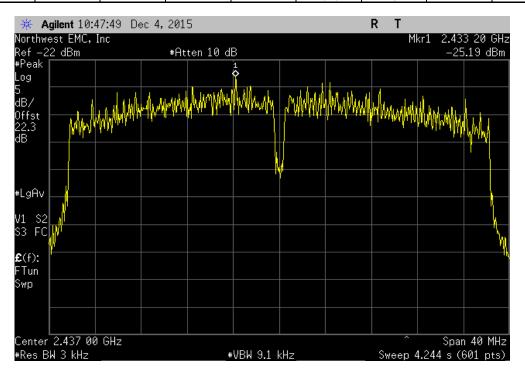
Report No. ELTL0004.1 116/223







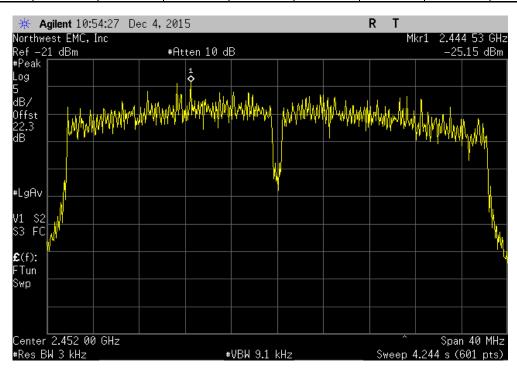
	Chain	A, 40 MHz, 802.	11(n) MCS7, Mid	Channel 4/8, 243	7 MHz	
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-25.192	8	Pass



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	Chain A	A, 40 MHz, 802.1	1(n) MCS7, High	Channel 7/11, 24	52 MHz	
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-25.146	8	Pass



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. External attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

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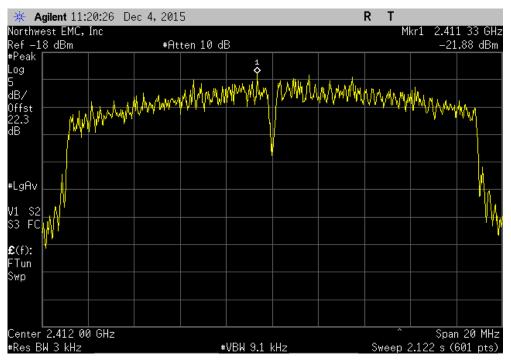


Serial Number:         RTS0123456811         Date:         12/04/15           Customer:         Electronic Technologies, LLC         Temperature:         22.2°C           Attendees:         Rocky Holmes, Deb See         Humidity:         25%           Project:         None         Barometric Press:         998.9           Tested by:         Trevor Buls         Power:         110VAC/60Hz         Job Site:         MN08			
Attendees: Rocky Holmes, Deb See Humidity: 25% Project: None Barometric Pres.: 998.9			
Attendees: Rocky Holmes, Deb See Humidity: 25% Project: None Barometric Pres.: 998.9			
Tested by: Trevor Buls Power: 110VAC/60Hz			
TEST SPECIFICATIONS Test Method			
FCC 15.247:2015 ANSI C63.10:2013			
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration # 5 Signature Trevor Buls			
Signature Value 2x2 MIMO Summed Value Limit			
varie ZAZ minio Summed varie Limit dBm/3kHz Factor (dB) dBm/3kHz < dBm/3kHz	Results		
Chain A	rtoounto		
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz -21.879 3.0 -18.9 8	Pass		
Mid Channel 6, 2437 MHz -22.308 3.0 -19.3 8	Pass		
High Channel 11, 2462 MF -23.577 3.0 -20.6 8	Pass		
802.11(n) MCS15			
Low Channel 1, 2412 MHz -25.458 3.0 -22.4 8	Pass		
Mid Channel 6, 2437 MHz -24.801 3.0 -21.8 8	Pass		
	Pass		
High Channel 11, 2462 MF -25.35 3.0 -22.3 8			
High Channel 11, 2462 MF -25.35 3.0 -22.3 8  Chain B			
High Channel 11, 2462 MF -25.35 3.0 -22.3 8  Chain B 20 MHz			
High Channel 11, 2462 MF -25.35 3.0 -22.3 8    Chain B			
High Channel 11, 2462 MF -25.35 3.0 -22.3 8  Chain B  20 MHz  2400 MHz - 2483.5 MHz Band 802.11(n) MCS8			
High Channel 11, 2462 MF -25.35 3.0 -22.3 8  Chain B  20 MHz 2483.5 MHz Band 802.11(n) MCS Low Channel 1, 2412 MHz -17.927 3.0 -14.9 8	Pass		
High Channel 11, 2462 MF -25.35 3.0 -22.3 8  Chain B  20 MHz  2400 MHz - 2483.5 MHz Band  802.11(n) MCS8  Low Channel 1, 2412 MHz Low Channel 6, 2437 MHz -16.781 3.0 -14.9 8 Mid Channel 6, 2437 MHz -16.781 3.0 -13.8 8	Pass		
High Channel 11, 2462 MF			
High Channel 11, 2462 MF   -25.35   3.0   -22.3   8	Pass Pass		
High Channel 11, 2462 MH  Chain B  20 MHz  2400 MHz - 2483.5 MHz Band  802.11(n) MCS8  Low Channel 1, 2412 MHz  High Channel 11, 2462 MH  802.11(n) MCSS15  Low Channel 1, 2412 MHz  -17.308  802.11(n) MCS15  Low Channel 1, 2412 MHz  -17.308  802.11(n) MCS15  Low Channel 1, 2412 MHz  -17.992  3.0  -15.0  8	Pass Pass Pass		
High Channel 11, 2462 MF -25.35 3.0 -22.3 8    Chain B	Pass Pass		

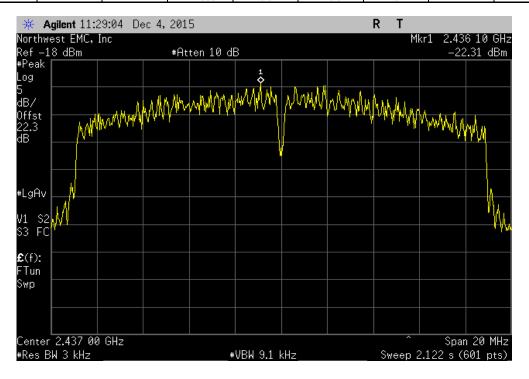
Report No. ELTL0004.1 120/223



	Chai	in A, 20 MHz, 240	0 MHz - 2483.5 N	MHz Band, 802.1	11(n) MCS8, Low (	Channel 1, 2412	MHz	
			Value	2x2 MIMO	Summed Value	Limit		
_			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results	
			-21.879	3.0	-18.9	8	Pass	



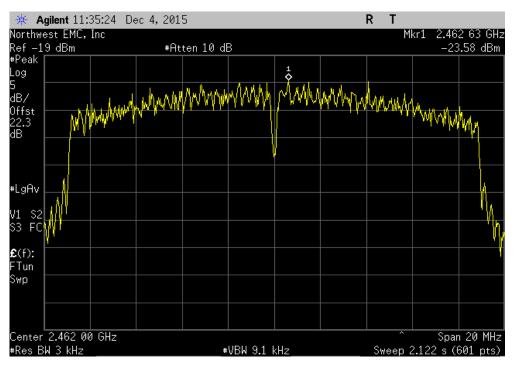
Cha	in A, 20 MHz, 24	00 MHz - 2483.5	MHz Band, 802.	11(n) MCS8, Mid (	Channel 6, 2437	MHz
		Value	2x2 MIMO	Summed Value	Limit	
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results
		-22.308	3.0	-19.3	8	Pass



Report No. ELTL0004.1 121/223



ĺ	Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz									
			Value	2x2 MIMO	Summed Value	Limit				
			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results			
ı			-23.577	3.0	-20.6	8	Pass			



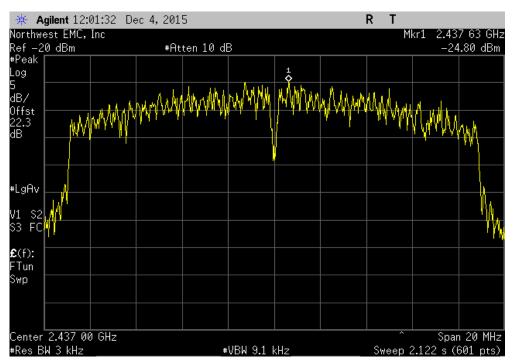
Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	1(n) MCS15, Low	Channel 1, 2412	MHz
		Value	2x2 MIMO	Summed Value	Limit	
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results
		-25.458	3.0	-22.4	8	Pass



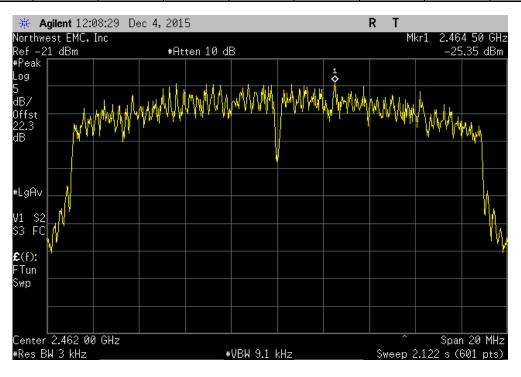
Report No. ELTL0004.1 122/223



	Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz									
			Value	2x2 MIMO	Summed Value	Limit				
			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results			
I			-24.801	3.0	-21.8	8	Pass			



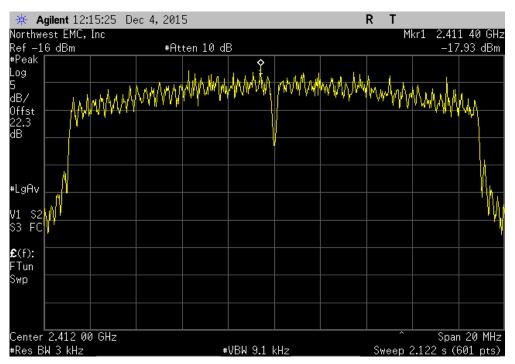
Chain	A, 20 MHz, 2400	MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High (	Channel 11, 2462	2 MHz	
		Value	2x2 MIMO	Summed Value	Limit		
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results	_
		-25.35	3.0	-22.3	8	Pass	



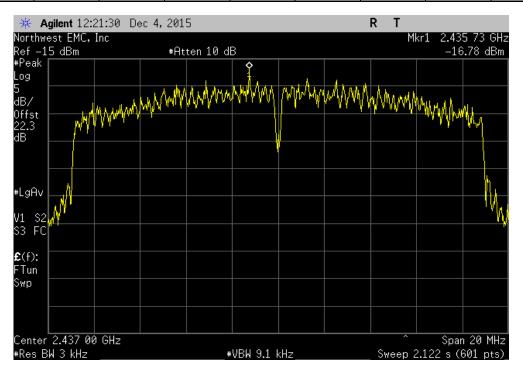
Report No. ELTL0004.1 123/223



Cha	in B, 20 MHz, 240	00 MHz - 2483.5	MHz Band, 802.1	11(n) MCS8, Low (	Channel 1, 2412	MHz
		Value	2x2 MIMO	Summed Value	Limit	
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results
		-17.927	3.0	-14.9	8	Pass



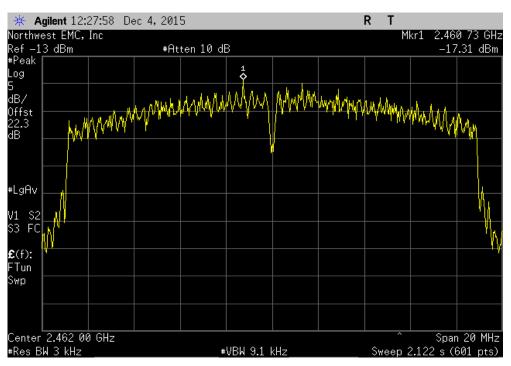
Cha	in B, 20 MHz, 240	00 MHz - 2483.5	MHz Band, 802.	11(n) MCS8, Mid (	Channel 6, 2437	MHz	
		Value	2x2 MIMO	Summed Value	Limit		
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results	_
		-16.781	3.0	-13.8	8	Pass	



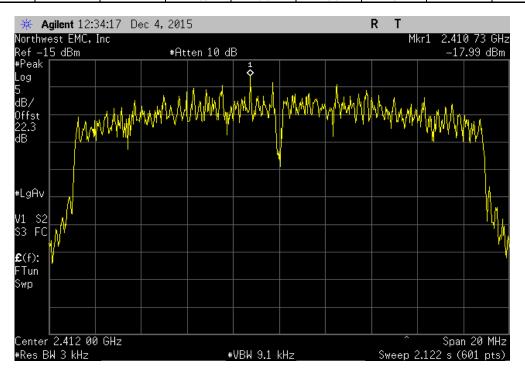
Report No. ELTL0004.1 124/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz									
			Value	2x2 MIMO	Summed Value	Limit			
			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results		
			-17.308	3.0	-14.3	8	Pass	l	



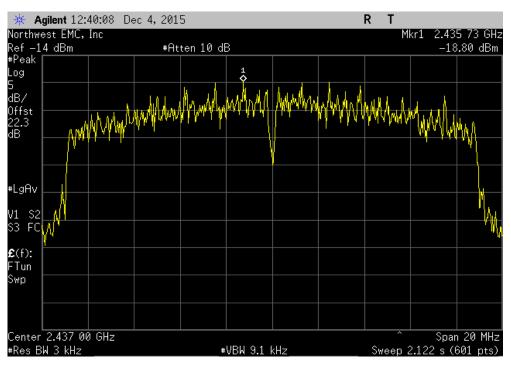
Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	1(n) MCS15, Low	Channel 1, 2412	MHz
		Value	2x2 MIMO	Summed Value	Limit	
		dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results
		-17.992	3.0	-15.0	8	Pass



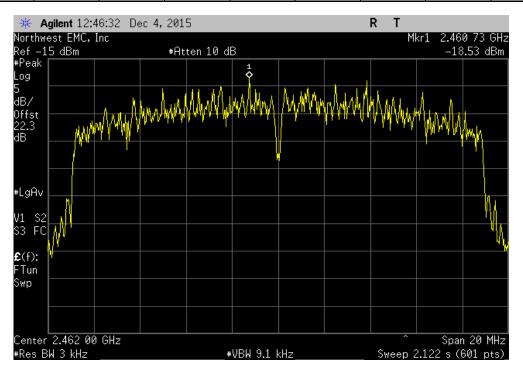
Report No. ELTL0004.1 125/223



	Chai	n B, 20 MHz, 240	0 MHz - 2483.5 N	//Hz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz	
			Value	2x2 MIMO	Summed Value	Limit		
_			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results	
			-18.801	3.0	-15.8	8	Pass	



	Chair	B, 20 MHz, 2400	) MHz - 2483.5 M	Hz Band, 802.11	(n) MCS15, High (	Channel 11, 2462	2 MHz
			Value	2x2 MIMO	Summed Value	Limit	
			dBm/3kHz	Factor (dB)	dBm/3kHz	< dBm/3kHz	Results
1			-18.535	3.0	-15.5	8	Pass



Report No. ELTL0004.1 126/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

An RMS detector was used to match the method called out for Output Power. Because the reference level was taken with an RMS detector, the attenuation requirement is -30 dBc.

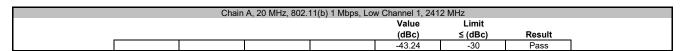
Report No. ELTL0004.1 127/223

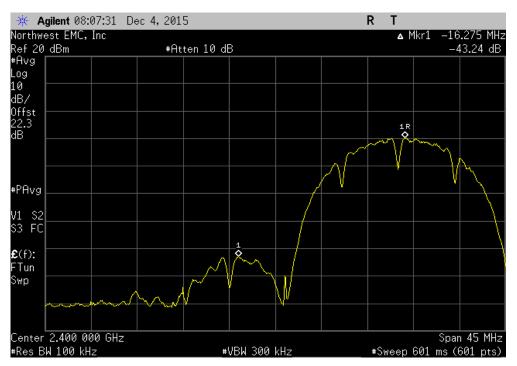


	Marcum RT-9		W	Work Order: ELTL0004					
	RTS0123456811						12/04/15		
	Electronic Technologies,	, LLC			Ter	mperature:			
	Rocky Holmes, Deb See					<b>Humidity:</b>			
Project					Barome	etric Pres.:			
Tested by:	Trevor Buls		Power:	110VAC/60Hz		Job Site:	MN08		
TEST SPECIFICAT FCC 15.247:2015	IONS			Test Method					
FCC 15.247:2015				ANSI C63.10:2013					
COMMENTS									
None									
DEVIATIONS EDOI	M TEST STANDARD								
None	W IEST STANDARD								
None				- 0					
Configuration #	5		T	Bullo					
oomigaration #	ľ	Signature	nevol	Buls					
					\	/alue	Limit		
					(	dBc)	≤ (dBc)	Result	
Chain A									
	20 MHz								
	802.11(b) 1 N	Mbps							
		Low Channel 1, 2412 MHz				43.24	-30	Pass	
		High Channel 11, 2462 MHz				56.73	-30	Pass	
	802.11(b) 11								
		Low Channel 1, 2412 MHz				41.44	-30	Pass	
		High Channel 11, 2462 MHz				54.18	-30	Pass	
	802.11(g) 6 N					20.40			
		Low Channel 1, 2412 MHz				38.18	-30 -30	Pass	
	802.11(g) 36	High Channel 11, 2462 MHz			-4	48.86	-30	Pass	
		Low Channel 1, 2412 MHz				38.99	-30	Pass	
		High Channel 11, 2462 MHz				47.41	-30	Pass	
	802.11(g) 54						-00	1 433	
		Low Channel 1, 2412 MHz				-39.7	-30	Pass	
		High Channel 11, 2462 MHz				47.08	-30	Pass	
	802.11(n) MO								
		Low Channel 1, 2412 MHz			-4	36.38	-30	Pass	
		High Channel 11, 2462 MHz			-4	47.55	-30	Pass	
	802.11(n) MC								
		Low Channel 1, 2412 MHz				39.03	-30	Pass	
		High Channel 11, 2462 MHz			-4	47.11	-30	Pass	
	40 MHz								
	802.11(n) MC					22.76	-30	Pass	
		Low Channel 1/5, 2422 MHz High Channel 7/11, 2452 MHz				32.76 37.89	-30 -30	Pass Pass	
	802.11(n) MC				-,	80.1C	-30	Pass	
		Low Channel 1/5, 2422 MHz				35.27	-30	Pass	
		High Channel 7/11, 2452 MHz				38.97	-30	Pass	
		g 5			7	,0.01	-00	1 433	

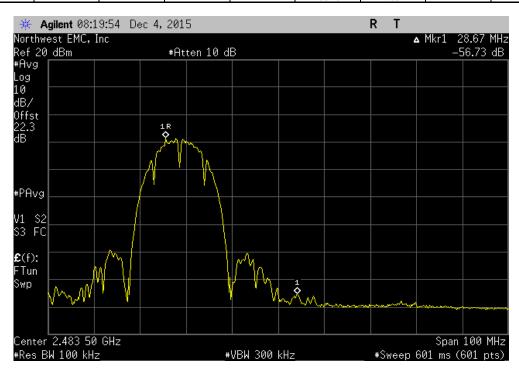
Report No. ELTL0004.1 128/223





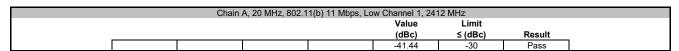


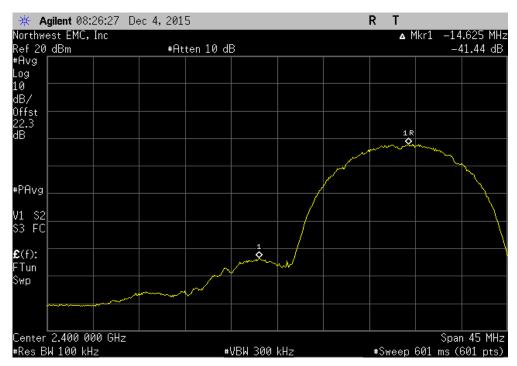
	Chain /	A, 20 MHz, 802.1	1(b) 1 Mbps, Higl	n Channel 11, 246	62 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-56.73	-30	Pass



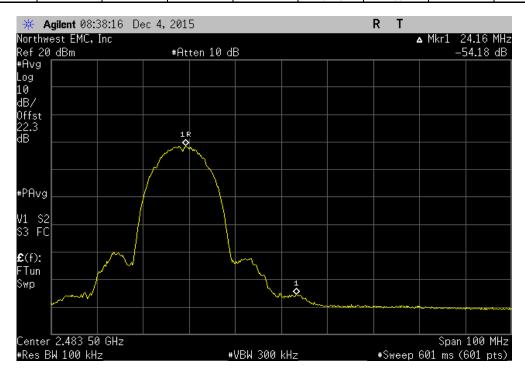
Report No. ELTL0004.1 129/223





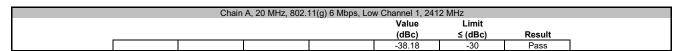


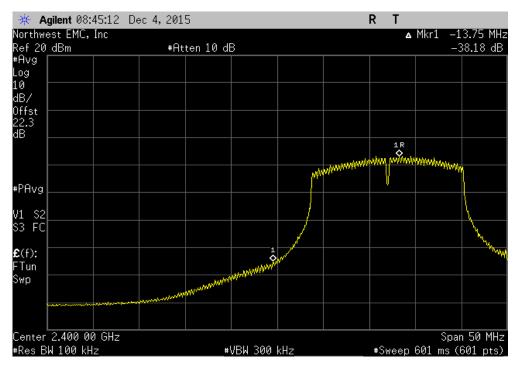
	Chain A	A, 20 MHz, 802.11	1(b) 11 Mbps, Hig	h Channel 11, 24	62 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-54.18	-30	Pass



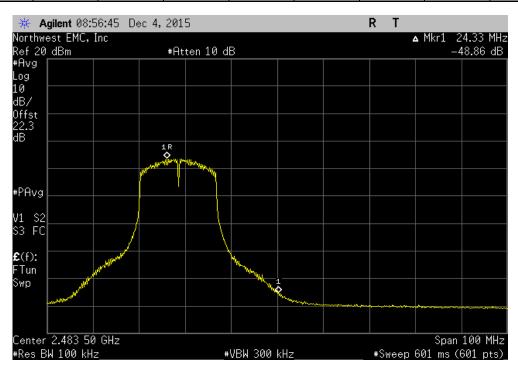
Report No. ELTL0004.1 130/223





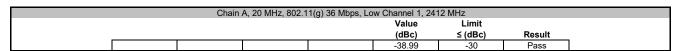


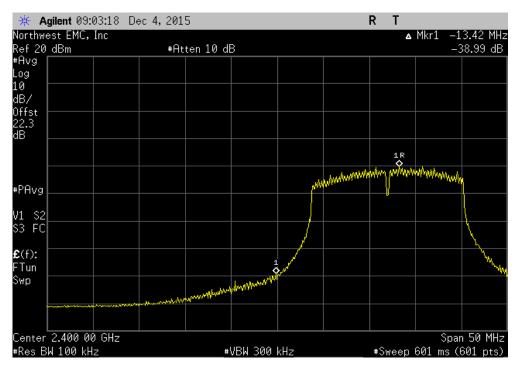
	Chain /	A, 20 MHz, 802.1	1(g) 6 Mbps, Higl	n Channel 11, 246	62 MHz	
				Value	Limit	
_				(dBc)	≤ (dBc)	Result
				-48.86	-30	Pass



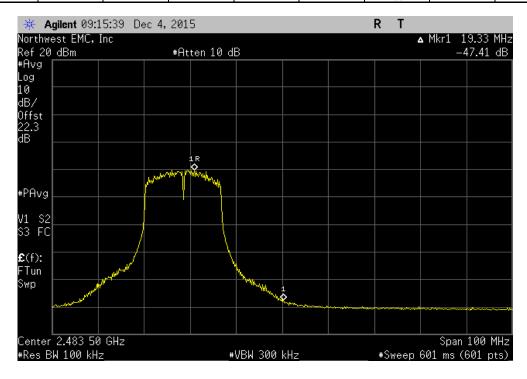
Report No. ELTL0004.1 131/223





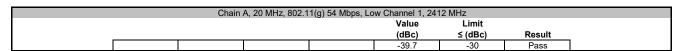


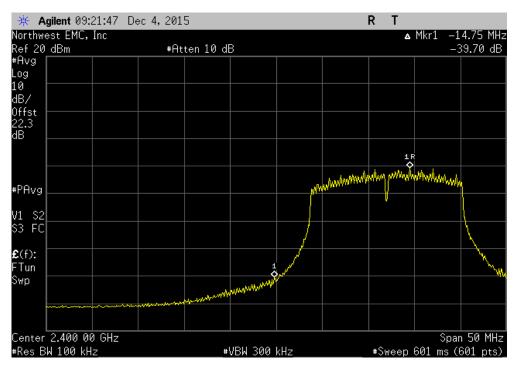
	Chain A	i, 20 MHz, 802.11	1(g) 36 Mbps, Hig	h Channel 11, 24	l62 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-47.41	-30	Pass



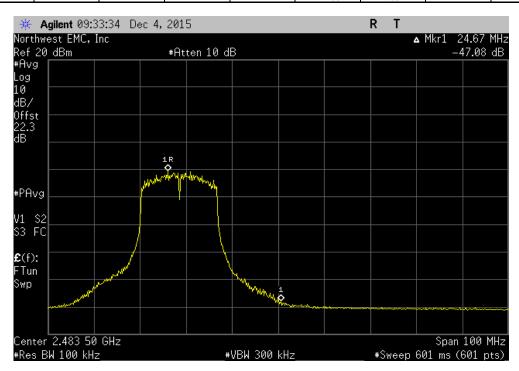
Report No. ELTL0004.1 132/223





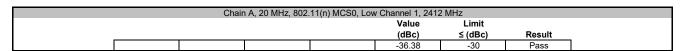


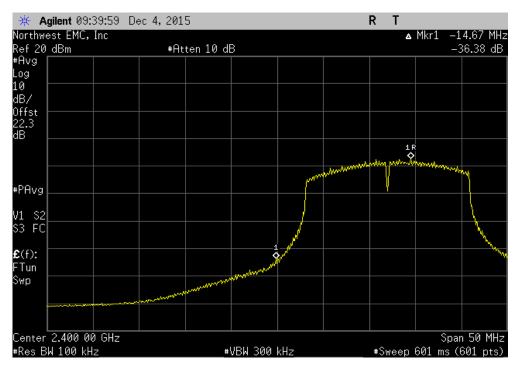
	Chain A	A, 20 MHz, 802.11	1(g) 54 Mbps, Hig	h Channel 11, 24	62 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-47.08	-30	Pass



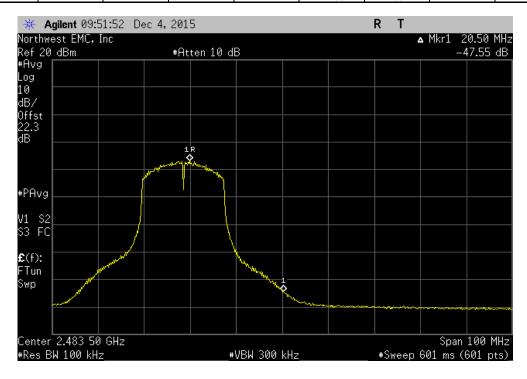
Report No. ELTL0004.1 133/223





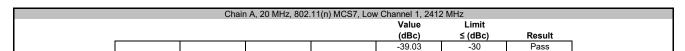


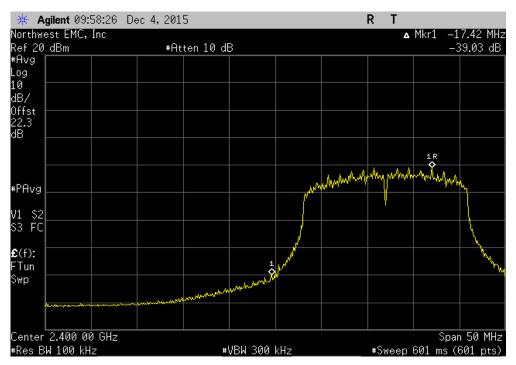
	Chain	A, 20 MHz, 802.1	I1(n) MCS0, High	Channel 11, 246	32 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-47.55	-30	Pass



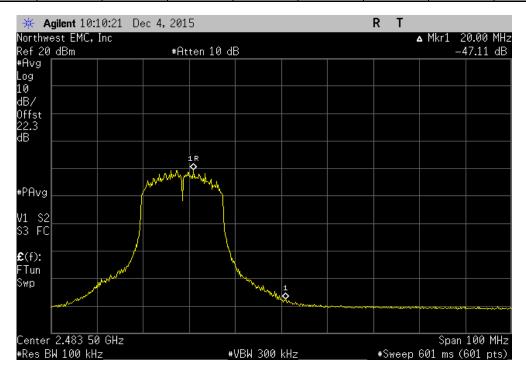
Report No. ELTL0004.1 134/223





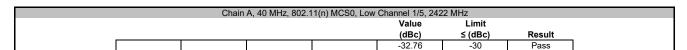


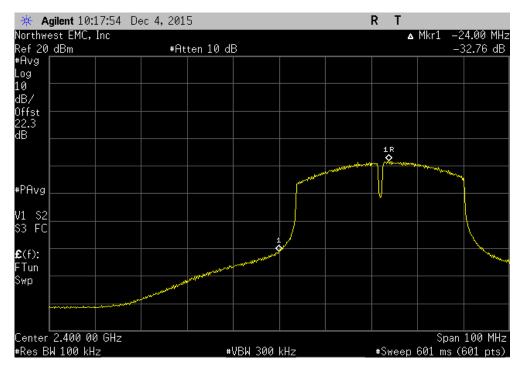
	Chain	A, 20 MHz, 802.1	I1(n) MCS7, High	Channel 11, 246	32 MHz	Result			
				Value	Limit				
_				(dBc)	≤ (dBc)	Result			
l [				-47 11	-30	Pass			



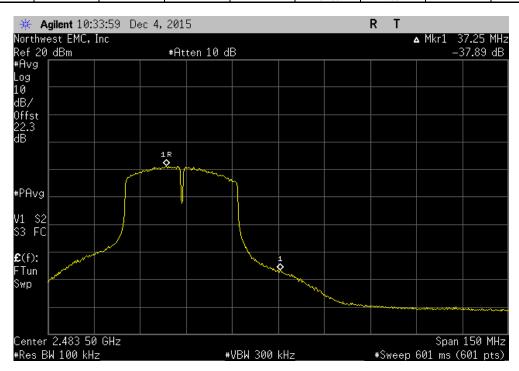
Report No. ELTL0004.1 135/223





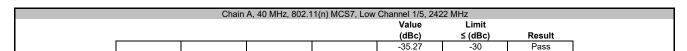


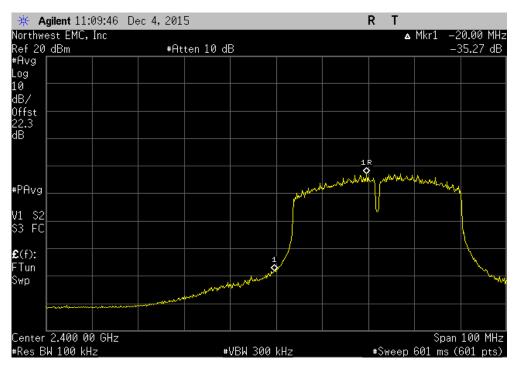
	Chain A	4, 40 MHz, 802.11	1(n) MCS0, High	Channel 7/11, 24	52 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-37.89	-30	Pass



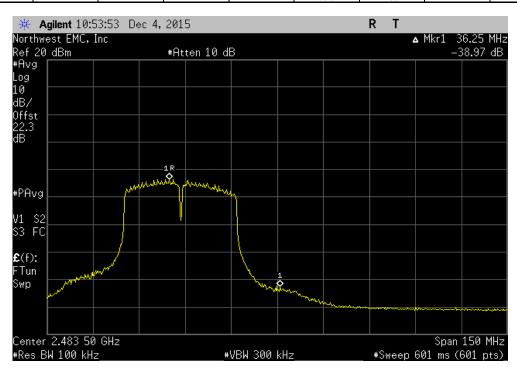
Report No. ELTL0004.1 136/223







	Chain A	A, 40 MHz, 802.1	1(n) MCS7, High	Channel 7/11, 24	52 MHz	
				Value	Limit	
				(dBc)	≤ (dBc)	Result
				-38.97	-30	Pass



Report No. ELTL0004.1 137/223



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

	Description	Manufacturer	Model	ID	Last Cal.	Interval
	Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
	Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
•	Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
•	Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
,	Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

An RMS detector was used to match the method called out for Output Power. Because the reference level was taken with an RMS detector, the attenuation requirement is -30 dBc.

Report No. ELTL0004.1 138/223

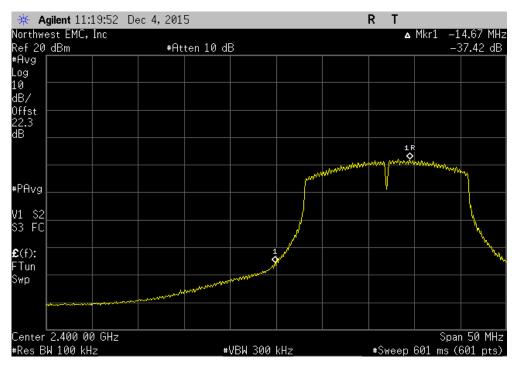


	Marcum RT-9		Work Order: ELTL0004						
	RTS0123456811			Date: 12/04/15					
	Electronic Technologies,	, LLC		Temperature:					
	Rocky Holmes, Deb See			Humidity: 25%					
Project:				Barometric Pres.: 998.9					
	Trevor Buls		Power: 110VAC/60Hz	Job Site:	MN08				
TEST SPECIFICATI	ONS		Test Method						
FCC 15.247:2015			ANSI C63.10:2013						
COMMENTS									
None									
DEVIATIONS EDON	// TEST STANDARD								
	I IESI SIANDARD								
None			_						
Configuration #	5		Bulb						
Comiguration #	J	Signature	veror Buls						
		Signature		Value	Limit				
				(dBc)	≤ (dBc)	Result			
Chain A				(7	(/				
	20 MHz								
	2400 MHz - 2	2483.5 MHz Band							
		802.11(n) MCS8							
		Low Channel 1, 2412 MHz		-37.42	-30	Pass			
		High Channel 11, 2462 MF		-48.65	-30	Pass			
		802.11(n) MCS15							
		Low Channel 1, 2412 MHz		-40.22	-30	Pass			
		High Channel 11, 2462 MF		-47.07	-30	Pass			
Chain B									
	20 MHz								
		2483.5 MHz Band							
		802.11(n) MCS8				_			
		Low Channel 1, 2412 MHz		-34.58	-30	Pass			
		High Channel 11, 2462 MF		-46.85	-30	Pass			
		802.11(n) MCS15		20.44	20	D			
		Low Channel 1, 2412 MHz		-39.41	-30	Pass			
		High Channel 11, 2462 MF		-45.79	-30	Pass			

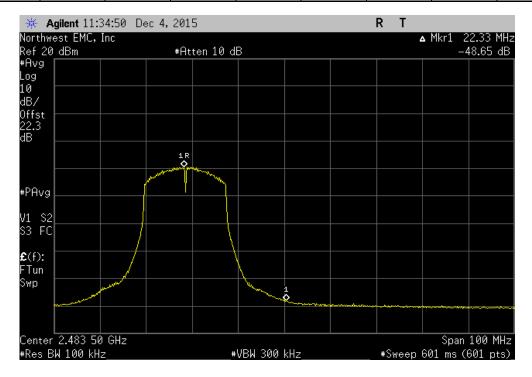
Report No. ELTL0004.1 139/223



	Cha	in A, 20 MHz, 240	00 MHz - 2483.5	MHz Band, 802.1	1(n) MCS8, Low	Channel 1, 2412	MHz
				·	Value	Limit	
_					(dBc)	≤ (dBc)	Result
					-37.42	-30	Pass

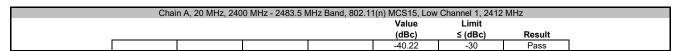


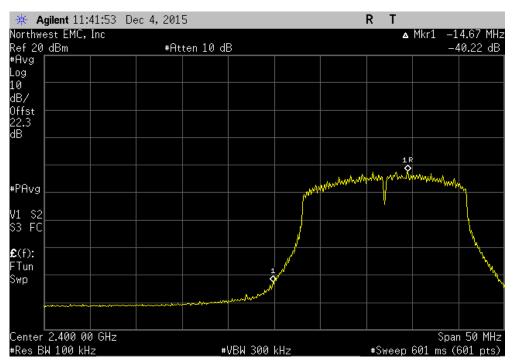
	Chai	n A, 20 MHz, 240	0 MHz - 2483.5 N	1Hz Band, 802.11	(n) MCS8, High (	Channel 11, 2462	MHz
					Value	Limit	
					(dBc)	≤ (dBc)	Result
1					-48.65	-30	Pass



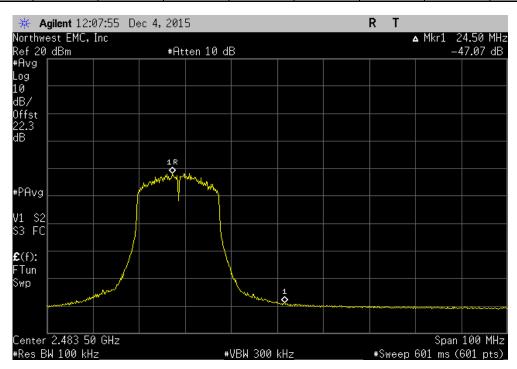
Report No. ELTL0004.1 140/223





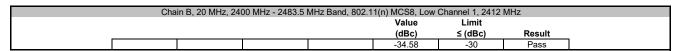


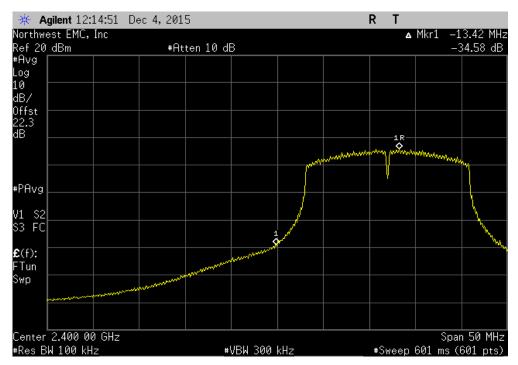
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz									
Value Limit									
(dBc) ≤ (dBc) Result									
					-47.07	-30	Pass		



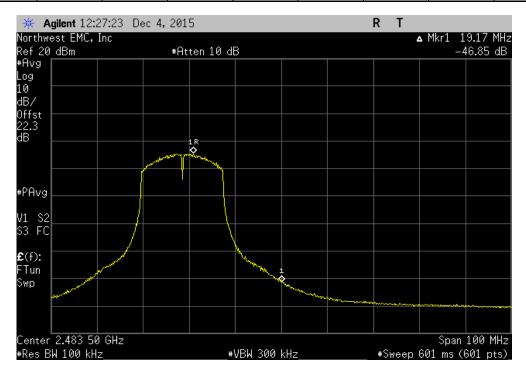
Report No. ELTL0004.1 141/223





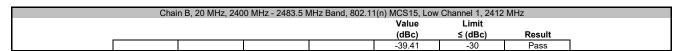


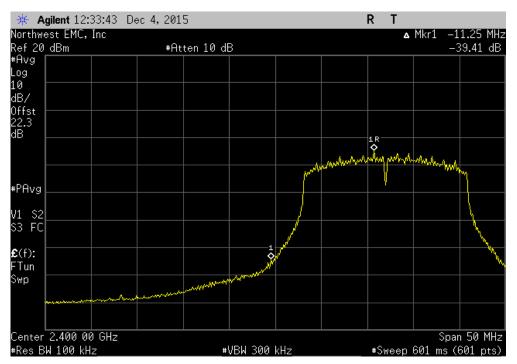
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz							
					Value	Limit	
					(dBc)	≤ (dBc)	Result
					-46.85	-30	Pass



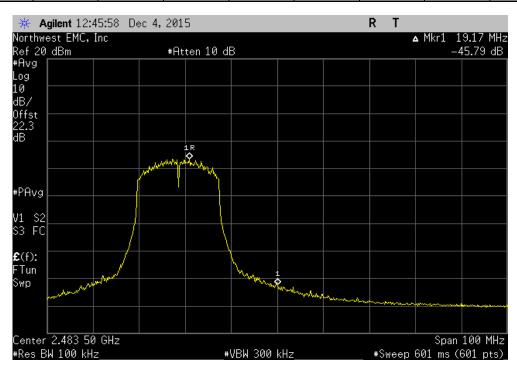
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Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz									
Value Limit									
(dBc) ≤(dBc) Result									
1					-45.79	-30	Pass		



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# SPURIOUS CONDUCTED EMISSIONS



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

Description Cable		Manufacturer	Model	ID	Last Cal.	Interval
		ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
	Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
	Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
	Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
	Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

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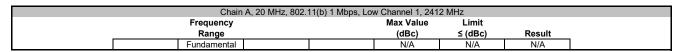
					XMIT 2015.0
EUT: Marcu	m RT-9		Work Order:	ELTL0004	
Serial Number: RTS01				12/04/15	
Customer: Electro	onic Technologies, LLC		Temperature:	22.2°C	
Attendees: Rocky	Holmes, Deb See		Humidity:		
Project: None			Barometric Pres.:		
Tested by: Trevor	Buls	Power: 110VAC/60Hz	Job Site:	MN08	
EST SPECIFICATIONS		Test Method			
CC 15.247:2015		ANSI C63.10:2013			
OMMENTS					
one					
EVIATIONS FROM TEST	STANDARD				
one					
onfiguration#	5	Jan Buls			
omiguration #		Trevor Buls			
	Signature	Frequency	Max Value	Limit	
		Range	(dBc)	≤ (dBc)	Result
ain A		Kange	(ubc)	(ubc)	Nesuit
20 MH	_				
20 10111					
	802.11(b) 1 Mbps Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	-54.12 -50.02	-20 -20	Pass Pass
	Mid Channel 6, 2437 MHz	Fundamental	-50.02 N/A	-20 N/A	N/A
		30 MHz - 12.5 GHz			N/A Pass
	Mid Channel 6, 2437 MHz		-56.74	-20 20	
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-52.9 N/A	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-53.2	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-51.84	-20	Pass
	802.11(b) 11 Mbps				
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-54.88	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-51.03	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-56.49	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-52.28	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-53.1	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-51.35	-20	Pass
	802.11(g) 6 Mbps				
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-49.46	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-44.11	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-51.3	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-47.08	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-50.23	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-46.4	-20	Pass
	802.11(g) 36 Mbps	12.0 0112 20 0112	10.1		. 400
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-48.57	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-44.38	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-51.57	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-51.57 -46.85	-20 -20	Pass
	High Channel 11, 2462 MHz	Fundamental	-46.65 N/A	-20 N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	N/A -49.97	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-49.97 -45.17	-20 -20	Pass
	802.11(g) 54 Mbps	12.0 GHZ - 20 GHZ	-45.17	-20	rass
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-48.68	-20	Pass
	Low Channel 1, 2412 MHz Low Channel 1, 2412 MHz	12.5 GHz	-48.68 -45.5	-20 -20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A 51.24	N/A	N/A Poss
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-51.24 47.57	-20 20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-47.57 N/A	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-49.97	-20 20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-45.4	-20	Pass
	802.11(n) MCS0 Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	N/A -49.67	-20	Pass
	Low Channel 1, 2412 MHz Low Channel 1, 2412 MHz	30 MHZ - 12.5 GHZ 12.5 GHz - 25 GHz	-49.67 -45.75		Pass
		Fundamental		-20 N/A	N/A
	Mid Channel 6, 2437 MHz Mid Channel 6, 2437 MHz		N/A -51.06		
		30 MHz - 12.5 GHz 12.5 GHz - 25 GHz		-20 -20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz Fundamental	-47.05	-20 N/A	Pass
	High Channel 11, 2462 MHz		N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-50.87	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-46.41	-20	Pass
	802.11(n) MCS7	5			
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-49.88	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-45.31	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-51.28	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-46.62	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-50.8	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-46.63	-20	Pass

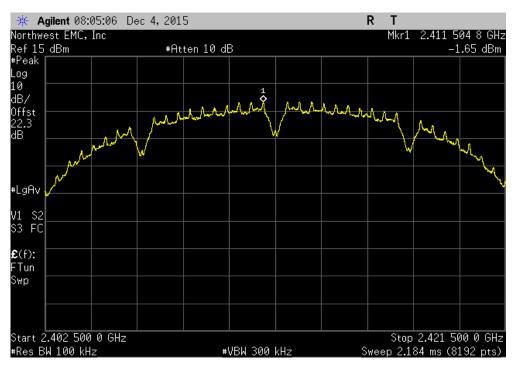
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40 MHz				
802.11(n) MCS0				
Low Channel 1/5, 2422 MHz	Fundamental	N/A	N/A	N/A
Low Channel 1/5, 2422 MHz	30 MHz - 12.5 GHz	-46.01	-20	Pass
Low Channel 1/5, 2422 MHz	12.5 GHz - 25 GHz	-43.46	-20	Pass
Mid Channel 4/8, 2437 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 4/8, 2437 MHz	30 MHz - 12.5 GHz	-48.34	-20	Pass
Mid Channel 4/8, 2437 MHz	12.5 GHz - 25 GHz	-43.74	-20	Pass
High Channel 7/11, 2452 MHz	Fundamental	N/A	N/A	N/A
High Channel 7/11, 2452 MHz	30 MHz - 12.5 GHz	-32.16	-20	Pass
High Channel 7/11, 2452 MHz	12.5 GHz - 25 GHz	-43.45	-20	Pass
802.11(n) MCS7				
Low Channel 1/5, 2422 MHz	Fundamental	N/A	N/A	N/A
Low Channel 1/5, 2422 MHz	30 MHz - 12.5 GHz	-45.78	-20	Pass
Low Channel 1/5, 2422 MHz	12.5 GHz - 25 GHz	-41.62	-20	Pass
Mid Channel 4/8, 2437 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 4/8, 2437 MHz	30 MHz - 12.5 GHz	-46.93	-20	Pass
Mid Channel 4/8, 2437 MHz	12.5 GHz - 25 GHz	-42.63	-20	Pass
High Channel 7/11, 2452 MHz	Fundamental	N/A	N/A	N/A
High Channel 7/11, 2452 MHz	30 MHz - 12.5 GHz	-45.97	-20	Pass
High Channel 7/11, 2452 MHz	12.5 GHz - 25 GHz	-41.42	-20	Pass

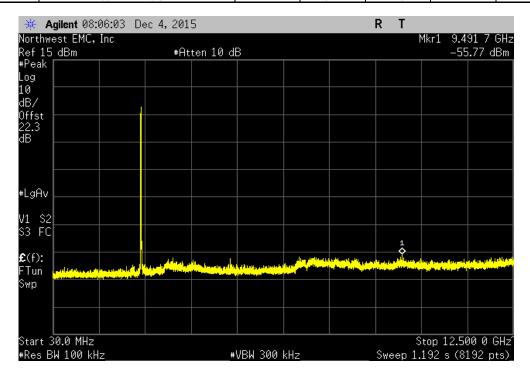
Report No. ELTL0004.1







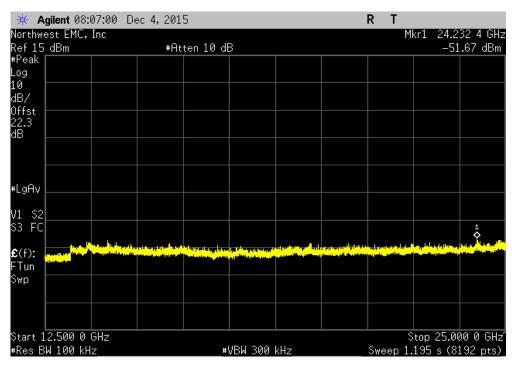
Chain A, 20 MHz, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-54.12	-20	Pass	



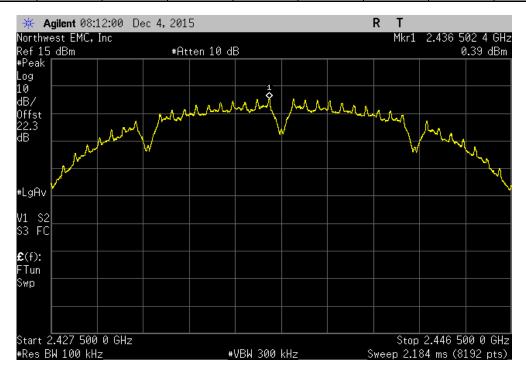
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Chain A, 20 MHz, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency	· / · / ·	Max Value	Limit	
Frequency				
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-50.02	-20	Pass



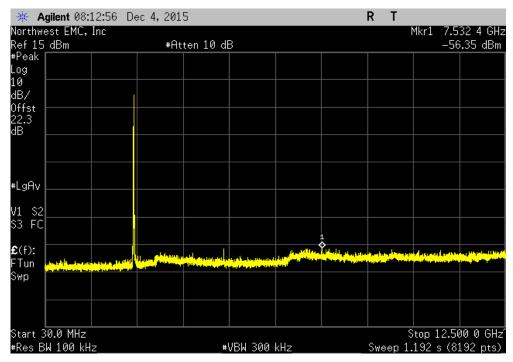
Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
	Frequency	Max Value	Limit	
	Range	(dBc)	≤ (dBc)	Result
	Fundamental	N/A	N/A	N/A



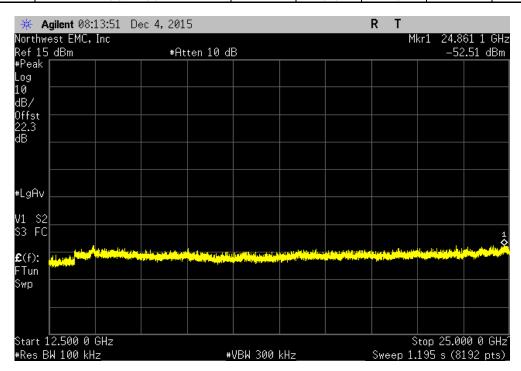
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Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz					
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz		-56.74	-20	Pass	

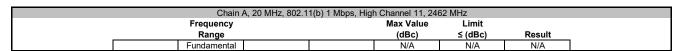


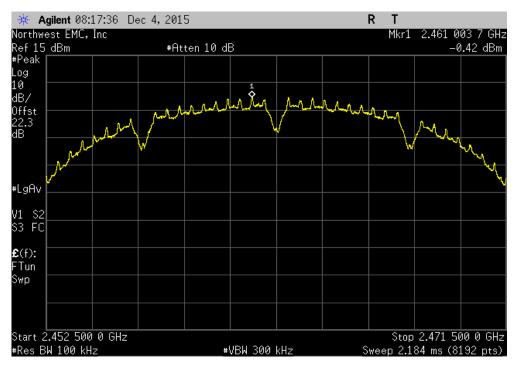
Chain A, 20 MHz, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz					
	Frequency			Limit	
	Range		(dBc)	≤ (dBc)	Result
1	12.5 GHz - 25 GHz		-52.9	-20	Pass



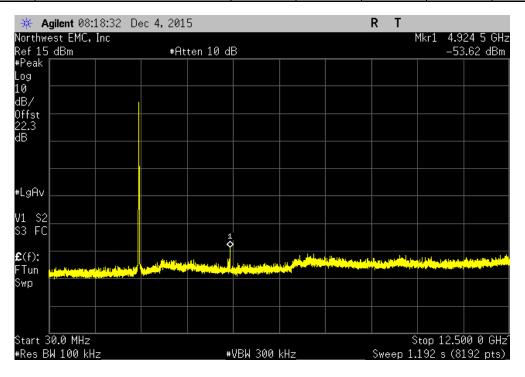
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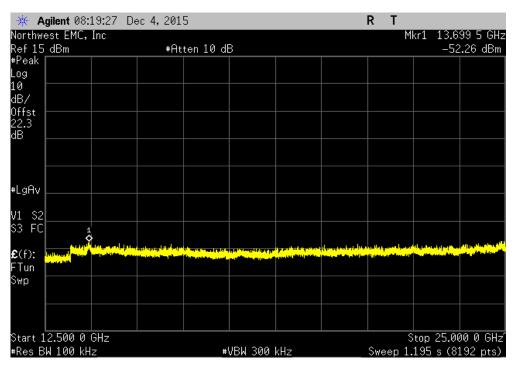
Chain A, 20 MHz, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz		-53.2	-20	Pass



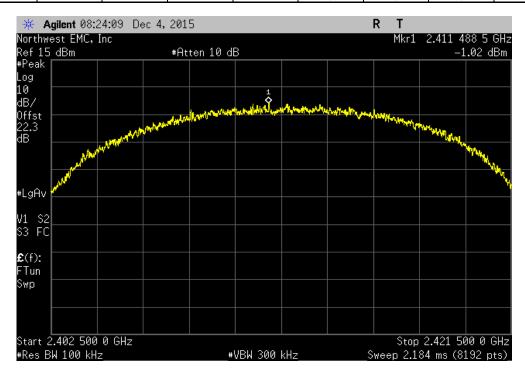
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Chain A, 20 MHz, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz					
Frequency	Max Value	Limit			
4					
Range	(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz	-51.84	-20	Pass		



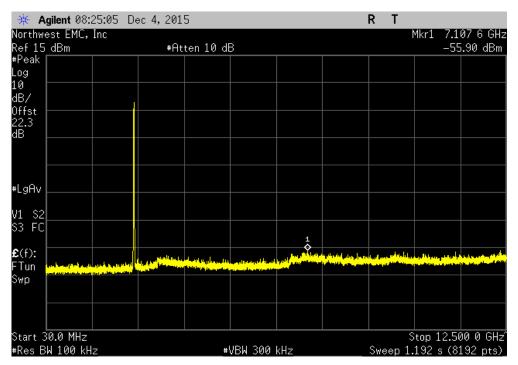
Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
l	Fundamental		N/A	N/A	N/A



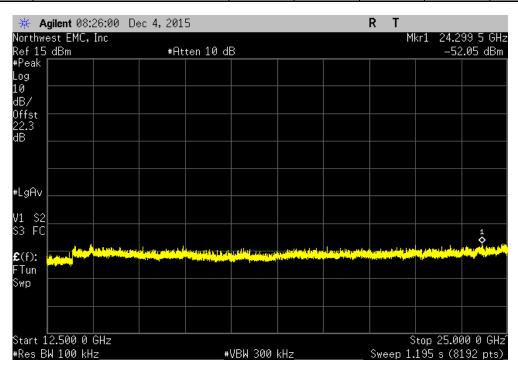
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Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency	Frequency Max Value Limit			
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-54.88	-20	Pass	

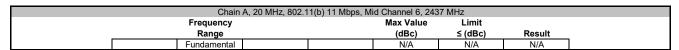


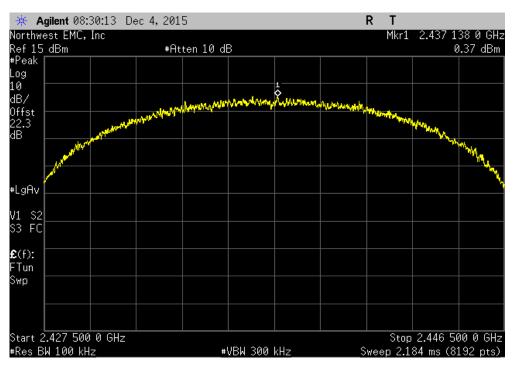
Chain A, 20 MHz, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	12.5 GHz - 25 GHz		-51.03	-20	Pass



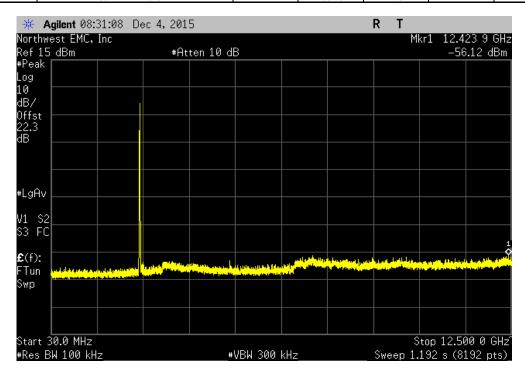
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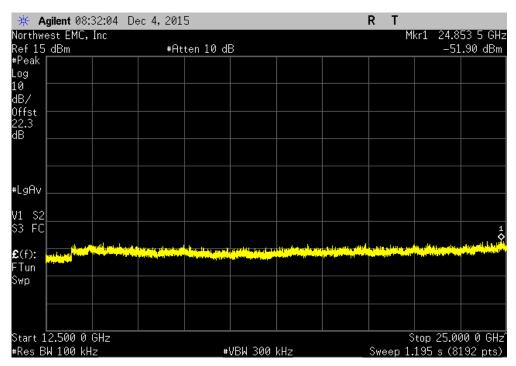
Chain A, 20 MHz, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-56.49	-20	Pass	



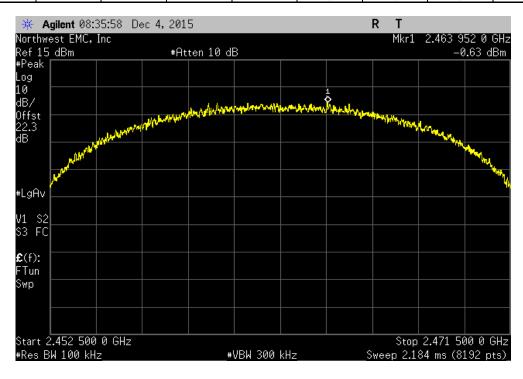
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Chain A, 20 MHz, 802.1	1(b) 11 Mbps, Mi	d Channel 6, 243	7 MHz		
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz		-52.28	-20	Pass	



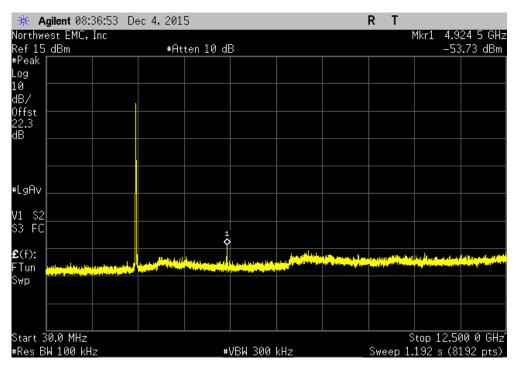
	Chain A, 20 MHz, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
	Fundamental		N/A	N/A	N/A



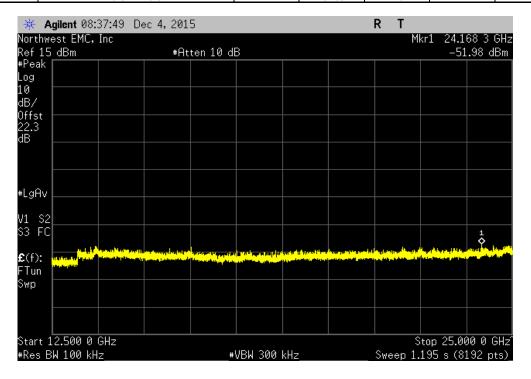
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Chain A, 20 MHz, 802.11(b)	11 Mbps, High Channel 11, 24	62 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-53.1	-20	Pass



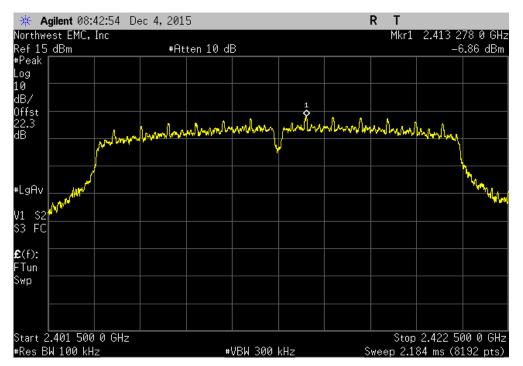
Chain A, 20 MHz, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency		Max Value	Limit	
 Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-51.35	-20	Pass



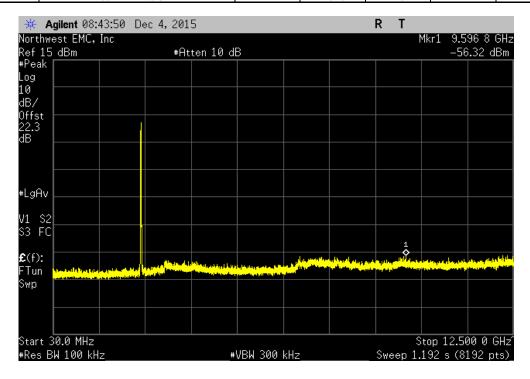
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Chain A, 20 MHz, 802.1	11(g) 6 Mbps, Low Channel 1, 2	2412 MHz	
Frequency	Max Value		
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



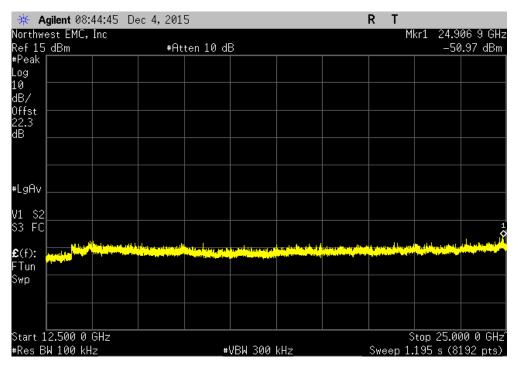
Chain A, 20 MHz, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-49.46	-20	Pass	



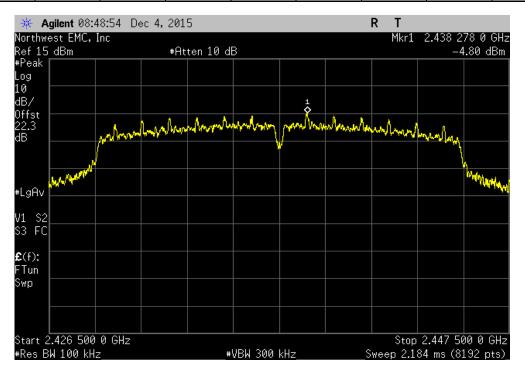
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Chain A, 20 MHz, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	-44.11	-20	Pass	



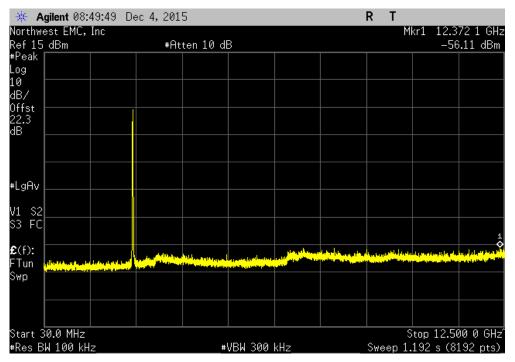
Chain A, 20 MHz, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



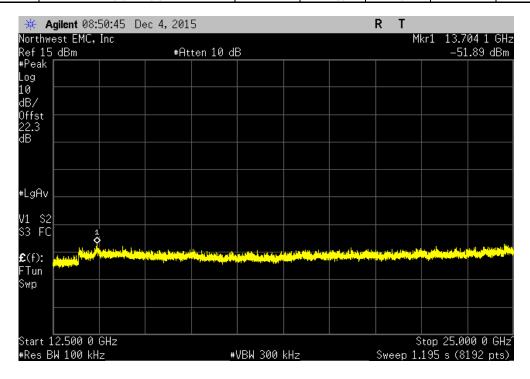
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Chain A, 20 MHz, 802.11	(g) 6 Mbps, Mid Channel 6, 243	7 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.3	-20	Pass

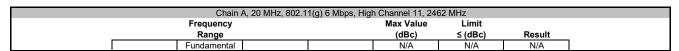


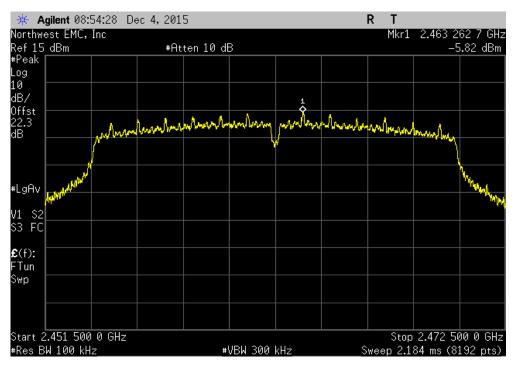
	Chain A, 20 MHz, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
1	12.5 GHz - 25 GHz		-47.08	-20	Pass



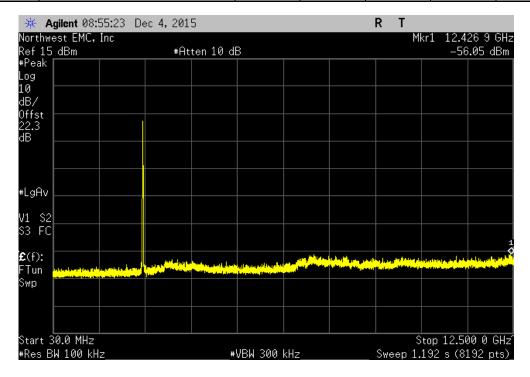
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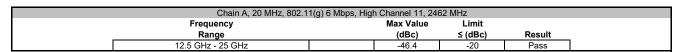


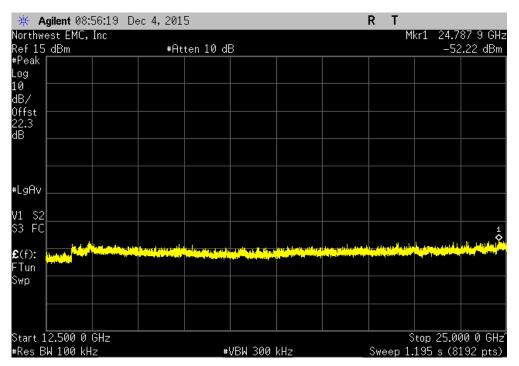
	Chain A, 20 MHz, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
ĺ	30 MHz - 12.5 GHz		-50.23	-20	Pass



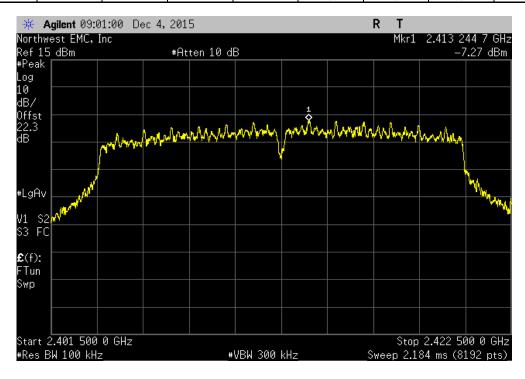
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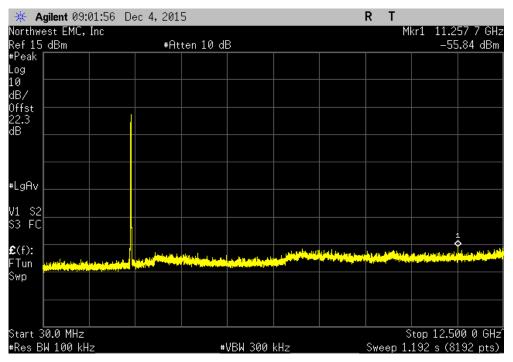
Chain A, 20 MHz, 802.11(	g) 36 Mbps, Low Channel 1, 24	12 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



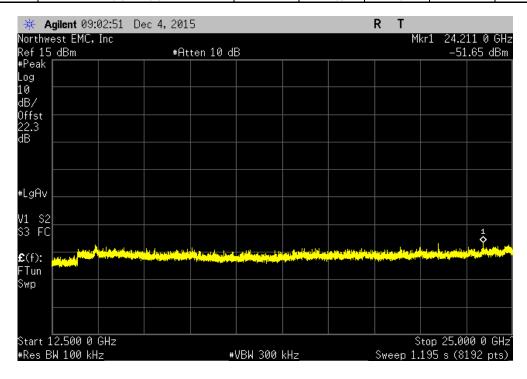
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Chain A, 20 MHz, 802.11	1(g) 36 Mbps, Low Channel 1, 24	I2 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-48.57	-20	Pass

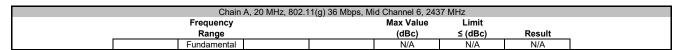


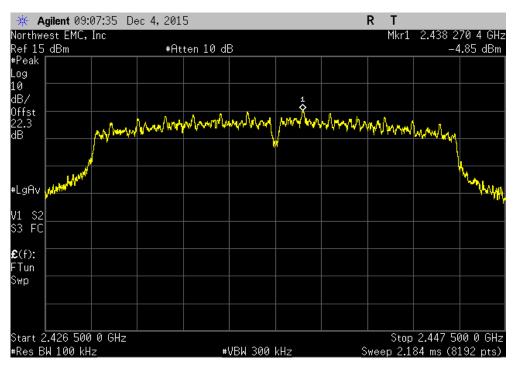
	Chain A, 20 MHz, 802.1	1(g) 36 Mbps, Lo	w Channel 1, 241	2 MHz	
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	12.5 GHz - 25 GHz		-44.38	-20	Pass



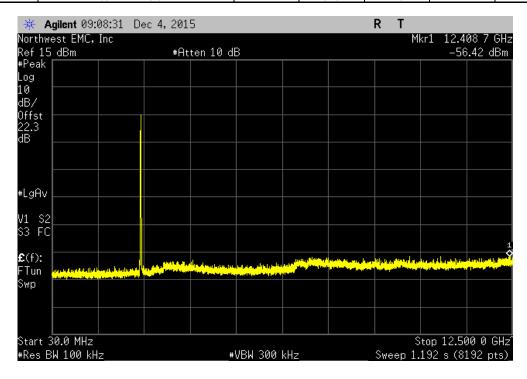
Report No. ELTL0004.1 161/223







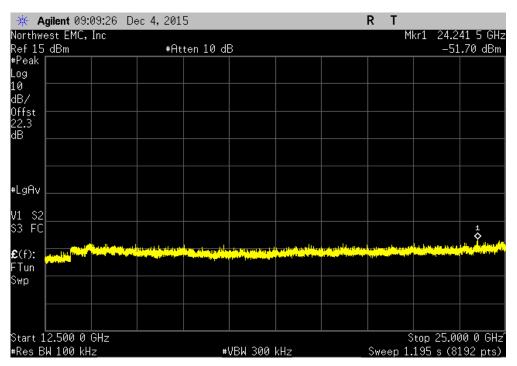
Chain A, 20 MHz, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz			
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.57	-20	Pass



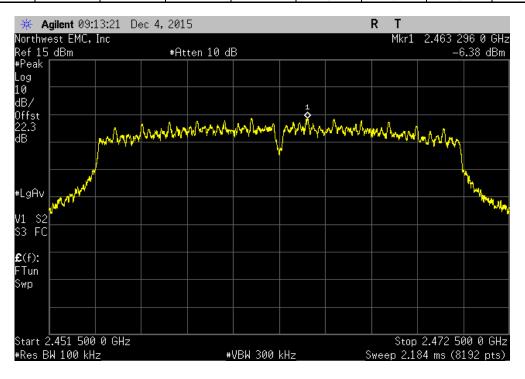
Report No. ELTL0004.1 162/223



Chain A, 20 MHz, 802.11(	(g) 36 Mbps, Mid Channel 6, 243	7 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz	-46.85	-20	Pass



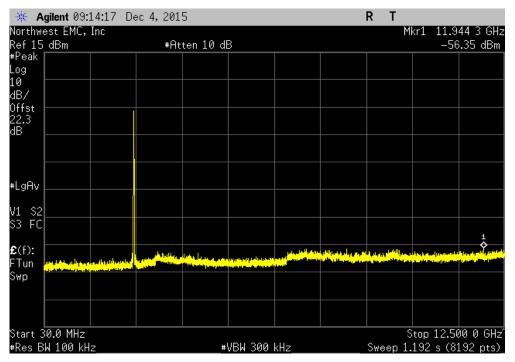
Chain A, 20 MHz, 802.	11(g) 36 Mbps, Hiզ	gh Channel 11, 24	62 MHz	
Frequency		Max Value	Limit	
 Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



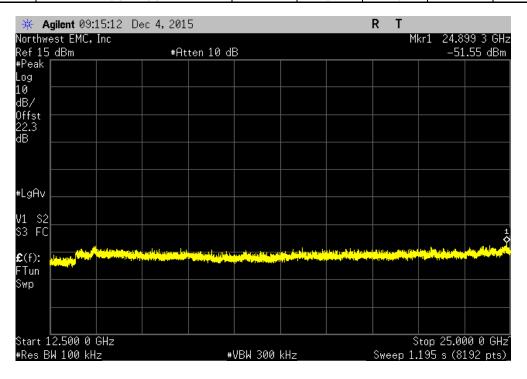
Report No. ELTL0004.1 163/223



Chain A, 20 MHz, 802.11	(g) 36 Mbps, High Channel 1	1, 2462 MHz	
Frequency	Max Val		
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-49.97	-20	Pass



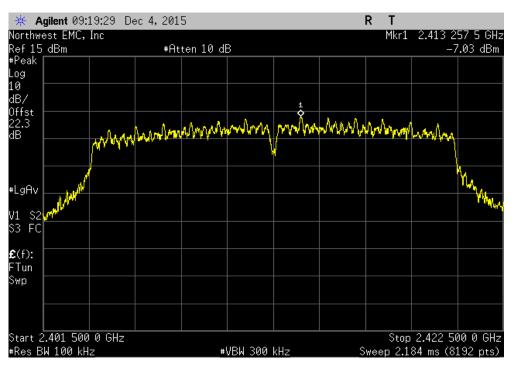
Chain A, 20 MHz, 802.11	(g) 36 Mbps, Hig	h Channel 11, 24	62 MHz	
Frequency		Max Value	Limit	
 Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-45.17	-20	Pass



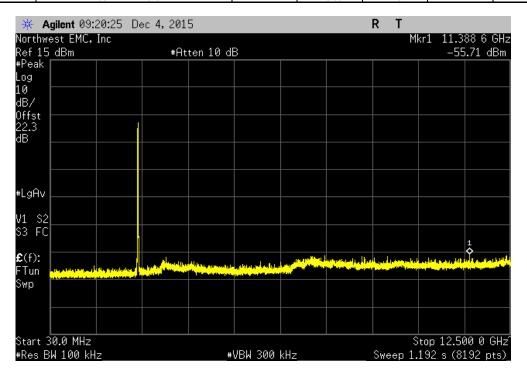
Report No. ELTL0004.1 164/223



Chain A, 20 MHz, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



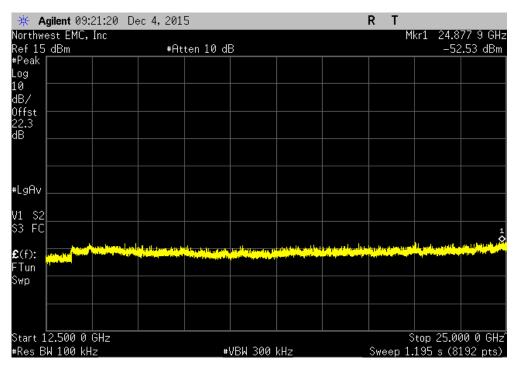
Chain A, 20 MHz, 802.11(g)	54 Mbps, Low Channel 1, 24	12 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-48.68	-20	Pass



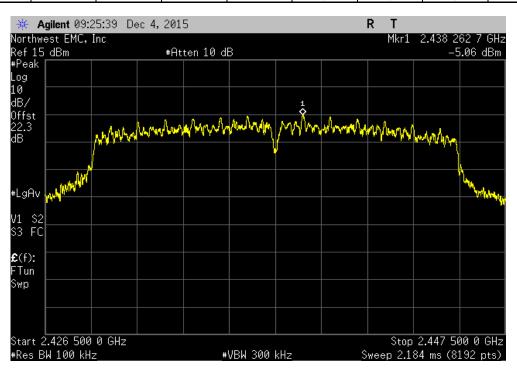
Report No. ELTL0004.1 165/223



Chain A, 20 MHz, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	-45.5	-20	Pass	



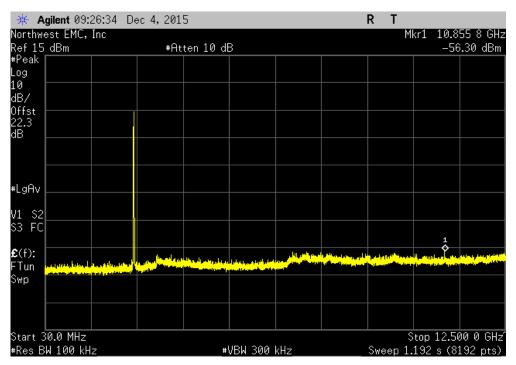
	Chain A, 20 MHz, 802.1	1(g) 54 Mbps, Mi	d Channel 6, 243	7 MHz	
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
l	Fundamental		N/A	N/A	N/A



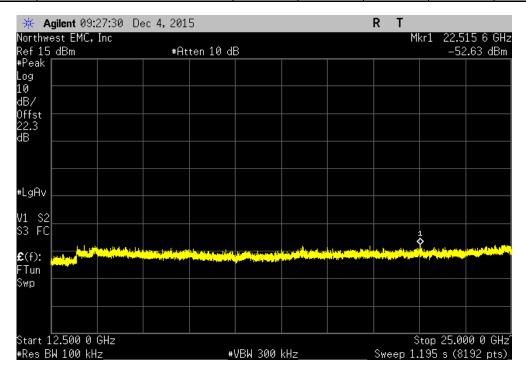
Report No. ELTL0004.1 166/223



Chain A, 20 MHz, 802.11	1(g) 54 Mbps, Mid Channel 6, 243	7 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.24	-20	Pass

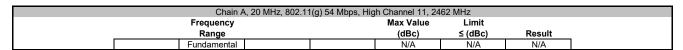


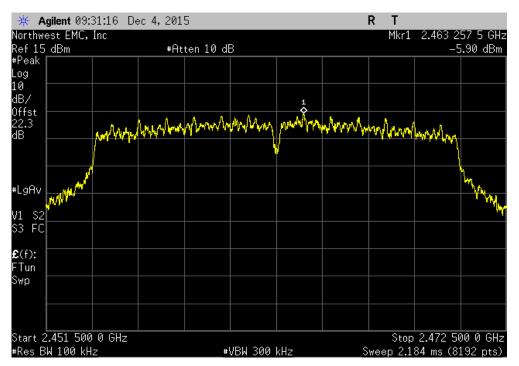
	Chain A, 20 MHz, 802.1	1(g) 54 Mbps, Mi	d Channel 6, 243	7 MHz	
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
i í	12.5 GHz - 25 GHz		-47.57	-20	Pass



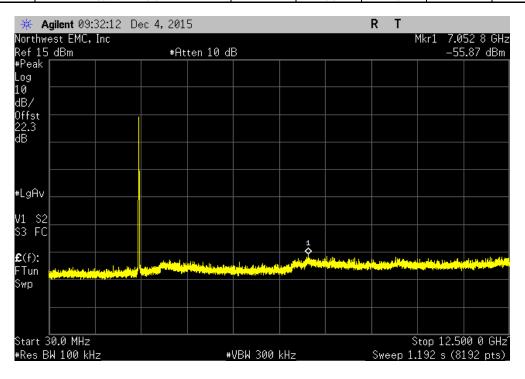
Report No. ELTL0004.1 167/223







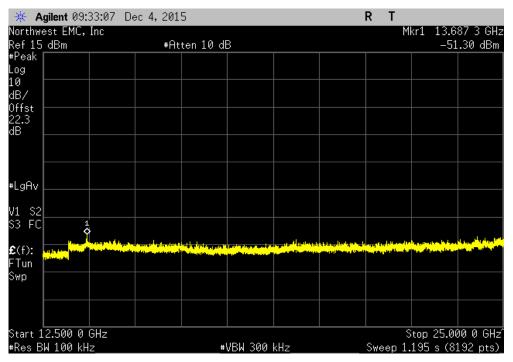
Chain A, 20 MHz, 802.11(	g) 54 Mbps, High Channel 11, 24	62 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-49.97	-20	Pass



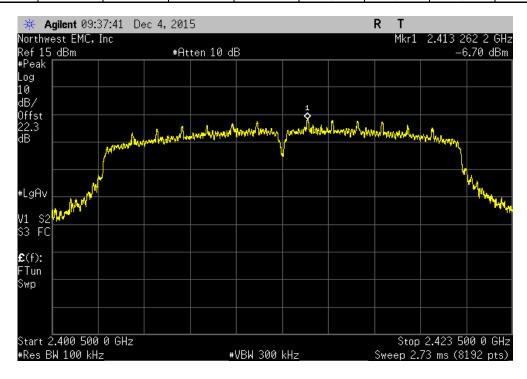
Report No. ELTL0004.1 168/223



Chain A, 20 MHz, 802.11(	(g) 54 Mbps, High Channel 11, 24	62 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz	-45.4	-20	Pass



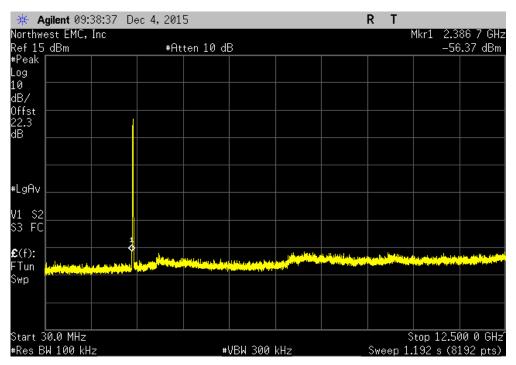
	Chain A, 20 MHz, 802	.11(n) MCS0, Lov	v Channel 1, 2412	MHz	
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	Fundamental		N/A	N/A	N/A



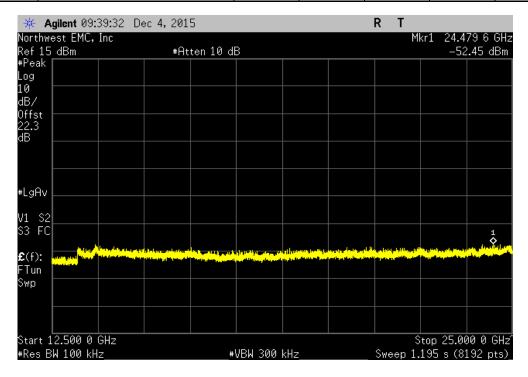
Report No. ELTL0004.1 169/223



Chain A, 20 MHz, 802.1	11(n) MCS0, Low Channel 1, 2412	2 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-49.67	-20	Pass



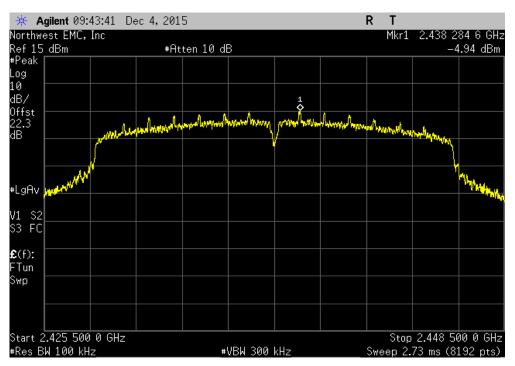
	Chain A, 20 MHz, 802.	11(n) MCS0, Low	/ Channel 1, 2412	2 MHz	
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	12.5 GHz - 25 GHz		-45.75	-20	Pass



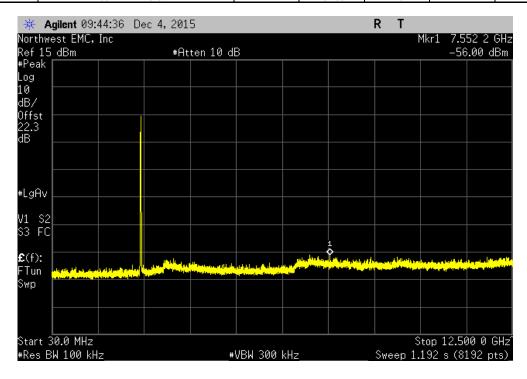
Report No. ELTL0004.1 170/223



Chain A, 20 MHz, 8	02.11(n) MCS0. Mic	d Channel 6. 2437	MHz	
Frequency	, , , , ,	Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



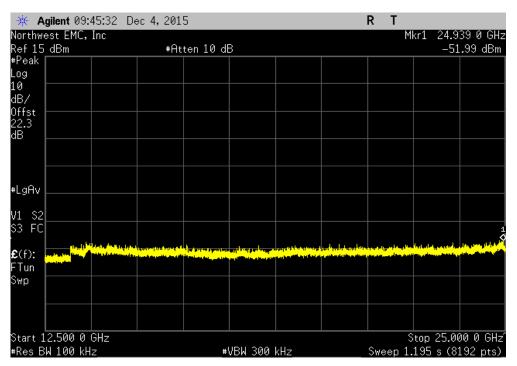
Chain A, 20 MHz, 802.1	1(n) MCS0, Mid Channel 6, 2437	MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.06	-20	Pass



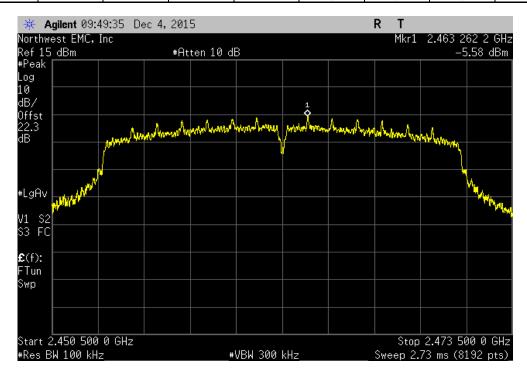
Report No. ELTL0004.1 171/223



Chain A, 20 MHz, 80	02.11(n) MCS0, Mid Chann	el 6, 2437	7 MHz	
Frequency	Max	Value	Limit	
Range	(c	IBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz	-4	7.05	-20	Pass



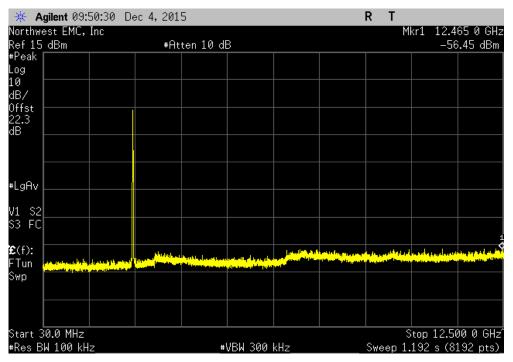
Chain A, 20 MHz, 802.11	(n) MCS0, High Channel 11, 246	2 MHz	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



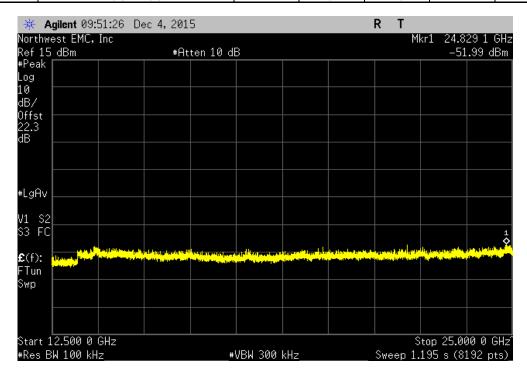
Report No. ELTL0004.1 172/223



Chain A, 20 MHz, 802.11(	n) MCS0, High Channel 11, 246	2 MHz	
Frequency	Max Value	Limit	
			D 14
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-50.87	-20	Pass



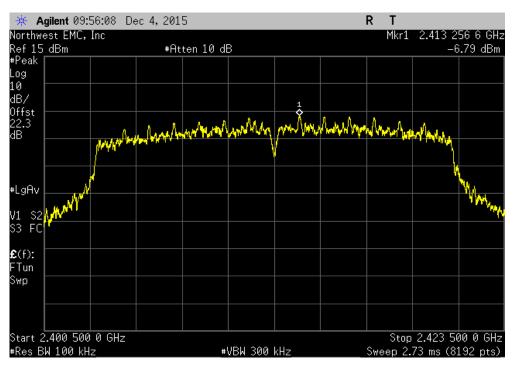
Chain A, 20 MHz, 802.11(n) MCS0, High Channel 11, 2462 MHz					
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
	12.5 GHz - 25 GHz		-46.41	-20	Pass



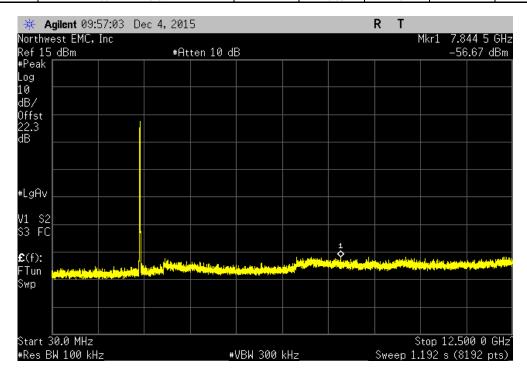
Report No. ELTL0004.1 173/223



Chain A, 20 MHz, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
Fundamental		N/A	N/A	N/A	



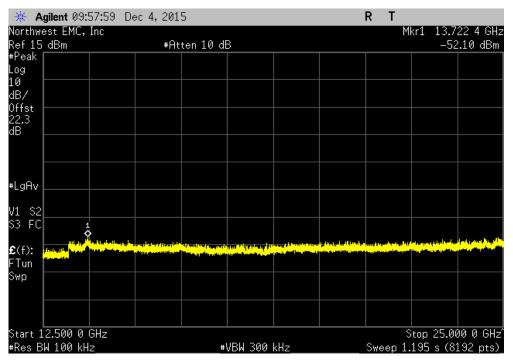
Chain A, 20 MHz, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
Frequency	Max	<b>Value</b>	Limit		
Range	(d	3c)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-49	.88	-20	Pass	



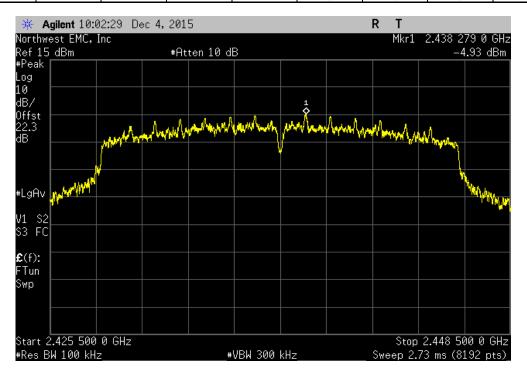
Report No. ELTL0004.1 174/223



Chain A, 20 MHz, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
	12.5 GHz - 25 GHz		-45.31	-20	Pass



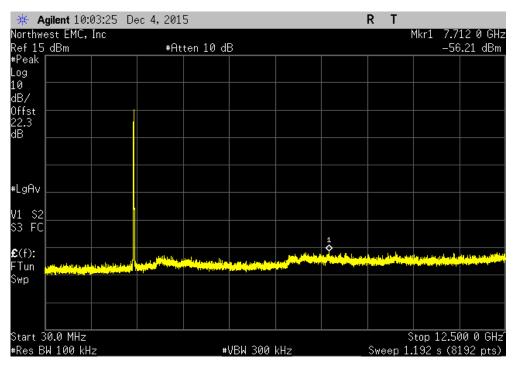
Chain A, 20 MHz, 802.11(n) MCS7, Mid Channel 6, 2437 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
	Fundamental		N/A	N/A	N/A



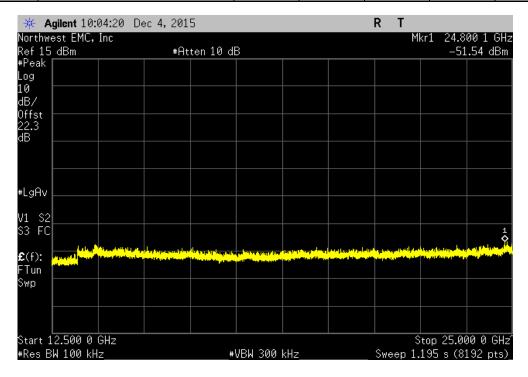
Report No. ELTL0004.1 175/223



Chain A, 20 MHz, 802.11(n) MCS7, Mid Channel 6, 2437 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
30 MHz - 12.5 GHz	-51.28	-20	Pass		



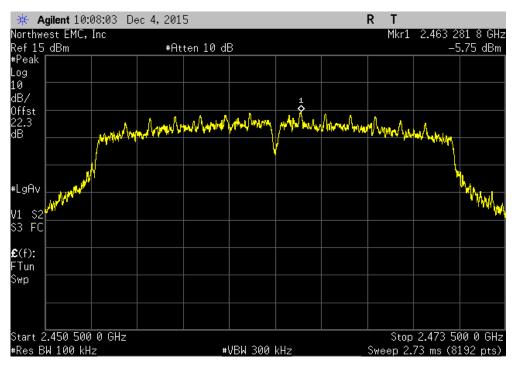
Chain A, 20 MHz, 802.11(n) MCS7, Mid Channel 6, 2437 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	12.5 GHz - 25 GHz		-46.62	-20	Pass



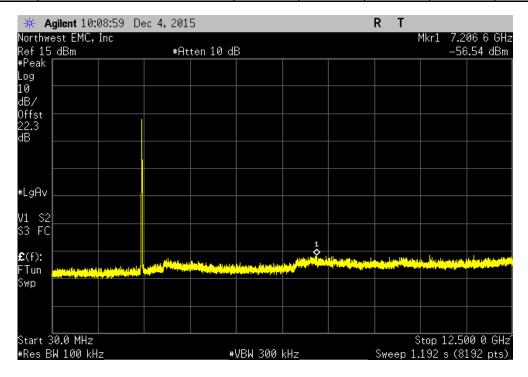
Report No. ELTL0004.1 176/223



Chain A, 20 MHz, 802.11(n) MCS7, High Channel 11, 2462 MHz					
	(, <u>g</u> .	Max Value	Limit		
Frequency		wax value	LIIIII		
Range		(dBc)	≤ (dBc)	Result	
Fundamental		N/A	N/A	N/A	

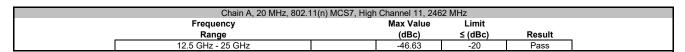


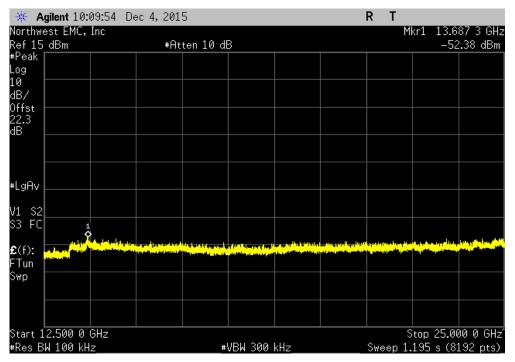
Chain A, 20 MHz, 802.11(n) MCS7, High Channel 11, 2462 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
l	30 MHz - 12.5 GHz		-50.8	-20	Pass



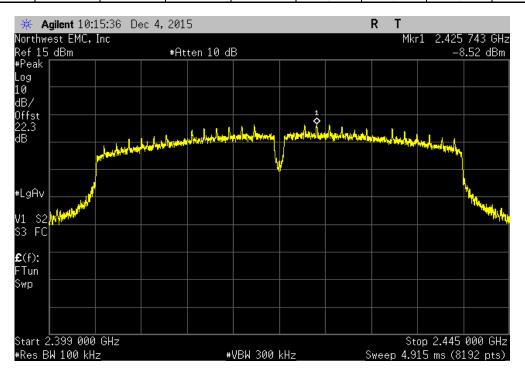
Report No. ELTL0004.1 177/223







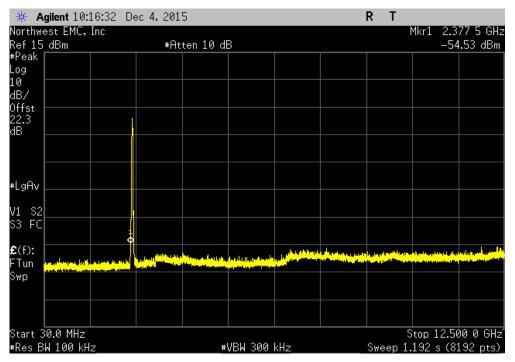
Chain A, 40 MHz, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz					
	Frequency	Max Value	Limit		
	Range	(dBc)	≤ (dBc)	Result	
	Fundamental	N/A	N/A	N/A	



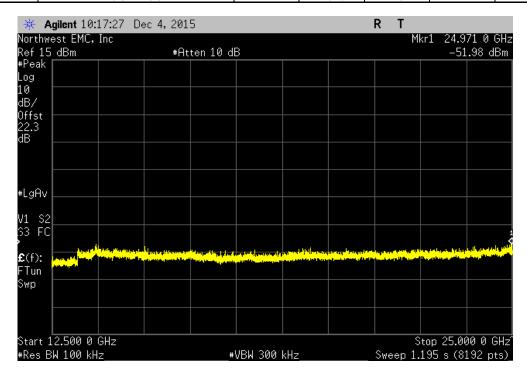
Report No. ELTL0004.1 178/223



01 : 4 40 1411 000 44	( ) 11000 1 01 11/5 010	2 1 4 1 1				
Chain A, 40 MHz, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz						
Frequency	Max Value	Limit				
Range	(dBc)	≤ (dBc)	Result			
30 MHz - 12.5 GHz	-46.01	-20	Pass			



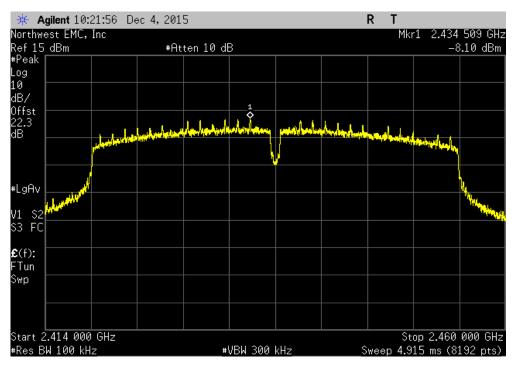
Chain A, 40 MHz, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz					
Frequency		Max Value	Limit		
 Range		(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz		-43.46	-20	Pass	



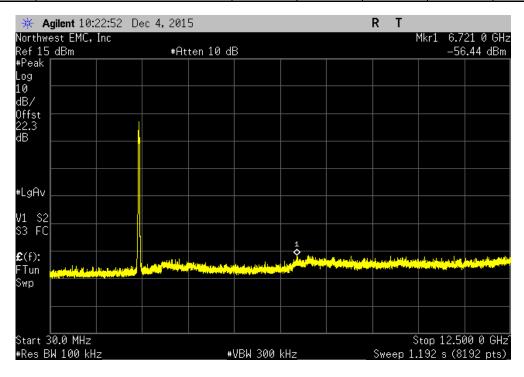
Report No. ELTL0004.1 179/223



Chain A, 40 MHz, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz						
Frequency	Max Value	Limit				
Range	(dBc)	≤ (dBc)	Result			
Fundamental	N/A	N/A	N/A			



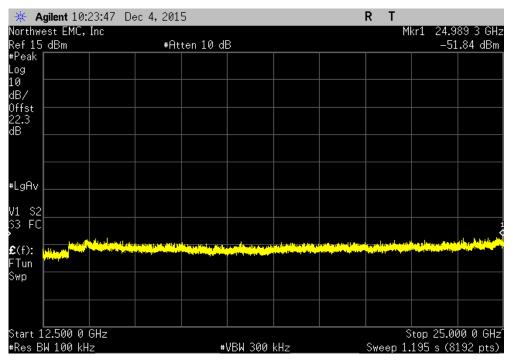
Chain A, 40 MHz, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz					
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
	30 MHz - 12.5 GHz		-48.34	-20	Pass



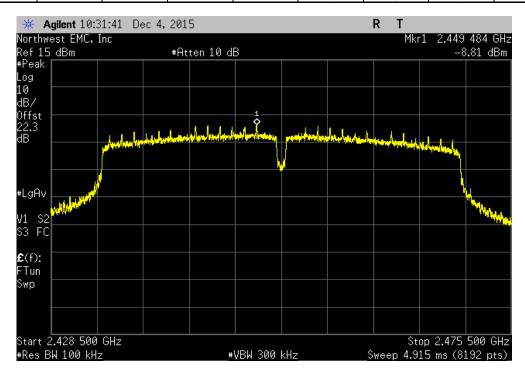
Report No. ELTL0004.1 180/223



Chain A, 40 MHz, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz				
Frequency	, ,	Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-43.74	-20	Pass



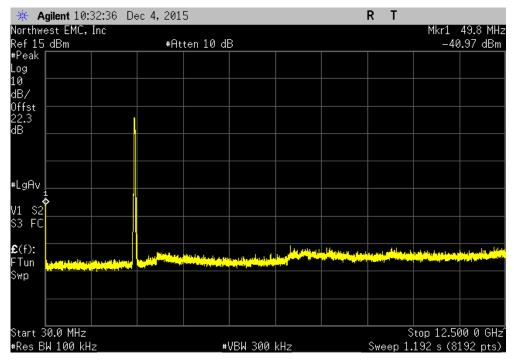
	Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz				
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
i ſ	Fundamental		N/A	N/A	N/A



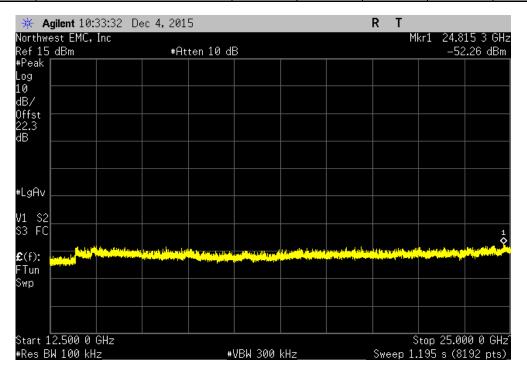
Report No. ELTL0004.1 181/223



Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz				
_ ` ` `	Max Value	Limit		
Frequency	iviax value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-32.16	-20	Pass	



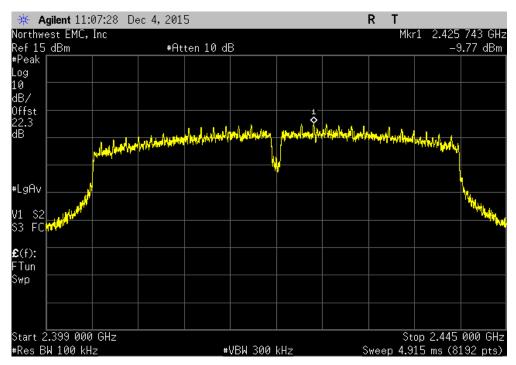
	Chain A, 40 MHz, 802.11(n) MCS0, High Channel 7/11, 2452 MHz				
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
1	12.5 GHz - 25 GHz		-43.45	-20	Pass



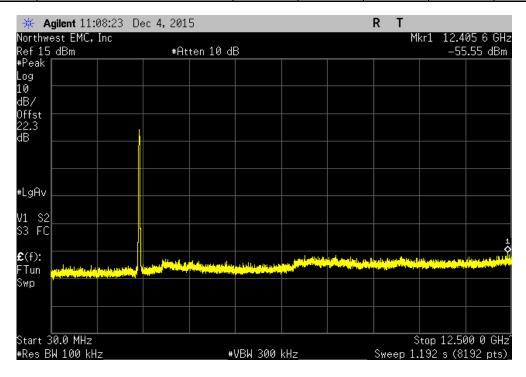
Report No. ELTL0004.1 182/223



Chain A, 40 MHz, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
Fundamental	N/A	N/A	N/A		

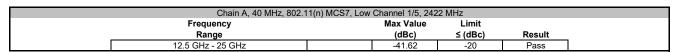


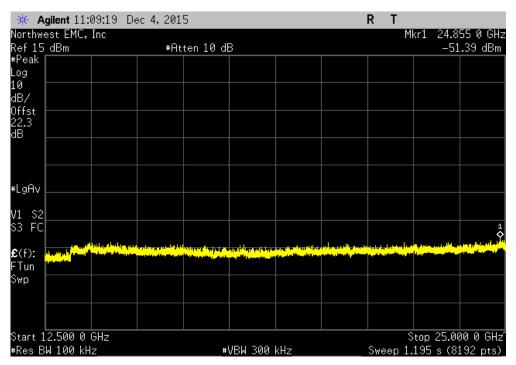
Chain A, 40 MHz, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
	30 MHz - 12.5 GHz		-45.78	-20	Pass



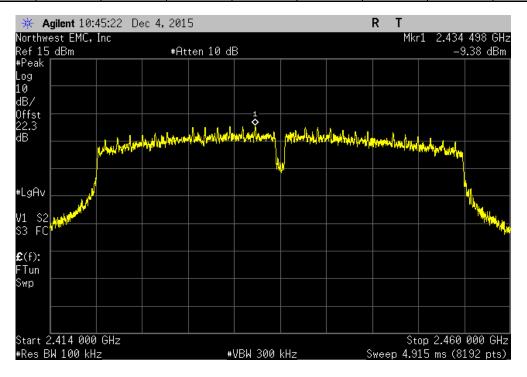
Report No. ELTL0004.1 183/223







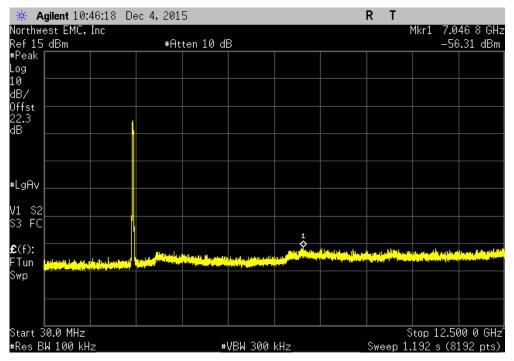
Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz					
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
Fundamental		N/A	N/A	N/A	



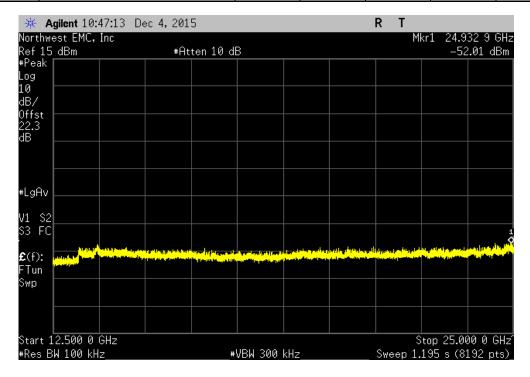
Report No. ELTL0004.1 184/223



Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz				
Frequency	, , , ,	Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz		-46.93	-20	Pass



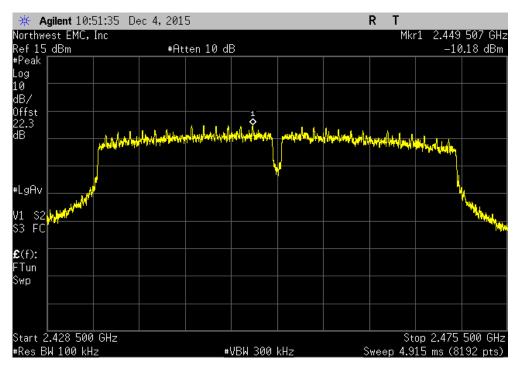
Chain A, 40 MHz, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz				
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-42.63	-20	Pass



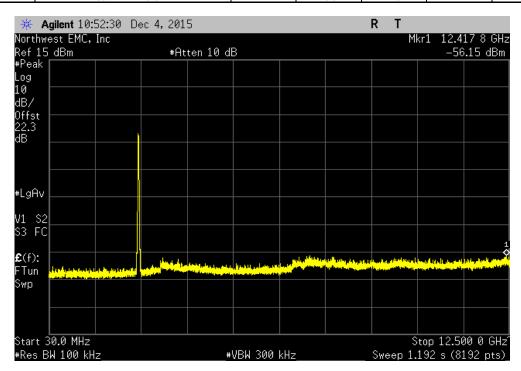
Report No. ELTL0004.1 185/223



Chain A,	, 40 MHz, 802.11(n) MCS7, High	Channel 7/11, 24	52 MHz	
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



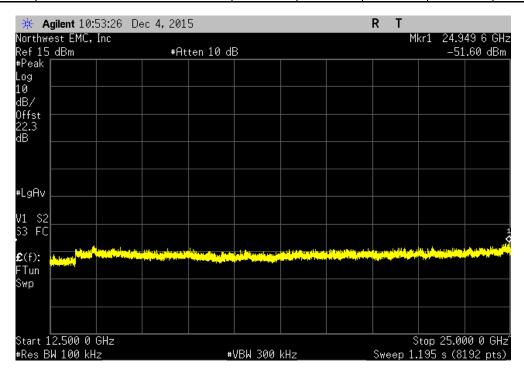
Chain A, 40 MHz, 802.11(n) MCS7, High Channel 7/11, 2452 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-45.97	-20	Pass	



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Chain A, 40 MHz, 802.11(n) MCS7, High Channel 7/11, 2452 MHz				
Frequency	Max Value	Limit		
			December	
Range	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	-41.42	-20	Pass	



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	9/18/2015	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	9/18/2015	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

#### **TEST DESCRIPTION**

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

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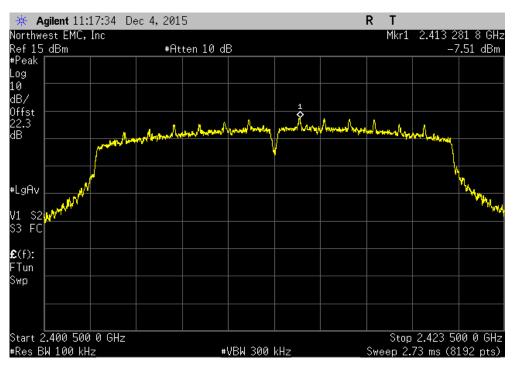


EUT	: Marcum RT-9			Work Order:	ELTI 0004	
	r: RTS0123456811				12/04/15	
		- 110				
	r: Electronic Technologies			Temperature:		
	Rocky Holmes, Deb See	1		Humidity:		
	t: None			Barometric Pres.:		
	: Trevor Buls		Power: 110VAC/60Hz	Job Site:	MN08	
TEST SPECIFICAT	TIONS		Test Method			
FCC 15.247:2015			ANSI C63.10:2013			
COMMENTS						
None						
None						
DEVIATIONS EDO	M TEST STANDARD					
	W IESI SIANDARD					
None		1				
	_		revor Buls			
Configuration #	5	4)7	100 mg			
		Signature				
			Frequency	Max Value	Limit	
			Range	(dBc)	≤ (dBc)	Result
Chain A						
	20 MHz					
		2483.5 MHz Band				
		802.11(n) MCS8				
		Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
		Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-48.68	-20	Pass
		Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-44.42	-20	Pass
		Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-48.39	-20	Pass
		Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-45.03	-20	Pass
		High Channel 11, 2462 MF	Fundamental	N/A	N/A	N/A
		High Channel 11, 2462 MF	30 MHz - 12.5 GHz	-48.26	-20	Pass
		High Channel 11, 2462 MF	12.5 GHz - 25 GHz	-43.29	-20	Pass
		802.11(n) MCS15				
		Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
		Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-46.19	-20	Pass
		Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-41.87	-20	Pass
		Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-47.78	-20	Pass
		Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-44.34	-20	Pass
		High Channel 11, 2462 MF	Fundamental	N/A	N/A	N/A
		High Channel 11, 2462 MF	30 MHz - 12.5 GHz	-47.84	-20	Pass
01 . 5		High Channel 11, 2462 MF	12.5 GHz - 25 GHz	-43.12	-20	Pass
Chain B						
	20 MHz					
	2400 MHz -	2483.5 MHz Band				
		802.11(n) MCS8				
		Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
		Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-38.6	-20	Pass
		Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-48.77	-20	Pass
		Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-38.48	-20	Pass
		Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-48.75	-20	Pass
		High Channel 11, 2462 MF	Fundamental	N/A	N/A	N/A
		High Channel 11, 2462 MF	30 MHz - 12.5 GHz	-39.46	-20	Pass
		High Channel 11, 2462 MF	12.5 GHz - 25 GHz	-48.81	-20	Pass
		802.11(n) MCS15	12.0 0112 - 20 0112		-20	1 000
			Fundamental	N/A	NI/A	N/A
		Low Channel 1, 2412 MHz	Fundamental		N/A	
		Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-39.54	-20	Pass
		Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-48.74	-20	Pass
		Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
		Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-38.51	-20	Pass
		Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-49.34	-20	Pass
		High Channel 11, 2462 MF	Fundamental	N/A	N/A	N/A
		High Channel 11, 2462 MF	30 MHz - 12.5 GHz	-36.65	-20	Pass
		High Channel 11, 2462 MF	12.5 GHz - 25 GHz	-48.76	-20	Pass
		J	· · · <del></del>	:=:: #		

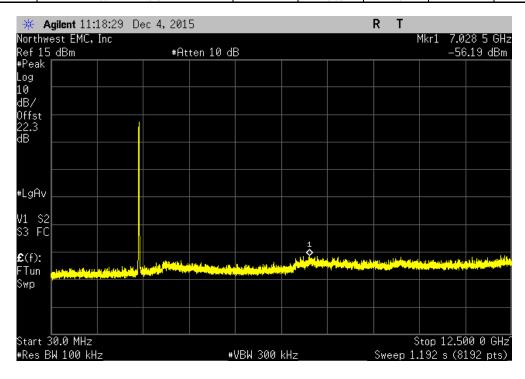
Report No. ELTL0004.1 189/223



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



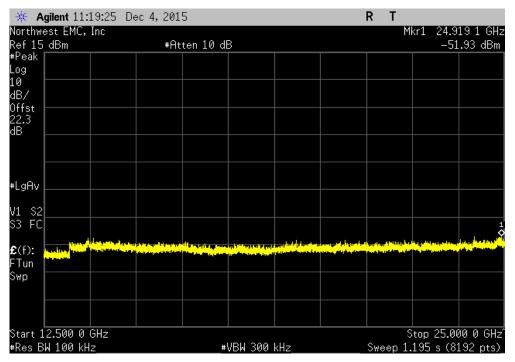
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
30 MHz - 12.5 GHz	-48.68	-20	Pass		



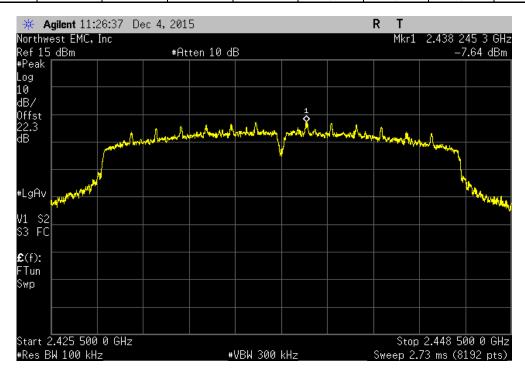
Report No. ELTL0004.1 190/223



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	-44.42	-20	Pass	



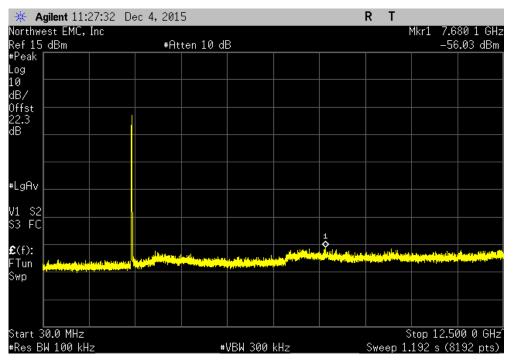
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz					
Frequenc	у	Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
Fundament	al	N/A	N/A	N/A	



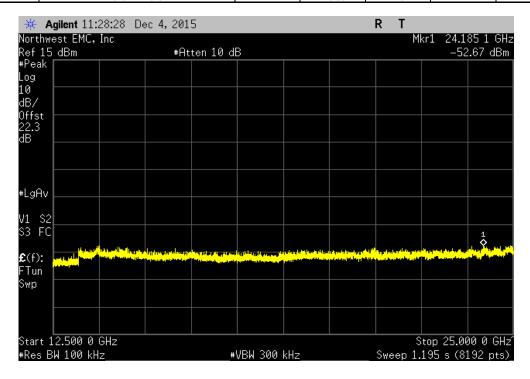
Report No. ELTL0004.1 191/223



Chain A, 20 MHz, 2400 MHz - 2483.5 N	MHz Band, 802.11(	(n) MCS8, Mid (	Channel 6, 2437 I	MHz	
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz		-48.39	-20	Pass	



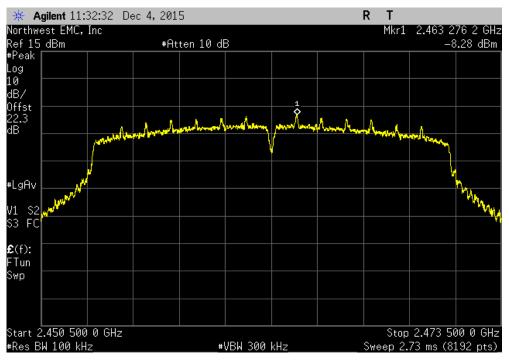
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz					
	Frequency		Max Value	Limit	
<u> </u>	Range		(dBc)	≤ (dBc)	Result
12	.5 GHz - 25 GHz		-45.03	-20	Pass



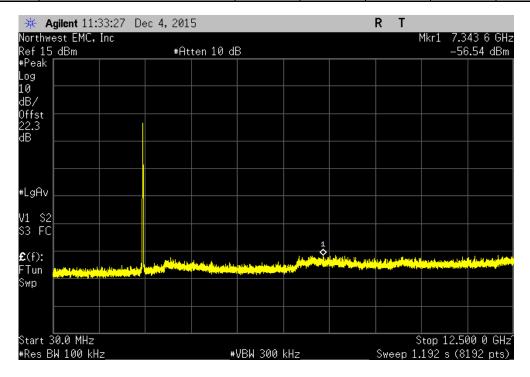
Report No. ELTL0004.1 192/223



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz Frequency Max Value Limit Range (dBc) ≤ (dBc) Result					
	Chain A. 20 MHz, 2400 MHz - 2483.5 MHz Band, 802,11(n) MCS8, High Channel 11, 2462 MHz				
	Frequency	Max Value	Limit		
		(dBc)		Result	
Fundamental N/A N/A N/A			,		



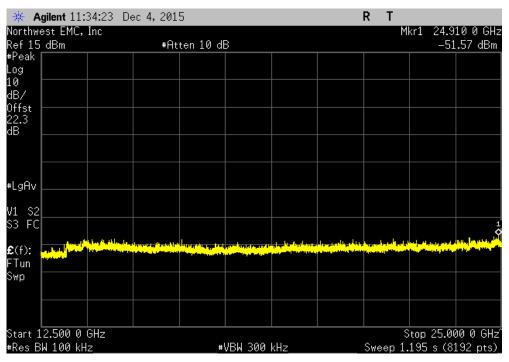
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
l	30 MHz - 12.5 GHz		-48.26	-20	Pass



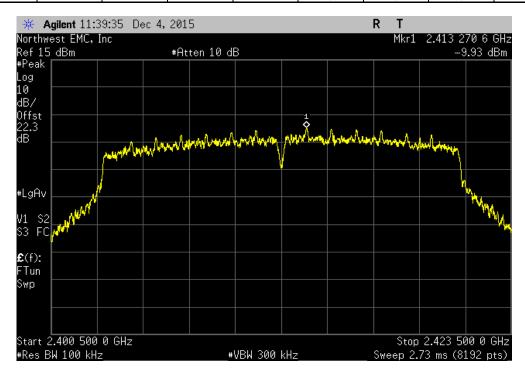
Report No. ELTL0004.1 193/223



Chain A, 20 MHz, 2400 MHz - 2483.5 M	IHz Band, 802.11	(n) MCS8, High (	Channel 11, 2462	MHz	
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz		-43.29	-20	Pass	



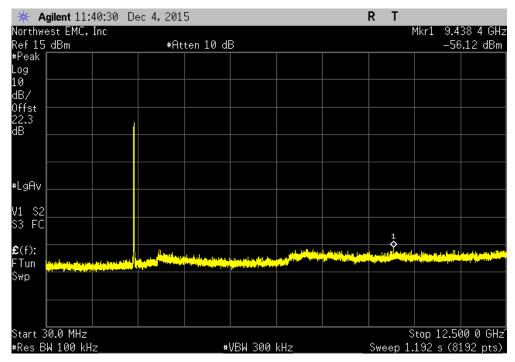
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz					
Fre	equency		Max Value	Limit	
I	Range		(dBc)	≤ (dBc)	Result
Fun	ndamental		N/A	N/A	N/A



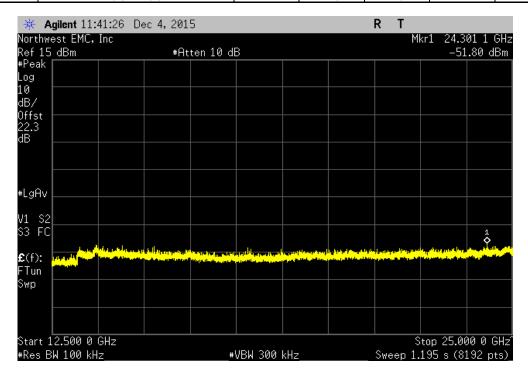
Report No. ELTL0004.1 194/223



Chain A, 20 MHz, 2400 MHz - 2483.5 M	IHz Band, 802.11	(n) MCS15, Low	Channel 1, 2412	MHz	
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz		-46.19	-20	Pass	



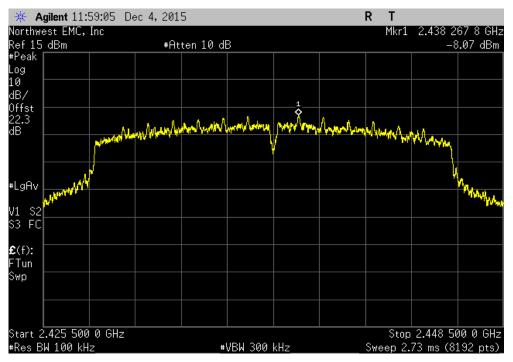
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
Frequency		Max Value	Limit			
Range		(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz		-41.87	-20	Pass		



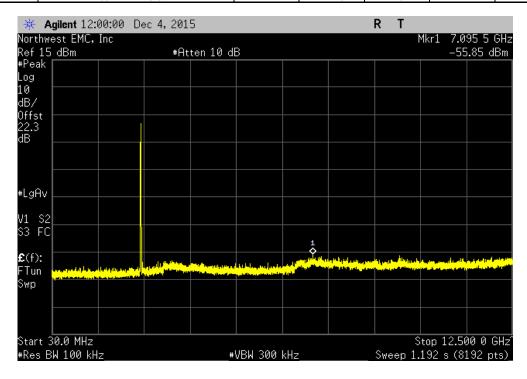
Report No. ELTL0004.1 195/223



Chain A. 20 MHz. 2400 MHz - 2483.	5 MHz Band, 802.1	1(n) MCS15. Mid	Channel 6, 2437	MHz
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



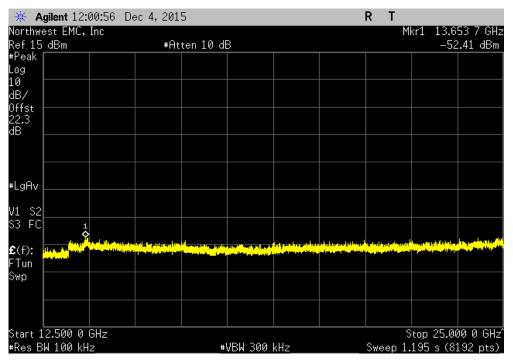
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
30 MHz - 12.5 GHz	-47.78	-20	Pass		



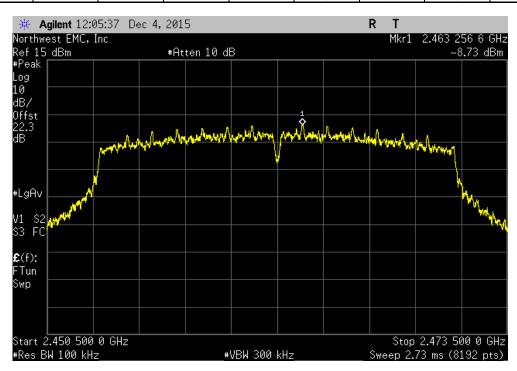
Report No. ELTL0004.1 196/223



	Chain A, 20 MHz, 2400 MHz - 2483.5 M	/IHz Band, 802.1	1(n) MCS15, Mid	Channel 6, 2437	MHz	
	Frequency		Max Value	Limit		
_	Range		(dBc)	≤ (dBc)	Result	_
	12.5 GHz - 25 GHz		-44.34	-20	Pass	



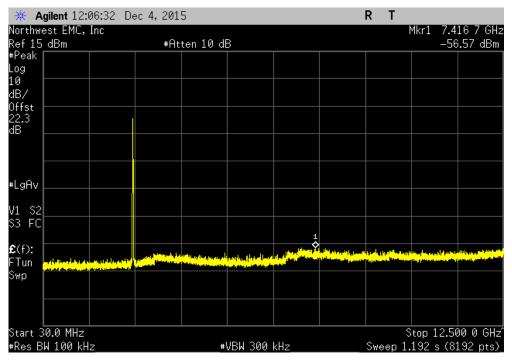
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
Fundamental	N/A	N/A	N/A		



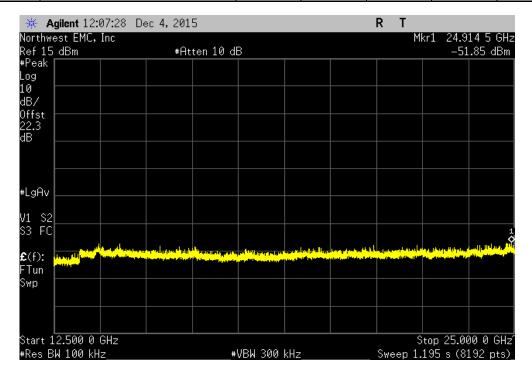
Report No. ELTL0004.1 197/223



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
30 MHz - 12.5 GHz	-47.84	-20	Pass		



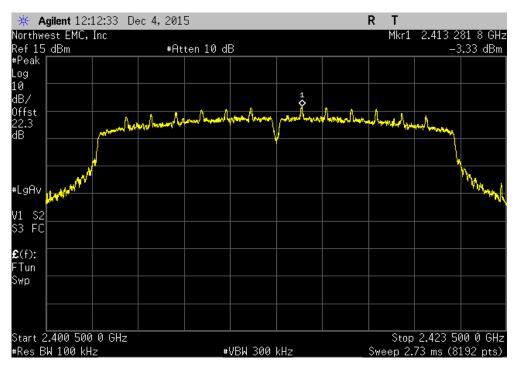
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz					
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
l	12.5 GHz - 25 GHz		-43.12	-20	Pass



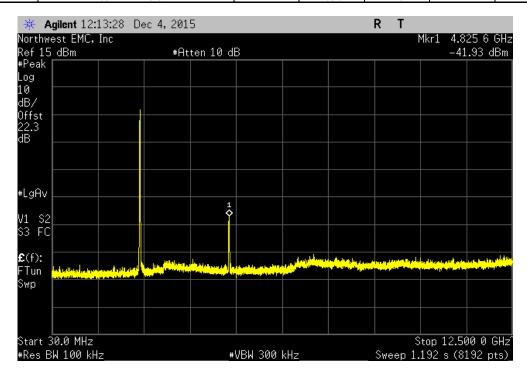
Report No. ELTL0004.1 198/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Ban	nd. 802.11(n) MCS8. Low (	Channel 1, 2412	MHz
<u>-</u> '	, , , ,	,	
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



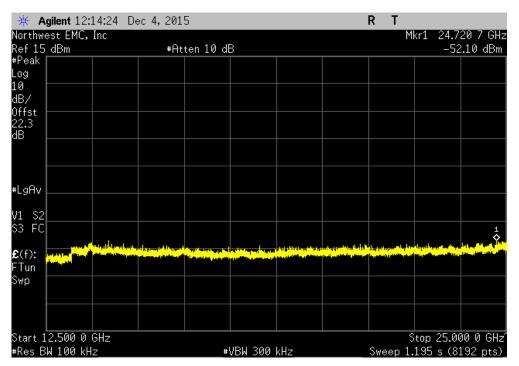
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency	Max	Value	Limit	
Range	(d	Bc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-3	8.6	-20	Pass



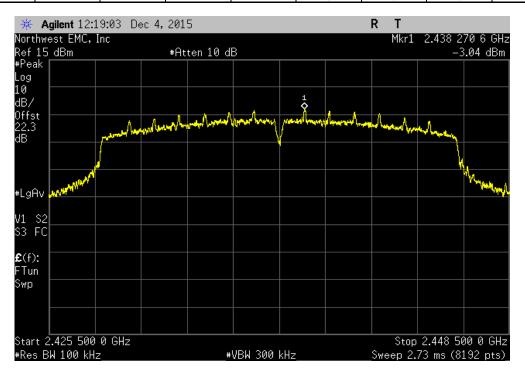
Report No. ELTL0004.1 199/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz	-48.77	-20	Pass		



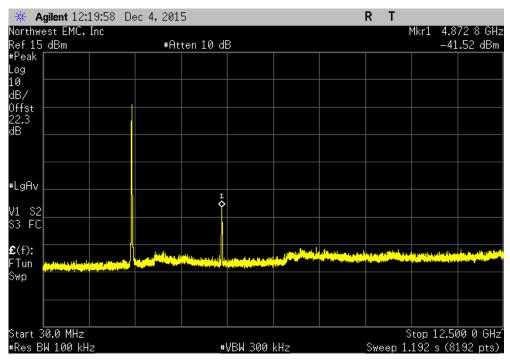
Chain B, 20 MHz, 2400 M	MHz - 2483.5 MHz Band, 802.	11(n) MCS8, Mid (	Channel 6, 2437	MHz
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



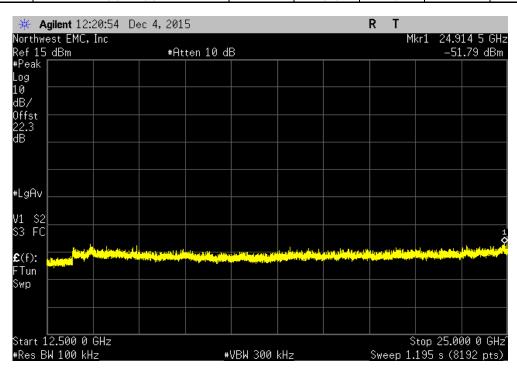
Report No. ELTL0004.1 200/223



Chain B. 20 MHz. 2400 MHz - 2483.5 MHz Band. 802.11(n) MCS8. Mid Channel 6. 2437 MHz				
511am 2, 20 m 12, 2 100 m 12 2 100 0	, ( , ,	, -		
Frequency	Max Value	Limit		
rrequency	INIAX VAIGE	Lilling		
Range	(dBc)	≤ (dBc)	Result	
Range	(uDC)	⊇ (uDc)	iveanit	
30 MHz - 12.5 GHz	-38.48	-20	Door	
30 NITZ - 12.5 GTZ	-30.40	-20	Pass	



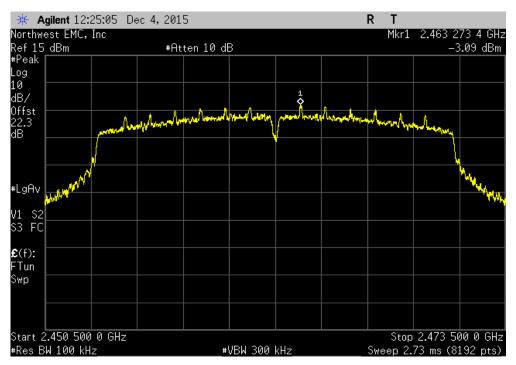
Chain B, 20 MHz, 2400 MHz - 24	33.5 MHz Band, 802.	11(n) MCS8, Mid	Channel 6, 2437	MHz
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-48.75	-20	Pass



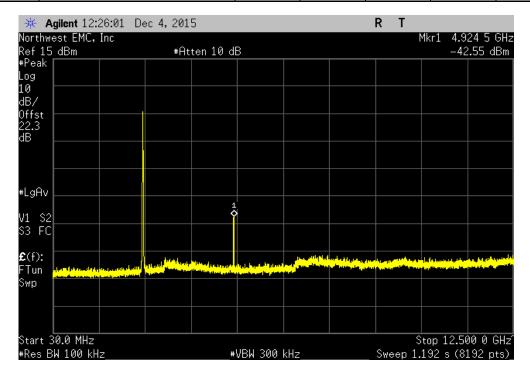
Report No. ELTL0004.1 201/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Ba	nd. 802.11(n) MCS8. High Ch	annel 11, 2462	2 MHz
Frequency	Max Value	Limit	
			Decula
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



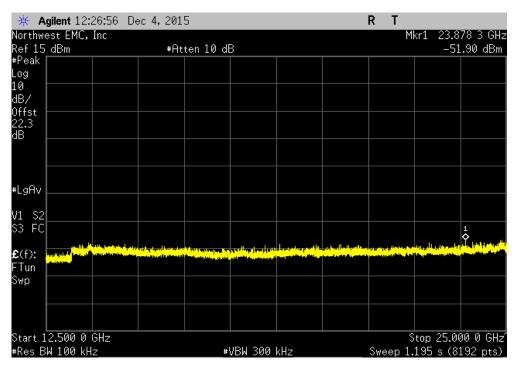
	Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
	Frequency		Max Value	Limit	
_	Range		(dBc)	≤ (dBc)	Result
ĺ	30 MHz - 12.5 GHz		-39.46	-20	Pass



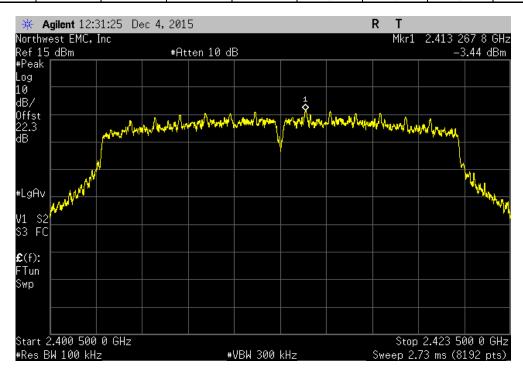
Report No. ELTL0004.1 202/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz	-48.81	-20	Pass		



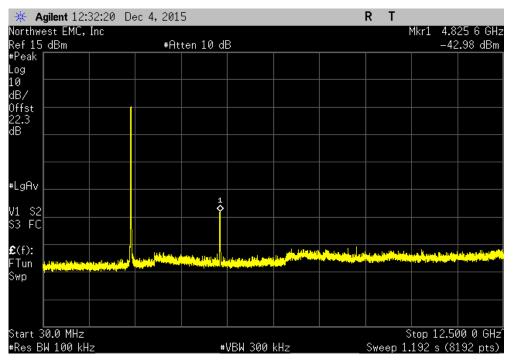
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz					
Frequency		Max Value	Limit		
 Range		(dBc)	≤ (dBc)	Result	
Fundamental		N/A	N/A	N/A	



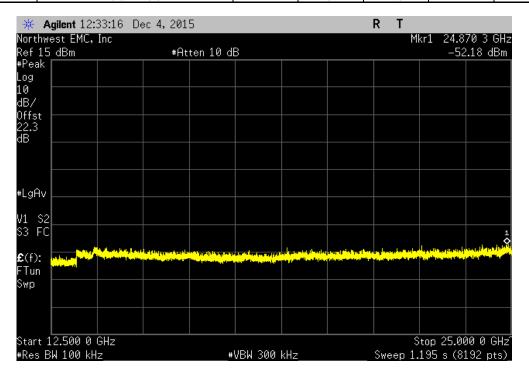
Report No. ELTL0004.1 203/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
30 MHz - 12.5 GHz	-39.54	-20	Pass		



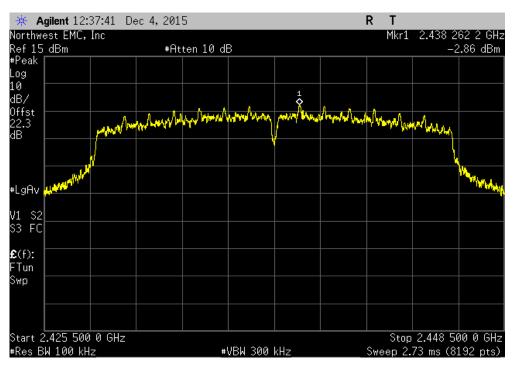
Chain B, 20 MHz, 2400	Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz				
Frequency		Max Value	Limit		
Range		(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	,	-48.74	-20	Pass	



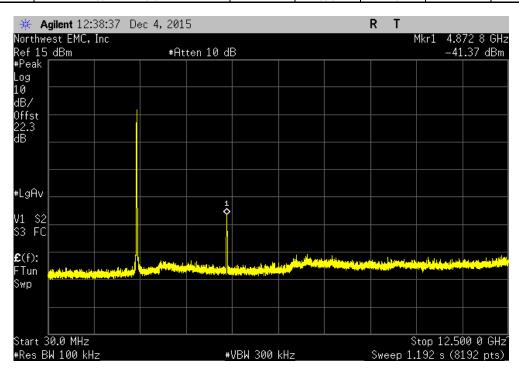
Report No. ELTL0004.1 204/223



Chain B. 20 MHz. 2400 MHz - 2483.5 MHz Band	I. 802.11(n) MCS15. Mid (	Channel 6, 2437	MHz
, , , , , , , , , , , , , , , , , , , ,	Max Value	Limit	
Frequency	wax value	Limit	
Range	(dBc)	≤ (dBc)	Result
Final annual d	NI/A	NI/A	N1/A
I I Fundamental I	N/A	N/A	N/A



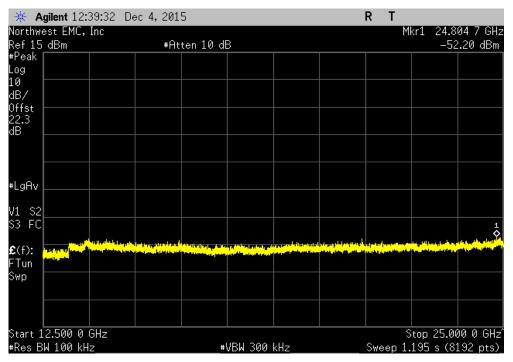
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-38.51	-20	Pass	



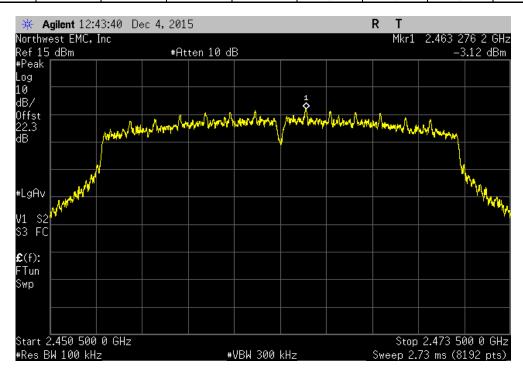
Report No. ELTL0004.1 205/223



Chain B. 20 MHz. 2400 MHz - 2483.5 MHz Band. 802.11(n) MCS15. Mid Channel 6. 2437 MHz					
Frequency	Max Value	Limit			
Range	(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz	-49.34	-20	Pass		



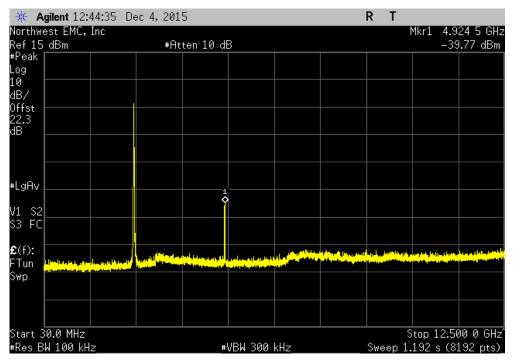
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz				
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



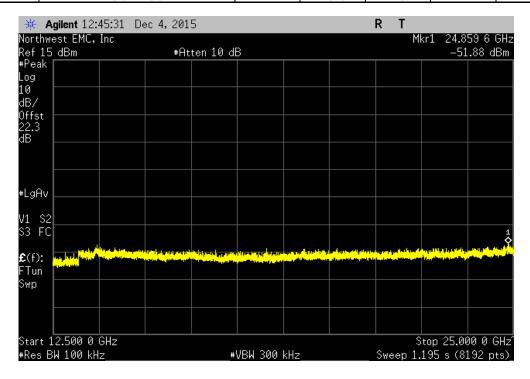
Report No. ELTL0004.1 206/223



Chain B, 20 MHz, 2400 MHz - 2483.5 MF	Hz Band, 802.11(n) MCS15, High	n Channel 11, 246	2 MHz
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-36.65	-20	Pass



Chain B, 20 MHz, 2400 MHz - 24	33.5 MHz Band, 802.11	(n) MCS15, High	Channel 11, 246	2 MHz
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-48.76	-20	Pass



Report No. ELTL0004.1 207/223



### SPURIOUS RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

#### **MODES OF OPERATION**

Transmitting 802.11 - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 6 Mbps, 11 Mbps, 36 Mbps, 54 Mbps, MCS0, MCS7, MCS8, and MCS15 at 20 MHz bandwidth; low channel (2422 MHz), mid channel (2437 MHz), and high channel (2452 MHz) with MCS0 and MCS7 data rates at 40 MHz bandwidth.

#### **POWER SETTINGS INVESTIGATED**

12VDC

#### **CONFIGURATIONS INVESTIGATED**

ELTL0004 - 1

#### FREQUENCY RANGE INVESTIGATED

	Start Frequency	30 MHz	Stop Frequency	26500 MHz
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#### SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Filter - Low Pass	Micro-Tronics	LPM50004	HGK	3/2/2015	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HGQ	3/2/2015	12 mo
Attenuator	S.M. Electronics	SA6-20	REO	3/2/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/18/2015	12 mo
Cable	Northwest EMC	18-26GHz Standard Gain Horn Cable	MNP	9/18/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	3/2/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	11/13/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	3/2/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	3/2/2015	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	5/5/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJA	6/3/2014	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	3/2/2015	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	3/30/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	12/17/2013	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2015	12 mo

#### **MEASUREMENT BANDWIDTHS**

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

#### **TEST DESCRIPTION**

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

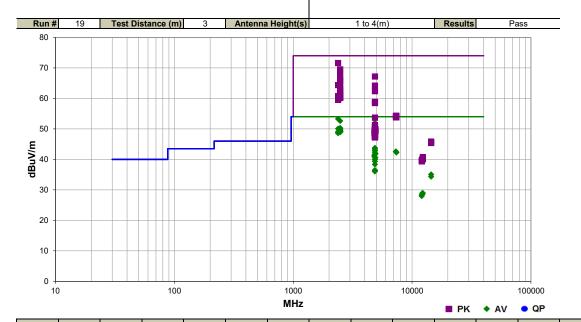


## **SPURIOUS RADIATED EMISSIONS**

Work Order:	ELTL0004	ELTL0004 Date: 12/02/15						
Project:	None	None Temperature: 21.8 °C						
Job Site:	MN05 Humidity: 26.5% RH							
Serial Number:	RTS0123456811	RTS0123456811 Barometric Pres.: 980.4 mbar Tested by: Dustin Sparks						
EUT:	Marcum RT-9							
Configuration:	1							
Customer:	Electronic Technologies, LLC							
Attendees:	Rocky Holmes, Deb See							
EUT Power:								
	Transmitting 802.11 - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 6 Mbps, 11 Mbps, 36 Mbps, 54 Mbps, MCS0, MCS7, MCS8, and MCS15 at 20 MHz bandwidth; low channel (2422 MHz), mid channel (2437 MHz), and high channel (2452 MHz) with MCS0 and MCS7 data rates at 40 MHz bandwidth.							
Deviations:	None							
Comments:	Shield U1 top and bottom, U12, and U8, ferrite on sonar module, ferrite on camera and internal ferrite camera module							
Test Specifications		N/A	Test Met					

 Test Specifications
 N/A
 Test Method

 FCC 15.247:2015
 ANSI C63.10:2013



Freq	Amplitude	Factor	Antenna Height	Azimuth	Test Distance	External Attenuation	Transducer Type	Detector	Distance Adjustment	Adjusted	Spec. Limit	Compared to Spec.	
(MHz)	(dBuV)	(dB)	(meters)	(degrees)	(meters)	(dB)			(dB)	(dBuV/m)	(dBuV/m)	(dB)	Comments
2389.575	35.5	-2.2	1.5	197.0	3.0	20.0	Horz	AV	0.0	53.3	54.0	-0.7	Low ch, EUT horz, MCS0, 40MHz BW
2483.725	34.5	-1.9	1.3	168.0	3.0	20.0	Horz	AV	0.0	52.6	54.0	-1.4	High ch, EUT horz, MCS0, 40MHz BW
4875.167	45.5	6.5	2.3	125.0	3.0	0.0	Horz	AV	0.0	52.0	54.0	-2.0	Mid ch, EUT horz, MCS8, 20MHz BW
2385.225	53.8	-2.2	1.5	197.0	3.0	20.0	Horz	PK	0.0	71.6	74.0	-2.4	Low ch, EUT horz, MCS0, 40MHz BW
2483.508	32.2	-1.9	1.0	137.1	3.0	20.0	Horz	AV	0.0	50.3	54.0	-3.7	High ch, EUT horz, MCS8, 20MHz BW
2483.575	32.0	-1.9	1.4	196.1	3.0	20.0	Horz	AV	0.0	50.1	54.0	-3.9	High ch, EUT horz, MCS0, 20MHz BW
2389.917	32.3	-2.2	1.3	115.0	3.0	20.0	Horz	AV	0.0	50.1	54.0	-3.9	Low ch, EUT horz, MCS8, 20MHz BW
2484.142	31.9	-1.9	1.3	168.0	3.0	20.0	Horz	AV	0.0	50.0	54.0	-4.0	High ch, EUT horz, MCS7, 40MHz BW
2483.500	31.7	-1.9	3.5	27.0	3.0	20.0	Horz	AV	0.0	49.8	54.0	-4.2	High ch, EUT vert, MCS8, 20MHz BW
2483.550	31.6	-1.9	1.0	153.0	3.0	20.0	Vert	AV	0.0	49.7	54.0	-4.3	High ch, EUT on side, MCS8, 20MHz BW
2484.892	51.4	-1.9	1.3	168.0	3.0	20.0	Horz	PK	0.0	69.5	74.0	-4.5	High ch, EUT horz, MCS0, 40MHz BW
2487.267	31.3	-1.9	1.4	196.1	3.0	20.0	Horz	AV	0.0	49.4	54.0	-4.6	High ch, EUT horz, 1 Mbps, 20MHz BW
2483.742	31.3	-1.9	1.0	176.0	3.0	20.0	Horz	AV	0.0	49.4	54.0	-4.6	High ch, EUT horz, 6 Mbps, 20MHz BW
2483.675	31.3	-1.9	1.4	196.1	3.0	20.0	Horz	AV	0.0	49.4	54.0	-4.6	High ch, EUT horz, 54 Mbps, 20MHz BW
4875.000	42.9	6.5	1.1	15.1	3.0	0.0	Horz	AV	0.0	49.4	54.0	-4.6	Mid ch, EUT on side, MCS8, 20MHz BW
2483.908	31.1	-1.9	2.6	348.9	3.0	20.0	Horz	AV	0.0	49.2	54.0	-4.8	High ch, EUT on side, MCS8, 20MHz BW
2483.633	31.1	-1.9	1.4	196.1	3.0	20.0	Horz	AV	0.0	49.2	54.0	-4.8	High ch, EUT horz, 36 Mbps, 20MHz BW
2485.783	31.0	-1.9	1.0	66.1	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	High ch, EUT horz, MCS7, 20MHz BW
2485.658	31.0	-1.9	2.9	193.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	High ch, EUT horz, MCS15, 20MHz BW
2484.733	31.0	-1.9	1.0	272.9	3.0	20.0	Vert	AV	0.0	49.1	54.0	-4.9	High ch, EUT horz, MCS8, 20MHz BW
2484.175	31.0	-1.9	2.9	193.0	3.0	20.0	Vert	AV	0.0	49.1	54.0	-4.9	High ch, EUT vert, MCS8, 20MHz BW
2483.850	31.0	-1.9	1.0	301.9	3.0	20.0	Vert	AV	0.0	49.1	54.0	-4.9	High ch, EUT on side, 6 Mbps, 20MHz BW
2388.883	31.3	-2.2	1.3	115.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	Low ch, EUT horz, MCS15, 20MHz BW
2488.317	30.9	-1.9	2.3	195.1	3.0	20.0	Vert	AV	0.0	49.0	54.0	-5.0	High ch, EUT vert, 6 Mbps, 20MHz BW
2487.958	30.9	-1.9	2.2	139.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	High ch, EUT vert, 6 Mbps, 20MHz BW
2486.050	30.9	-1.9	1.0	48.1	3.0	20.0	Vert	AV	0.0	49.0	54.0	-5.0	High ch, EUT horz, 6 Mbps, 20MHz BW
2483.533	30.9	-1.9	1.0	250.9	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	High ch, EUT on side, 6 Mbps, 20MHz BW
2483.683	30.8	-1.9	1.4	196.1	3.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	High ch, EUT horz, 11 Mbps, 20MHz BW
2386.383	31.1	-2.2	1.0	161.0	3.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	Low ch, EUT horz, 1 Mbps, 20MHz BW
2389.967	30.8	-2.2	1.0	161.0	3.0	20.0	Horz	AV	0.0	48.6	54.0	-5.4	Low ch, EUT horz, 6 Mbps, 20MHz BW
4875.308	41.6	6.5	1.7	165.0	3.0	0.0	Vert	AV	0.0	48.1	54.0	-5.9	Mid ch, EUT vert, MCS8, 20MHz BW
2484.675	49.7	-1.9	1.3	168.0	3.0	20.0	Horz	PK	0.0	67.8	74.0	-6.2	High ch, EUT horz, MCS7, 40MHz BW
4874.242	60.7	6.5	2.3	125.0	3.0	0.0	Horz	PK	0.0	67.2	74.0	-6.8	Mid ch, EUT horz, MCS8, 20MHz BW

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2484.7502   45.1   1.5   1.0   197.1   3.0   20.0   Horz   PK   0.0   65.2   74.0   3.3   High-Life UT rear. MISS   2388.167   46.6   2.2   1.3   115.0   3.0   20.0   Horz   PK   0.0   64.4   74.0   -6.6   Low ch. EUT rear. MISS   2388.167   46.6   2.2   1.3   115.0   3.0   20.0   Horz   PK   0.0   64.4   74.0   -6.6   Low ch. EUT rear. MISS   2484.757   45.5   1.5   1.4   196.1   3.0   2.0   Horz   PK   0.0   64.4   74.0   -6.6   Low ch. EUT rear. MISS   2484.757   45.5   1.5   1.5   1.4   196.1   3.0   2.0   Horz   PK   0.0   64.2   74.0   -1.0   High ch. EUT rear. MISS   2484.757   45.5   1.5   1.5   1.4   196.1   3.0   0.0   Horz   PK   0.0   64.0   74.0   -1.0   High ch. EUT rear. MISS   2484.757   45.5   4	
288167   46.6   -2.2   1.3   115.0   3.0   0.0   Horz   PK   0.0   64.2   74.0   -9.6   Low ch. EUT nov., MCSB   14.4   196.1   3.0   0.0   Horz   PK   0.0   64.2   74.0   -9.8   Mich. EUT nov., MCSB   14.5   19.6   19.5   1	, 20MHz BW
4871402 57.7 6.5 1.1 15.1 3.0 0.0 Horz PK 0.0 64.2 74.0 4.96 Mide ft, EUT on side, MCC 4446575 64.9 1.19 1.4 196.1 30 20.0 Horz PK 0.0 64.0 74.0 1.00 High ft, EUT or side, MCC 447500 373 65.6 1.0 2110 30 0.0 Horz AV 0.0 43.8 54.0 1.10 2 Mide ft, EUT or side, MCC 447500 373 65.6 1.0 2110 30 0.0 Horz AV 0.0 43.8 54.0 1.10 2 Mide ft, EUT or side, MCC 447500 373 65.6 1.0 2110 30 0.0 Horz AV 0.0 43.8 54.0 1.10 19. Mide ft, EUT or side, MCC 447500 373 65.6 1.0 19. Mide ft, EUT or side, MCC 447500 373 65.6 1.0 1.0 19. Mide ft, EUT or side, MCC 447500 370 670 1.10 Mide ft, EUT or side, MCC 447500 370 670 670 670 670 670 670 670 670 670 6	
2484-575   459   1-19	
4875 000 37.1 6.5 1.0 17.0 3.0 0.0 Horz AV 0.0 43.6 54.0 -10.4 Mid ch. EUT neider. IMP 1875 017 3.0 6.0 6.5 1.7 166.0 3.0 0.0 Horz AV 0.0 43.6 54.0 -10.9 Mid ch. EUT neider. IMP 1875 017 3.0 6.0 6.5 1.7 166.0 3.0 0.0 Horz AV 0.0 42.8 54.0 -11.1 High ch. EUT neider. IMP 1873 883 3.0 4.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 42.8 54.0 -11.1 Mid ch. EUT neider. IMP 1873 883 3.0 4.6 6.5 1.0 145.1 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.2 Mid ch. EUT neider. IMP 1873 893 3.0 4.6 6.5 1.0 145.1 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.2 Mid ch. EUT neider. IMP 1873 893 3.0 4.6 6.5 1.0 145.1 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.2 Mid ch. EUT neider. IMP 1873 993 98.4 14.2 1.0 315.0 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.2 Mid ch. EUT neider. IMP 1873 993 98.4 14.2 1.0 315.0 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.4 Mid ch. EUT neider. IMP 1873 993 98.4 14.2 1.0 315.0 3.0 0.0 Vert AV 0.0 42.8 54.0 -11.4 Mid ch. EUT neider. IMP 1873 993 993 993 993 993 993 993 993 993 9	
4875017 36.6 6.5 1.7 166.0 3.0 0.0 Horz AV 0.0 43.1 54.0 -10.9 Mid ch. EUT norz. MCS18.4 469 -1.9 3.5 27.0 3.0 2.00 Horz PK 0.0 63.0 54.0 -1.10 Mid ch. EUT norz. MCS18.4 4673883 36.5 6.5 2.6 16.1 3.0 0.0 Horz AV 0.0 42.0 54.0 -1.11 Mid ch. EUT norz. MCS18.4 14.2 10 31.0 3.0 0.0 Horz AV 0.0 42.6 54.0 -1.11 Mid ch. EUT norz. MCS18.4 14.2 10 31.0 3.0 0.0 Horz AV 0.0 42.6 54.0 -1.11 Mid ch. EUT norz. MCS18.4 14.2 10 23.9 3.0 0.0 Vert AV 0.0 42.6 54.0 -1.11 Mid ch. EUT norz. MCS18.4 14.2 10 23.9 3.0 0.0 Horz AV 0.0 42.6 54.0 -1.14 Mid ch. EUT norz. MCS18.4 14.2 10 23.9 3.0 0.0 Horz AV 0.0 42.6 54.0 -1.14 Mid ch. EUT norz. MCS18.4 14.2 1.0 23.9 3.0 0.0 Horz AV 0.0 42.6 54.0 -1.14 Mid ch. EUT norz. MCS18.4 14.2 1.0 23.0 0.0 Horz AV 0.0 42.6 54.0 -1.14 Mid ch. EUT norz. MCS18.4 14.2 1.10 1.0 170.0 3.0 0.0 Horz AV 0.0 42.6 54.0 1.14 Mid ch. EUT norz. MCS18.4 14.2 1.10 1.0 170.0 3.0 0.0 Horz AV 0.0 42.6 54.0 1.11 Mid ch. EUT norz. MCS18.4 14.2 1.10 1.0 170.0 3.0 0.0 Horz AV 0.0 42.3 54.0 1.11 High ch. EUT norz. MCS18.4 14.2 1.10 1.10 High ch. EUT norz. MCS18.4 14.2 14.2 14.2 14.2 14.2 14.2 14.2 14	
4873883   36.5   6.5   2.6   16.1   3.0   0.0   Horz   AV   0.0   43.0   54.0   -11.0   Mid-ch, EUT-vert, 1Mps   4873883   36.4   6.5   1.0   13.0   3.0   0.0   Vort   AV   0.0   42.8   54.0   -11.2   Mid-ch, EUT-vert, 1Mps   4873883   36.3   6.5   1.0   13.0   3.0   0.0   Vort   AV   0.0   42.8   54.0   -11.2   Mid-ch, EUT-vert, 1Mps   4873883   36.3   6.5   1.7   165.0   3.0   0.0   Vort   AV   0.0   42.8   54.0   -11.2   Mid-ch, EUT-vert, 1Mps   4873883   42.1   1.0   3.0   3.0   0.0   Vort   AV   0.0   42.8   54.0   -11.7   Mid-ch, EUT-vert, 1Mps   4873883   42.1   1.0   176.0   3.0   0.0   Vort   AV   0.0   62.4   74.0   -11.8   Mid-ch, EUT-vert, 1Mps   4873883   42.1   1.0   176.0   3.0   0.0   Vort   AV   0.0   62.4   74.0   -11.8   Mid-ch, EUT-vert, Mps   4873833   42.1   1.0   176.0   3.0   0.0   Vort   AV   0.0   42.3   54.0   -11.7   High-ch, EUT-vert, 1Mps   4873833   42.1   1.0   144.0   3.0   0.0   Vort   AV   0.0   42.3   54.0   -11.7   High-ch, EUT-vert, 1Mps   4873833   43.0   -1.0   144.0   3.0   0.0   Vort   AV   0.0   42.3   54.0   -11.7   High-ch, EUT-vert, 1Mps   4873833   43.6   -1.9   1.0   153.0   3.0   0.0   Horz   AV   0.0   42.3   54.0   -11.7   High-ch, EUT-vert, 1Mps   4873833   43.6   -1.9   1.0   153.0   3.0   0.0   Horz   AV   0.0   44.8   54.0   -12.2   High-ch, EUT-vert, 1Mps   48738333   43.6   -1.9   1.0   153.0   3.0   0.0   Horz   AV   0.0   44.8   54.0   -12.2   High-ch, EUT-vert, 1Mps   4874833   487483	
#873850 36.3 6.5 1.0 15.5 1.0 15.5 3.0 0.0 Horz AV 0.0 42.9 54.0 11.1 Mide; EUT en side; filt with the filt of the	
4873895   36.3   5.5   1.0   145.1   3.0   0.0   Vert   AV   0.0   42.8   54.0   1.12   Mid ch. EUT vert. 1 Mips   7310802   28.4   14.2   1.0   255.9   3.0   0.0   Vert   AV   0.0   42.6   54.0   1.14   Mid ch. EUT vert. 1 Mips   7310802   28.4   14.2   1.0   255.9   3.0   0.0   Vert   AV   0.0   42.5   54.0   1.14   Mid ch. EUT vert. 1 Mips   7310802   28.4   14.2   1.0   255.9   3.0   0.0   Vert   AV   0.0   42.5   54.0   1.14   Mid ch. EUT vert. 1 Mips   73281817   72.8   14.5   1.0   14.0   14.0   3.0   0.0   Vert   AV   0.0   42.5   54.0   1.17   Migh ch. EUT vert. 1 Mips   73838679   35.7   8.5   1.0   14.0   3.0   0.0   Vert   AV   0.0   42.3   54.0   1.17   Migh ch. EUT vert. 1 Mips   73838679   35.7   8.5   1.0   135.0   3.0   0.0   Horz   AV   0.0   42.2   54.0   1.17   Migh ch. EUT vert. 1 Mips   73838679   35.2   6.5   1.0   135.0   3.0   0.0   Horz   AV   0.0   42.2   54.0   1.11   Migh ch. EUT vert. 1 Mips   73838679   35.2   6.5   1.0   135.0   3.0   0.0   Horz   AV   0.0   42.2   54.0   1.11   Migh ch. EUT vert. 1 Mips   73838679   35.2   6.5   1.0   135.0   3.0   0.0   Horz   AV   0.0   42.2   54.0   1.11   Migh ch. EUT vert. 1 Mips   73838679   35.2   6.5   1.0   135.0   3.0   0.0   Horz   AV   0.0   42.2   54.0   1.11   Migh ch. EUT vert. 1 Mips   73838679   35.2   6.5   1.3   15.1   3.0   0.0   Horz   AV   0.0   41.2   54.0   1.12   Migh ch. EUT vert. 1 Mips   43848689   43.0   -1.9   1.0   135.0   3.0   0.0   Vert   AV   0.0   41.2   54.0   1.12   Migh ch. EUT vert. 1 Mips   43848689   42.2   -1.9   1.0   30.1   30.2   20.0   Vert   AV   0.0   41.2   40.0   40.1	
Fig.	20MHz BW
4873858	
7383,688 27.8 14.5 1.0 144.1 3.0 0.0 Vert AV 0.0 42.3 54.0 -11.7 High ch. EUT not side, 1 M 14873975 35.7 6.5 1.0 135.0 3.0 0.0 Horz AV 0.0 42.3 54.0 -11.7 High ch. EUT not side, 1 M 14873975 35.7 6.5 1.0 135.0 3.0 0.0 Horz AV 0.0 42.2 54.0 -11.8 Midch. EUT horz, 1 Mpc 4924083 35.2 6.6 1.3 15.1 3.0 0.0 Horz AV 0.0 14.5 54.0 -12.2 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.7 74.0 -12.3 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.7 74.0 -12.3 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.7 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.7 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.0 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.0 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.0 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 61.0 74.0 -13.0 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.7 74.0 -13.1 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.8 74.0 -13.2 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.8 74.0 -13.2 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.8 74.0 -13.2 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.8 74.0 -13.2 High ch. EUT not side, 1 M 14874083 31.0 0.0 Vert PK 0.0 68.8 74.0 -13.2 Low ch. EUT vert. 1 Mips 23884287 42.6 -1.9 2.2 13.9 16.0 3.0 20.0 Horz PK 0.0 68.8 74.0 -13.2 Low ch. EUT vert. 1 Mips 2484367 42.6 -1.9 2.2 13.9 16.0 3.0 20.0 Horz PK 0.0 60.7 74.0 -13.3 High ch. EUT vert. 6 Mips 2484367 42.5 -1.9 2.6 3.8 16.9 3.0 20.0 Horz PK 0.0 60.7 74.0 -13.3 High ch. EUT vert. 6 Mips 2484367 42.5 -1.9 2.6 386.9 3.0 20.0 Horz PK 0.0 60.7 74.0 -13.3 High ch. EUT vert. 6 Mips 24843687 42.5 -1.9 2.6 386.9 3.0 20.0 Horz PK 0.0 60.5 74.0 -13.3 High ch. EUT not side, MC 24843682 42.3 -1.9 1.0 2.0 2.0 18.0 2.0 Horz PK 0.0 60.5 74.0 -13.3 High ch. EUT not side, MC 24843682 42.3 -1.9 2.6 13.0 3.0 2.0 Horz PK 0.0 60.5 74.0 -13.5 High ch. EUT not side, MC 24843689 42.3 -1	
7383.6588         27.8         14.5         1.0         144.0         3.0         0.0         Horz         AV         0.0         42.2         54.0         -11.7         High ch, EUT on side, Mode and State	
4873975 35.7 6.5 1.0 135.0 3.0 0.0 Horz AV 0.0 42.2 54.0 -11.8 Midch EUThor 1, 1Mpc 4924.083 35.2 6.6 1.3 15.1 3.0 0.0 Horz AV 0.0 61.7 74.0 -12.3 High ch. EUTh on side, M 14.8 54.0 -12.2 High ch. EUTh on side, M 14.8 54.0 -12.4 High ch. EUTh on side, M 14.8 High ch. EUTh on side, M 14.8 High ch. EUTh on side, M 14.8 High	
2483 633	
4874.008 35.1 6.5 1.7 315.9 3.0 0.0 Vert AV 0.0 41.6 54.0 -12.4 Mid., EUT-on side, 1 M 624.033 35.0 6.4 2.1 42.0 3.0 0.0 Horz AV 0.0 41.6 54.0 -12.6 Low, the LUT on side, 1 M 624.033 35.0 6.4 2.1 9 1.4 196.1 3.0 20.0 Vert PK 0.0 61.0 74.0 -13.0 High ch, EUT on side, 5 M 42.8 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.9 74.0 -13.1 High ch, EUT on side, 5 M 42.8 42.8 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.9 74.0 -13.1 Low, th, EUT bert, 1 Mipp 4.2 42.1 1.0 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 -13.1 Low, th, EUT bert, 1 Mipp 4.2 42.1 1.0 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 -13.2 Low, th, EUT bert, 1 Mipp 4.2 42.1 1.0 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 -13.2 Low, th, EUT bert, 1 Mipp 4.2 42.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	
48240.03 35.0 6.4 2.1 42.0 3.0 0.0 Horz AV 0.0 41.4 54.0 1.2.6 Low ch. EUT on side, 1 M 2486.860 42.9 1.9 1.0 301.9 30.9 20.0 Vert PK 0.0 60.9 74.0 1.3.1 High ch. EUT on side, 1 M 2486.860 42.8 1.9 1.4 196.1 3.0 0.0 Vert AV 0.0 40.9 54.0 1.3.1 Low ch. EUT on side, 1 M 2486.813 42.7 1.9 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 1.3.1 Low ch. EUT on side, 1 M 2486.813 42.7 1.9 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 1.3.2 Low ch. EUT on side, 1 M 2486.826 42.8 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.8 74.0 1.3.2 Low ch. EUT on side, 1 M 2486.826 42.6 1.9 2.2 139.0 3.0 20.0 Horz PK 0.0 60.7 74.0 1.3.3 High ch. EUT horz, MCS? 2483.608 42.6 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.7 74.0 1.3.3 High ch. EUT horz, EMS? 2483.608 42.5 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1.3.4 High ch. EUT horz, EMS? 2485.568 42.5 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1.3.4 High ch. EUT horz, EMS? 2485.568 42.5 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1.3.4 High ch. EUT horz, EMS? 2485.568 42.5 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1.3.4 High ch. EUT horz, EMS? 2485.568 42.5 1.9 1.9 2.9 193.0 3.0 20.0 Horz PK 0.0 60.6 74.0 1.3.4 High ch. EUT horz, EMS? 2486.568 42.4 1.9 1.0 203.1 3.0 0.0 Vert PK 0.0 60.6 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 2.3 195.1 3.0 20.0 Vert PK 0.0 60.6 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 2.3 195.1 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 2.3 195.1 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 1.0 250.9 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 42.4 1.9 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 52.0 1.9 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.5 High ch. EUT horz, EMS? 2484.868 52.0 1.9 1.0 272.9 3.0 20.0 Vert PK 0.0 60.5 74.0 1.3.8 High ch. EUT horz, EMS? 2484.868 52.0 1.9 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	
2488.89         428         -1,9         1.4         196.1         3.0         20.0         Horz         PK         0.0         60.9         74.0         -13.1         High ch, EUThorz, 1 Mbg         2486.183         42.7         -1,9         1.0         66.1         3.0         20.0         Horz         PK         0.0         60.8         74.0         -13.2         High ch, EUThorz, MCS1           2484.267         42.6         -1.9         1.2         193.0         3.0         20.0         Horz         PK         0.0         60.8         74.0         -13.2         High ch, EUThorz, MCS1           2483.608         42.6         -1.9         1.4         196.1         3.0         20.0         Horz         PK         0.0         60.7         74.0         -13.3         High ch, EUThorz, 26 Mb           2485.558         42.5         -1.9         1.4         198.1         3.0         20.0         Horz         PK         0.0         60.6         74.0         -13.4         High ch, EUThorz, 36 Mb           2485.558         42.5         -1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9         1.9	bps, 20MHz BW
4824.000 34.5 6.4 2.0 142.1 3.0 0.0 Vert AV 0.0 40.9 \$4.0 -13.1 Low ch, EUT vert. 1 Mips 2488.183 42.7 -1.9 1.0 66.1 3.0 20.0 Horz PK 0.0 60.8 74.0 -13.2 Low ch, EUT horz, MCS7 2887.500 43.0 -2.2 139.0 3.0 20.0 Horz PK 0.0 60.8 74.0 -13.2 Low ch, EUT horz, MCS7 2887.500 42.6 -1.9 2.2 139.0 3.0 20.0 Horz PK 0.0 60.7 74.0 -13.3 High ch, EUT horz, MCS7 4848.267 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 -13.3 High ch, EUT horz, 1 MCS7 485.558 42.5 -1.9 2.6 348.9 3.0 20.0 Horz PK 0.0 60.6 74.0 -13.3 High ch, EUT horz, 3 MCM 2485.558 42.5 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 -13.4 High ch, EUT horz, 3 MCM 2485.558 42.5 -1.9 2.9 193.0 3.0 20.0 Horz PK 0.0 60.6 74.0 -13.4 High ch, EUT horz, 1 MCS8 492.992 33.9 6.6 1.0 203.1 3.0 0.0 Vert PK 0.0 60.6 74.0 -13.5 High ch, EUT horz, 1 MCS8 492.992 33.9 6.6 1.0 203.1 3.0 0.0 Vert PK 0.0 60.6 74.0 -13.5 High ch, EUT horz, 1 MCS8 492.992 34.4 4.4 -1.9 1.0 250.9 3.0 20.0 Horz PK 0.0 60.5 74.0 -13.5 High ch, EUT horz, 1 MCS8 493.8 42.4 -1.9 1.0 250.9 3.0 20.0 Horz PK 0.0 60.5 74.0 -13.5 High ch, EUT horz, 1 MCS8 4948.688 42.4 -1.9 1.0 272.9 30 20.0 Vert PK 0.0 60.5 74.0 -13.5 High ch, EUT horz, MCS8 2486.488 42.1 -1.9 1.0 272.9 30 20.0 Vert PK 0.0 60.5 74.0 -13.5 High ch, EUT horz, MCS8 2486.488 42.1 -1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.0 33.5 6.5 1.3 205.0 3.0 0.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.5 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.5 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS8 493.9 3.0 2.0 0 Ve	
2887.500	
2484.267 42.6 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.7 74.0 1-13.3 High ch, EUT vert, 6 Mbp 2485.808 42.5 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1-13.4 High ch, EUT on side, Mb 2485.525 42.5 -1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1-13.4 High ch, EUT on side, Mb 2485.527 42.5 1.9 1.9 1.4 196.1 3.0 20.0 Horz PK 0.0 60.6 74.0 1-13.4 High ch, EUT on side, Mb 2485.527 42.5 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.6 74.0 1-13.4 High ch, EUT or side, Mb 2485.538 42.5 1.9 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.6 74.0 1-13.4 High ch, EUT vert, MCSB 4923.992 33.9 6.6 1.0 23.1 3.0 0.0 Vert PK 0.0 60.6 74.0 1-13.5 High ch, EUT vert, MCSB 2486.458 42.4 1.9 1.0 250.9 3.0 20.0 Horz PK 0.0 60.5 74.0 1-13.5 High ch, EUT vert, 6 Mbp 2484.682 42.3 1.9 1.0 272.9 3.0 20.0 Vert PK 0.0 60.5 74.0 1-13.5 High ch, EUT vert, 6 Mbp 2484.682 42.3 1.9 1.0 272.9 3.0 20.0 Vert PK 0.0 60.5 74.0 1-13.5 High ch, EUT vert, 6 Mbp 2484.682 42.1 1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.4 74.0 1-13.6 High ch, EUT or side, 8 Mb 2486.475 42.1 1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.2 74.0 1-13.8 High ch, EUT norz, 6 Mbp 2484.177 42.1 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.2 74.0 1-13.8 High ch, EUT norz, 6 Mbp 2484.177 42.1 1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.2 74.0 1-13.8 High ch, EUT norz, 6 Mbp 2484.177 42.1 1.9 2.9 193.0 3.0 20.0 Horz PK 0.0 60.2 74.0 1-13.8 High ch, EUT norz, MCSB 2887000 42.0 1.2 1.0 161.0 3.0 20.0 Horz PK 0.0 60.2 74.0 1-13.8 High ch, EUT norz, MCSB 2887000 42.0 1.2 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 1-14.2 Low ch, EUT horz, MCSB 473.9052 32.9 6.5 1.0 15.0 15.0 15.0 15.0 15.0 15.0 15.	, 20MHz BW
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492493992 33.9 6.6 1.0 203.1 3.0 0.0 Vert AV 0.0 40.5 54.0 -13.5 High ch, EUT vert, 1 Mips 2484.858 42.4 -1.9 1.0 250.9 3.0 20.0 Vert PK 0.0 60.5 74.0 -13.5 High ch, EUT or side, 6 N 2484.858 42.4 -1.9 1.0 272.9 3.0 20.0 Vert PK 0.0 60.5 74.0 -13.5 High ch, EUT vert, 6 Mbp 2484.692 42.3 -1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT vert, 6 Mbp 2484.117 42.1 -1.9 2.9 193.0 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT vert, 6 Mbp 2484.117 42.1 -1.9 2.9 193.0 3.0 20.0 Horz PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCSB 2387.000 42.0 -2.2 1.0 161.0 3.0 20.0 Horz PK 0.0 40.0 54.0 -14.0 Mid ch, EUT horz, MCSB 2387.000 42.0 -2.2 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.4 Low ch, EUT horz, MCSB 4873.939 32.9 6.5 1.0 13.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.4 Low ch, EUT horz, 6 Mbp 4873.995 52.4 6.5 1.7 165.0 3.0 0.0 Horz PK 0.0 59.8 74.0 -14.4 Mid ch, EUT no side, 1 N 4873.957 52.4 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.5 Mid ch, EUT ror, 2 MSB 4874.033 31.9 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.5 Mid ch, EUT ror, 2 MCSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.4 54.0 -15.6 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.4 54.0 -15.6 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.5 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.5 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.0 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9 6.5 1.0 113.0 3.0 0.0 Horz PK 0.0 38.3 54.0 -17.7 Mid ch, EUT ror, 1 MSB 4874.033 31.9	
2484,858         42.4         -1.9         2.3         195.1         3.0         20.0         Vert         PK         0.0         60.5         74.0         -13.5         High ch, EUT wort, 6Mpp           2486,458         42.1         -1.9         1.0         48.1         3.0         20.0         Vert         PK         0.0         60.2         74.0         -13.8         High ch, EUT horz, MCS1           4843,177         42.1         -1.9         2.9         193.0         3.0         20.0         Horz         PK         0.0         60.2         74.0         -13.8         High ch, EUT horz, MCS1           4873,175         33.5         6.5         1.3         205.0         3.0         0.0         Vert         AV         0.0         60.2         74.0         -13.8         High ch, EUT horz, MCS1           2387,000         42.0         -2.2         1.0         161.0         3.0         20.0         Horz         PK         0.0         59.8         74.0         -14.2         Low ch, EUT horz, IMDP           4873,992         32.9         6.5         1.0         13.0         3.0         0.0         Horz         AV         0.0         39.4         54.0         -14.6         Midch, E	
2484.692 42.3 -1.9 1.0 272.9 3.0 20.0 Vert PK 0.0 60.4 74.0 -13.6 High ch, EUT horz, MCSB 2486.458 42.1 -1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, GNSB 2484.117 42.1 -1.9 2.9 193.0 3.0 20.0 Horz PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCSB 4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 40.0 54.0 -14.0 Mid ch, EUT horz, MCSB 4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 40.0 54.0 -14.2 Low ch, EUT horz, MCSB 4873.975 22.9 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.2 Low ch, EUT horz, MCSB 4873.992 32.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 59.6 74.0 -14.4 Low ch, EUT horz, GNSB 4873.993 32.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 59.8 74.0 -14.6 Mid ch, EUT horz, GNSB 4873.995 32.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -14.6 Mid ch, EUT horz, GNSB 4873.956 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.5 Mid ch, EUT horz, MCSB 4873.958 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT horz, MCSB 4873.958 32.9 6.5 1.0 13.1 3.0 0.0 Vert AV 0.0 38.4 54.0 -15.6 Mid ch, EUT horz, MCSB 4873.950 30.0 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 38.4 54.0 -15.6 Mid ch, EUT nor side, MCS 4873.853 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.5 Mid ch, EUT nor side, MCS 4873.853 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT nor side, MCS 4873.853 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT nor side, MCS 4873.853 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4873.853 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4874.873 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4874.933 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4874.933 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4874.933 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT nor side, MCS 4874.933 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT nor side, MCS 4874.939 29.7 6.5 1.0	
2486.458 42.1 -1.9 1.0 48.1 3.0 20.0 Vert PK 0.0 60.2 74.0 -13.8 High ch, EUT horz, 6 Mbg 4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 60.2 74.0 -13.8 High ch, EUT horz, MCS1 4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 40.0 54.0 -14.0 Mid ch, EUT horz, MCS1 4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 59.8 74.0 -14.2 Low ch, EUT horz, 1 Mbg 4873.092 32.9 6.5 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.4 Low ch, EUT horz, 6 Mbg 4873.992 32.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 39.4 54.0 -14.4 Mid ch, EUT or side, 11.4 4873.995 52.4 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.1 Mid ch, EUT or side, 11.4 4873.998 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT or side, 11.4 4873.998 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT or side, 11.4 4873.998 52.0 6.5 1.0 13.1 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT or side, 11.4 4873.939 30.0 6.5 1.0 13.1 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT or side, 11.4 4873.939 30.0 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 38.4 54.0 -15.6 Mid ch, EUT or side, MCS 4873.933 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 38.4 54.0 -17.5 Mid ch, EUT or side, MCS 4873.933 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT or side, MCS 4873.833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT or side, MCS 4873.833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT or side, MCS 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT or side, MCS 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT or side, 58 Mid 4874.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT or side, 58 Mid 4874.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT or side, 58 Mid 5474.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT or side, 58 Mid 5474.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT or side, 58 Mid 5474.442 29.9 56 6.5 1.0 13.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT or side, 58	
4873.075 33.5 6.5 1.3 205.0 3.0 0.0 Vert AV 0.0 40.0 54.0 -14.0 Mid ch, EUT horz, MCS8, 2387.000 42.0 -2.2 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.2 Low ch, EUT horz, 1 Mbp. 4873.992 32.9 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 39.4 54.0 -14.6 Mid ch, EUT on side, 11 M 4873.575 52.4 6.5 1.7 165.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.5 Mid ch, EUT vert, MCS8, 4873.958 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT vert, MCS8, 4874.033 31.9 6.5 1.0 113.1 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT vert, MCS8, 4873.833 29.8 6.5 1.0 113.1 3.0 0.0 Vert AV 0.0 38.4 54.0 -15.6 Mid ch, EUT on side, MC 4873.833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.5 54.0 -17.5 Mid ch, EUT on side, MC 4873.833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.5 54.0 -17.7 Mid ch, EUT on side, MC 4873.833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MC 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MC 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, MC 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, MC 4874.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 30.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 30.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 30.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, 6 Mid 4874.442 29.6 6.5 1.0 13.0 30.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, 1 Mid	s, 20MHz BW
2387 000 4 2.0 -2.2 1.0 161.0 3.0 20.0 Horz PK 0.0 59.8 74.0 -14.2 Low ch, EUT horz, 1 Mbp. 24873 992 32.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 59.6 74.0 -14.4 Low ch, EUT horz, 6 Mbp. 4873.952 52.4 6.5 1.7 165.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.1 Mid ch, EUT on side, 11 May 14873.958 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.9 74.0 -15.5 Mid ch, EUT horz, MCS1.6 Mbp. 4873.958 52.0 6.5 1.0 211.0 3.0 0.0 Horz PK 0.0 58.5 74.0 -15.5 Mid ch, EUT horz, MCS1.6 Mbp. 4873.903 31.9 6.5 1.0 113.1 3.0 0.0 Vert AV 0.0 38.4 54.0 -15.6 Mid ch, EUT horz, I Mbp. 4873.900 30.0 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 38.5 54.0 -17.5 Mid ch, EUT on side, MCS 4873.930 30.0 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.5 54.0 -17.7 Mid ch, EUT on side, MCS 4873.500 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MCS 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MCS 4874.875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 54 May 1491.5 30 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 Mt 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.1 54.0 -18.9 Low ch, EUT on side, 1 Mt 14471.50 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 36.1 54.0 -18.9 Low ch, EUT on side, 1 Mt 14471.50 29.9 5.2 1.0 15.1 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 Mt 14471.50 29.9 5.2 1.0 15.1 3.0 0.0 Horz PK 0.0 53.8 74.0 -19.7 High ch,	
4873,992         32,9         6.5         1.0         13.0         3.0         0.0         Horz         AV         0.0         39.4         54.0         -14.6         Mid ch, EUT on side, 11 h. 4873,575         52.4         6.5         1.7         165.0         3.0         0.0         Horz         PK         0.0         58.9         74.0         -15.5         Mid ch, EUT or Side, MCS (A, EV)         Mid ch, EUT or Side, MCS (A, EV)         4874,033         31.9         6.5         1.0         113.1         3.0         0.0         Vert         AV         0.0         38.4         54.0         -15.6         Mid ch, EUT or Side, MCS (A, EV)         Mid ch, EUT or Side, MCS (A, EV)         4873,900         30.0         6.5         1.0         113.0         3.0         0.0         Horz         AV         0.0         36.5         54.0         -17.5         Mid ch, EUT or Side, MCS (A, EV)         4873,803         29.8         6.5         1.0         11.1         3.0         0.0         Horz         AV         0.0         36.3         54.0         -17.7         Mid ch, EUT or Side, MCS (A, EV)         4874,875         29.7         6.5         1.0         11.1         3.0         0.0         Horz         AV         0.0         36.2         54.0         -17.8	
4873.575         52.4         6.5         1.7         165.0         3.0         0.0         Horz         PK         0.0         58.9         74.0         -15.1         Mid ch, EUT horz, MCS8, MId ch, EUT wert, MCS8, 4874.033         31.9         6.5         1.0         211.0         3.0         0.0         Horz         PK         0.0         58.5         74.0         -15.5         Mid ch, EUT horz, MCS8, MId ch, EUT on side, MCS with mid ch, EUT on with with mid ch, EUT on side, MCS with mid ch, EUT on with with mid ch, EUT on with mid ch, EUT on with with mid ch	
4873,958         52.0         6.5         1.0         211.0         3.0         0.0         Horz         PK         0.0         58.5         74.0         -15.5         Mid ch, EUT vert, MCS8, 4874,033         31.9         6.5         1.0         113.1         3.0         0.0         Vert         AV         0.0         38.4         54.0         -15.6         Mid ch, EUT on side, MCS did, ch, EUT on side, did, ch, E	
4873,900 30.0 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.5 54.0 -17.5 Mid ch, EUT on side, MCS 4873,833 29.8 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MCS 4873,833 29.8 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MCS 4874,875 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, MCS 4872,933 29.7 6.5 1.9 147.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 54 M 4872,933 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 54 M 4874,442 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 54 M 4874,1910 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, MCS 14471,910 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 35.1 54.0 -18.9 Low ch, EUT wit, 1 Mbps 7386,500 39.8 14.5 1.0 144.0 3.0 0.0 Horz AV 0.0 35.1 54.0 -19.7 High ch, EUT on side, 1 M 7309,442 40.1 14.2 1.0 235.9 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 M 7309,442 40.1 14.2 1.0 235.9 3.0 0.0 Horz PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 M 7309,500 39.6 14.2 1.0 315.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT wit, 1 Mbps 7309,500 39.6 14.2 1.0 315.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT wit, 1 Mbps 4874,500 47.2 6.5 1.0 13.0 30.0 0.0 Vert PK 0.0 51.3 74.0 -20.3 Mid ch, EUT on side, 1 M 4873,882 44.2 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.3 Mid ch, EUT wit, 1 Mbps 4874,025 44.8 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.3 Mid ch, EUT wit, 1 Mbps 4874,025 44.8 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.3 Mid ch, EUT wit, 1 Mbps 4874,025 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT wit, 1 Mbps 4874,025 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT wit, 1 Mbps 4874,025 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT wit, 1 Mbps 4874,025 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT wit, 1 Mbps 4874,025 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -24.0 Mid ch, EUT wit, 1 Mbps 4874,000 43	
4873,833         29.8         6.5         1.0         13.0         3.0         0.0         Horz         AV         0.0         36.3         54.0         -17.7         Mid ch, EUT on side, MCS         4873,500         29.8         6.5         1.0         11.1         3.0         0.0         Horz         AV         0.0         36.3         54.0         -17.7         Mid ch, EUT on side, MCS         4872,933         29.7         6.5         1.0         13.0         3.0         0.0         Horz         AV         0.0         36.2         54.0         -17.8         Mid ch, EUT on side, 36 N         4872,933         29.7         6.5         1.0         13.0         3.0         0.0         Horz         AV         0.0         36.2         54.0         -17.8         Mid ch, EUT on side, 36 N         4874,442         29.6         6.5         1.0         113.0         3.0         0.0         Horz         AV         0.0         36.2         54.0         -17.8         Mid ch, EUT on side, 54 N         4874,442         29.6         6.5         1.0         11.1         3.0         0.0         Horz         AV         0.0         36.1         54.0         -17.9         Mid ch, EUT on side, 10 N         4471,910         29.9         5.2	
4873.500 29.8 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.3 54.0 -17.7 Mid ch, EUT on side, MC 4874.875 29.7 6.5 1.9 147.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 36 N 4872.933 29.7 6.5 1.9 147.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 MI 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 MI 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6 MI 4871.583 29.7 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, 5 MI 1471.910 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 35.1 54.0 -18.9 Low ch, EUT on side, 1 MI 14473.280 29.2 5.1 1.0 303.0 3.0 0.0 Vert AV 0.0 34.3 54.0 -19.7 Low ch, EUT on side, 1 MI 14473.280 29.2 5.1 1.0 303.0 3.0 0.0 Vert AV 0.0 34.3 54.0 -19.7 Low ch, EUT on side, 1 MI 14473.280 39.3 14.5 1.0 144.0 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 MI 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 Mid ch, EUT on side, 1 MI 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 MI 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 MI 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 MI 7386.433 49.3 43.9 43.2 6.5 1.0 17.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 MI 7386.433 49.3 43.9 44.2 6.5 1.0 17.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 MI 4874.058 43.9 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.3 Mid ch, EUT for side, 1 MI 4874.058 43.9 6.5 1.0 145.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT on side, 1 MI 4874.058 43.9 6.5 1.0 145.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT on side, 1 MI 4874.050 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT on side, 1 MI 4874.050 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT on side, 1 MI 4874.050 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT on side, 1 MI 4874.050 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0	
4872.933 29.7 6.5 1.9 147.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 6.M 4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 54.0 474.442 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, MCR 14471.910 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 35.1 54.0 -18.9 Low ch, EUT on side, MCR 14473.280 29.2 5.1 1.0 30.3 0.0 Vert AV 0.0 35.1 54.0 -19.7 Low ch, EUT on side, 1 M 14473.280 29.2 5.1 1.0 144.0 3.0 0.0 Vert AV 0.0 34.3 54.0 -19.7 Low ch, EUT on side, 1 M 7309.442 40.1 14.2 1.0 25.9 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 M 7309.442 40.1 14.2 1.0 25.9 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 Mid ch, EUT on side, 1 M 147.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 M 147.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT or side, 1 M 147.0 High ch, EUT on side, 1 M 147.0	60, 40MHz BW
4871.583 29.7 6.5 1.0 13.0 3.0 0.0 Horz AV 0.0 36.2 54.0 -17.8 Mid ch, EUT on side, 5A 14474.42 29.6 6.5 1.0 11.1 3.0 0.0 Horz AV 0.0 36.1 54.0 -17.9 Mid ch, EUT on side, MC 14474.910 29.9 5.2 1.0 15.1 3.0 0.0 Horz AV 0.0 35.1 54.0 -18.9 Low ch, EUT on side, 1 M 14473.280 29.2 5.1 1.0 303.0 3.0 0.0 Vert AV 0.0 34.3 54.0 -19.7 Low ch, EUT on side, 1 M 7386.500 39.8 14.5 1.0 303.0 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 M 7396.432 39.3 14.5 1.0 255.9 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 Mid ch, EUT on side, 1 M 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT on side, 1 M 7396.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT or side, 1 M 8474.500 47.2 6.5 1.3 205.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT or side, 1 M 8474.025 44.8 6.5 1.0 17.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.3 Mid ch, EUT wert, 1 Mbps 4874.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -20.3 Mid ch, EUT or side, 1 M 8474.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -20.3 Mid ch, EUT or side, 1 M 8474.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -22.3 Mid ch, EUT or side, 1 M 8474.025 43.9 6.5 1.0 145.1 3.0 0.0 Vert PK 0.0 50.7 74.0 -23.6 Mid ch, EUT or side, 1 M 8474.025 43.9 6.5 1.0 145.1 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.6 Mid ch, EUT or side, 1 M 9484.7 40.0 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT vert, 1 Mbps 4924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT or side, 1 M 1449.4 40.4 40.4 40.4 40.4 40.4 40.4 40.4	
14471.910         29.9         5.2         1.0         15.1         3.0         0.0         Horz         AV         0.0         35.1         54.0         -18.9         Low ch, EUT on side, 1 M           14473.280         29.2         5.1         1.0         303.0         3.0         0.0         Vert         AV         0.0         34.3         54.0         -19.7         Low ch, EUT on side, 1 M           7386.500         39.8         14.5         1.0         144.0         3.0         0.0         Horz         PK         0.0         54.3         74.0         -19.7         High ch, EUT on side, 1 M           7386.433         39.3         14.5         1.0         149.1         3.0         0.0         Vert         PK         0.0         54.3         74.0         -19.7         Mid ch, EUT on side, 1 M           7386.433         39.3         14.5         1.0         149.1         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         High ch, EUT on side, 1 M           7399.500         39.6         14.2         1.0         315.0         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         M	
14473.280         29.2         5.1         1.0         303.0         3.0         0.0         Vert         AV         0.0         34.3         54.0         -19.7         Low ch, EUT vert, 1 Mbps           7386.500         39.8         14.5         1.0         144.0         3.0         0.0         Horz         PK         0.0         54.3         74.0         -19.7         High ch, EUT on side, 1 M           7396.442         40.1         14.2         1.0         235.9         3.0         0.0         Vert         PK         0.0         54.3         74.0         -19.7         High ch, EUT on side, 1 M           7386.433         39.3         14.5         1.0         149.1         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         High ch, EUT vert, 1 Mbps           7399.500         39.6         14.2         1.0         315.0         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         High ch, EUT vert, 1 Mbps           4874.500         47.2         6.5         1.3         205.0         3.0         0.0         Vert         PK         0.0         53.7         74.0         -20.2 <td< td=""><td></td></td<>	
7386.500 39.8 14.5 1.0 144.0 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 High ch, EUT on side, 1 M 7309.442 40.1 14.2 1.0 235.9 3.0 0.0 Horz PK 0.0 54.3 74.0 -19.7 Mid ch, EUT on side, 1 M 7386.433 39.3 14.5 1.0 149.1 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 High ch, EUT vert, 1 Mbps 7309.500 39.6 14.2 1.0 315.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 Mid ch, EUT vert, 1 Mbps 4874.500 47.2 6.5 1.3 205.0 3.0 0.0 Vert PK 0.0 53.7 74.0 -20.3 Mid ch, EUT vert, 1 Mbps 4874.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -22.7 Mid ch, EUT vert, 1 Mbps 64874.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -22.3 Mid ch, EUT on side, 1 M 4873.892 44.2 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 50.7 74.0 -23.3 Mid ch, EUT on side, 1 M 4874.058 43.9 6.5 1.0 145.1 3.0 0.0 Vert PK 0.0 50.7 74.0 -23.6 Mid ch, EUT on side, 1 M 4874.275 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.0 74.0 -24.0 Mid ch, EUT vert, 1 Mbps 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.000 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.00 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.00 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M 64924.00 43.2 6.6 1.3 15.1 5.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT	
7386.433         39.3         14.5         1.0         149.1         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         High ch, EUT vert, 1 Mbps           7399.500         39.6         14.2         1.0         315.0         3.0         0.0         Vert         PK         0.0         53.8         74.0         -20.2         Mid ch, EUT vert, 1 Mbps           4874.500         47.2         6.5         1.3         205.0         3.0         0.0         Vert         PK         0.0         53.7         74.0         -20.2         Mid ch, EUT vert, 1 Mbps           4874.025         44.8         6.5         1.0         17.0         3.0         0.0         Horz         PK         0.0         51.3         74.0         -22.7         Mid ch, EUT on side, 1 MI           4873.892         44.2         6.5         1.0         13.0         3.0         0.0         Horz         PK         0.0         50.7         74.0         -23.3         Mid ch, EUT on side, 1 MI           4874.058         43.9         6.5         1.0         145.1         3.0         0.0         Vert         PK         0.0         50.4         74.0         -23.3         Mid c	lbps, 20MHz BW
7309.500 39.6 14.2 1.0 315.0 3.0 0.0 Vert PK 0.0 53.8 74.0 -20.2 Mid ch, EUT vert, 1 Mbps 4874.500 47.2 6.5 1.3 205.0 3.0 0.0 Vert PK 0.0 53.7 74.0 -20.3 Mid ch, EUT vert, 1 Mbps 4874.025 44.8 6.5 1.0 17.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -22.7 Mid ch, EUT or side, 1 Mt 4873.892 44.2 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 51.3 74.0 -22.7 Mid ch, EUT or side, 1 Mt 4874.058 43.9 6.5 1.0 145.1 3.0 0.0 Vert PK 0.0 50.7 74.0 -23.3 Mid ch, EUT or side, 1 Mt 4874.275 43.5 6.5 2.6 16.1 3.0 0.0 Horz PK 0.0 50.4 74.0 -23.6 Mid ch, EUT vert, 1 Mbps 4924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT or side, 1 Mt	
4874.025     44.8     6.5     1.0     17.0     3.0     0.0     Horz     PK     0.0     51.3     74.0     -22.7     Mid ch, EUT on side, 1 Mt       4873.892     44.2     6.5     1.0     13.0     3.0     0.0     Horz     PK     0.0     50.7     74.0     -23.3     Mid ch, EUT on side, 1 Mt       4874.058     43.9     6.5     1.0     145.1     3.0     0.0     Vert     PK     0.0     50.4     74.0     -23.6     Mid ch, EUT vert, 1 Mbps       4874.275     43.5     6.5     2.6     16.1     3.0     0.0     Horz     PK     0.0     50.0     74.0     -24.0     Mid ch, EUT vert, 1 Mbps       4924.000     43.2     6.6     1.3     15.1     3.0     0.0     Horz     PK     0.0     49.8     74.0     -24.2     High ch, EUT on side, 1 Mt	
4873.892     44.2     6.5     1.0     13.0     3.0     0.0     Horz     PK     0.0     50.7     74.0     -23.3     Mid ch, EUT on side, 1 Mt       4874.058     43.9     6.5     1.0     145.1     3.0     0.0     Vert     PK     0.0     50.4     74.0     -23.6     Mid ch, EUT on side, 1 Mt       4874.275     43.5     6.5     2.6     16.1     3.0     0.0     Horz     PK     0.0     50.0     74.0     -24.0     Mid ch, EUT on side, 1 Mt       4924.000     43.2     6.6     1.3     15.1     3.0     0.0     Horz     PK     0.0     49.8     74.0     -24.2     High ch, EUT on side, 1 Mt	
4874.058     43.9     6.5     1.0     145.1     3.0     0.0     Vert     PK     0.0     50.4     74.0     -23.6     Mid ch, EUT vert, 1 Mbps       4874.275     43.5     6.5     2.6     16.1     3.0     0.0     Horz     PK     0.0     50.0     74.0     -24.0     Mid ch, EUT vert, 1 Mbps       4924.000     43.2     6.6     1.3     15.1     3.0     0.0     Horz     PK     0.0     49.8     74.0     -24.2     High ch, EUT on side, 1 M	
4924.000 43.2 6.6 1.3 15.1 3.0 0.0 Horz PK 0.0 49.8 74.0 -24.2 High ch, EUT on side, 1 M	, 20MHz BW
4874.283 43.1 6.5 1.0 135.0 3.0 0.0 Horz PK 0.0 49.6 74.0 -24.4 Mid ch, EUT horz, 1 Mbps	
4873.975 43.1 6.5 1.7 315.9 3.0 0.0 Vert PK 0.0 49.6 74.0 -24.4 Mid ch, EUT on side, 1 Mi	
4873.817 43.0 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 49.5 74.0 -24.5 Mid ch, EUT on side, 11 M 4924.033 42.6 6.6 1.0 203.1 3.0 0.0 Vert PK 0.0 49.2 74.0 -24.8 High ch, EUT vert, 1 Mbp:	
4823,708 42.7 6.4 2.1 42.0 3.0 0.0 Horz PK 0.0 49.1 74.0 -24.9 Low ch, EUT on side, 1 M	
12309.190 31.2 -2.2 1.0 293.9 3.0 0.0 Vert AV 0.0 29.0 54.0 -25.0 High ch, EUT vert, 1 Mbp:	
12187.370 31.6 -2.7 1.0 172.0 3.0 0.0 Vert AV 0.0 28.9 54.0 -25.1 Mid ch, EUT vert, 1 Mbps 12310.600 31.0 -2.2 1.0 183.0 3.0 0.0 Horz AV 0.0 28.8 54.0 -25.2 High ch, EUT on side, 1 M	
4824.275 42.2 6.4 2.0 142.1 3.0 0.0 Vert PK 0.0 48.6 74.0 -25.4 Low ch, EUT vert, 1 Mbps	
12187.240 31.3 -2.7 1.0 301.9 3.0 0.0 Horz AV 0.0 28.6 54.0 -25.4 Mid ch, EUT on side, 1 MI	
4876.050 41.8 6.5 1.0 113.1 3.0 0.0 Vert PK 0.0 48.3 74.0 -25.7 Mid ch, EUT horz, 1 Mbps 4873.008 41.8 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 48.3 74.0 -25.7 Mid ch, EUT on side, 54 N	
12059.100 31.4 -3.2 1.0 191.1 3.0 0.0 Vert AV 0.0 28.2 54.0 -25.8 Low ch, EUT vert, 1 Mbps	, 20MHz BW
12058.630 31.2 -3.2 1.0 297.9 3.0 0.0 Horz AV 0.0 28.0 54.0 -26.0 Low ch, EUT on side, 1 M 4874.183 41.2 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 47.7 74.0 -26.3 Mid ch, EUT on side, 36 N	
4674.163 41.2 0.5 1.0 13.0 3.0 0.0 Horz PK 0.0 47.7 74.0 -26.6 Mid ch, EUT on side, Mork	
4872.050 40.9 6.5 1.0 13.0 3.0 0.0 Horz PK 0.0 47.4 74.0 -26.6 Mid ch, EUT on side, MCS	60, 20MHz BW
4875.025 40.8 6.5 1.0 11.1 3.0 0.0 Horz PK 0.0 47.3 74.0 -26.7 Mid ch, EUT on side, MCS 4872.458 40.8 6.5 1.9 147.0 3.0 0.0 Horz PK 0.0 47.3 74.0 -26.7 Mid ch, EUT on side, 6 Mid ch,	
407.495 40.7 6.5 1.0 11.1 3.0 0.0 Horz PK 0.0 47.2 74.0 -26.8 Mid ch, EUT on side, MCS	
14472.290 40.7 5.2 1.0 15.1 3.0 0.0 Horz PK 0.0 45.9 74.0 -28.1 Low ch, EUT on side, 1 M	bps, 20MHz BW
14470.940 40.2 5.2 1.0 303.0 3.0 0.0 Vert PK 0.0 45.4 74.0 -28.6 Low ch, EUT vert, 1 Mbps 12309.510 43.0 -2.2 1.0 293.9 3.0 0.0 Vert PK 0.0 40.8 74.0 -33.2 High ch, EUT vert, 1 Mbps	
12301.630 42.3 -2.2 1.0 183.0 3.0 0.0 Horz PK 0.0 40.1 74.0 -33.9 High ch, EUT on side, 1 M	
12186.500 42.7 -2.8 1.0 301.9 3.0 0.0 Horz PK 0.0 39.9 74.0 -34.1 Mid ch, EUT on side, 1 Mid	
12182.700 42.7 -2.8 1.0 172.0 3.0 0.0 Vert PK 0.0 39.9 74.0 -34.1 Mid ch, EUT vert, 1 Mbps 12059.660 42.9 -3.2 1.0 191.1 3.0 0.0 Vert PK 0.0 39.7 74.0 -34.3 Low ch, EUT vert, 1 Mbps	
12058.540 42.6 -3.2 1.0 297.9 3.0 0.0 Horz PK 0.0 39.4 74.0 -34.6 Low ch, EUT on side, 1 M	

Report No. ELTL0004.1 210/223



#### **TEST DESCRIPTION**

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Rohde & Schwarz	ESR7	ARI	5/21/2015	5/21/2016
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	3/23/2015	3/23/2016
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, AQP	MNCA	5/13/2015	5/13/2016

#### **MEASUREMENT UNCERTAINTY**

Description		
Expanded k=2	2.4 dB	-2.4 dB

### **CONFIGURATIONS INVESTIGATED**

ELTL0004-3

#### **MODES INVESTIGATED**

Transmitting 802.11 high channel 1 Mbps Transmitting 802.11 low channel 1 Mbps

Transmitting 802.11 mid channel 1 Mbps

Report No. ELTL0004.1 211/223



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

#### **TEST PARAMETERS**

Run #:	17	Line:	High Line	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

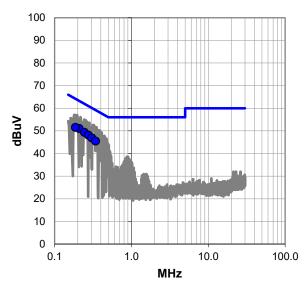
## **EUT OPERATING MODES**

Transmitting 802.11 low channel 1 Mbps

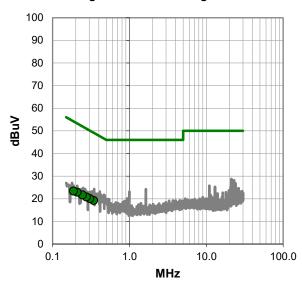
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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## **RESULTS - Run #17**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.209	30.8	20.3	51.1	63.3	-12.2
0.245	29.1	20.3	49.4	61.9	-12.6
0.187	31.2	20.4	51.6	64.2	-12.6
0.275	27.8	20.3	48.1	61.0	-12.9
0.305	26.6	20.3	46.9	60.1	-13.3
0.342	25.2	20.2	45.4	59.2	-13.7

Average Data - vs - Average Limit						
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)	
0.342	-1.0	20.2	19.2	49.2	-29.9	
0.305	-0.2	20.3	20.1	50.1	-30.1	
0.275	0.5	20.3	20.8	51.0	-30.2	
0.245	1.4	20.3	21.7	51.9	-30.3	
0.209	2.6	20.3	22.9	53.3	-30.4	
0.187	3.0	20.4	23.4	54.2	-30.8	

## **CONCLUSION**

Pass

Tested By



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

### **TEST PARAMETERS**

Run #:	18	Line:	Neutral	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

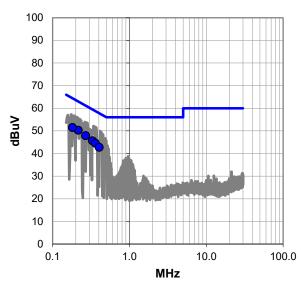
## **EUT OPERATING MODES**

Transmitting 802.11 low channel 1 Mbps

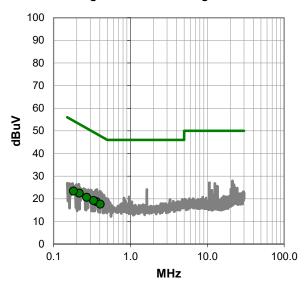
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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## **RESULTS - Run #18**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.216	30.0	20.3	50.3	63.0	-12.7
0.181	31.1	20.4	51.5	64.4	-12.9
0.269	27.6	20.3	47.9	61.2	-13.3
0.331	25.4	20.2	45.6	59.4	-13.8
0.360	24.3	20.2	44.5	58.7	-14.2
0.405	22.5	20.2	42.7	57.7	-15.0

Average Data - vs - Average Limit						
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)	
0.360	-1.5	20.2	18.7	48.7	-30.0	
0.405	-2.6	20.2	17.6	47.7	-30.1	
0.331	-1.0	20.2	19.2	49.4	-30.2	
0.216	2.2	20.3	22.5	53.0	-30.5	
0.269	0.4	20.3	20.7	51.2	-30.5	
0.181	3.0	20.4	23.4	54.4	-31.0	

## **CONCLUSION**

Pass

Tested By



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

#### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

### **TEST PARAMETERS**

Run #:	19	Line:	Neutral	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

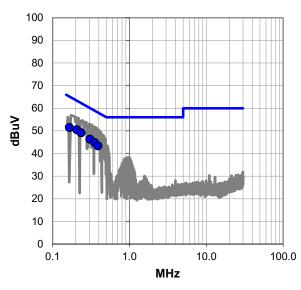
## **EUT OPERATING MODES**

Transmitting 802.11 mid channel 1 Mbps

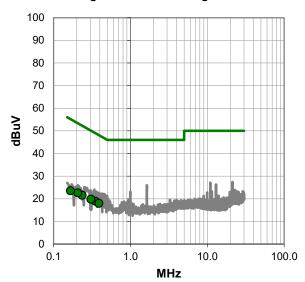
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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## **RESULTS - Run #19**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.207	30.2	20.3	50.5	63.3	-12.8
0.235	28.9	20.3	49.2	62.3	-13.1
0.166	31.1	20.4	51.5	65.2	-13.7
0.306	26.1	20.3	46.4	60.1	-13.7
0.352	24.6	20.2	44.8	58.9	-14.1
0.390	23.1	20.2	43.3	58.1	-14.7

Average Data - vs - Average Limit					
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.352	-1.4	20.2	18.8	48.9	-30.1
0.390	-2.3	20.2	17.9	48.1	-30.1
0.306	-0.5	20.3	19.8	50.1	-30.3
0.235	1.3	20.3	21.6	52.3	-30.7
0.207	2.3	20.3	22.6	53.3	-30.7
0.166	3.1	20.4	23.5	55.2	-31.7

## **CONCLUSION**

Pass

Tested By



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

#### **TEST PARAMETERS**

Run #:	20	Line:	High Line	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

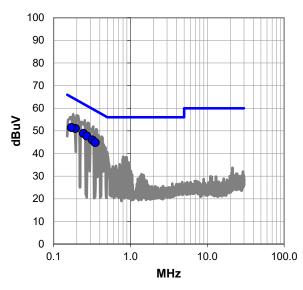
## **EUT OPERATING MODES**

Transmitting 802.11 mid channel 1 Mbps

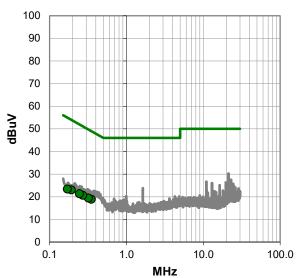
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



### Average Data - vs - Average Limit



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## **RESULTS - Run #20**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.192	30.7	20.3	51.0	63.9	-12.9
0.245	28.6	20.3	48.9	61.9	-13.1
0.271	27.5	20.3	47.8	61.1	-13.3
0.171	31.1	20.4	51.5	64.9	-13.4
0.319	25.7	20.3	46.0	59.7	-13.8
0.349	24.6	20.2	44.8	59.0	-14.1

Average Data - vs - Average Limit					
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.349	-1.4	20.2	18.8	49.0	-30.1
0.319	-0.8	20.3	19.5	49.7	-30.3
0.271	0.4	20.3	20.7	51.1	-30.4
0.245	1.1	20.3	21.4	51.9	-30.6
0.192	2.7	20.3	23.0	53.9	-30.9
0.171	3.0	20.4	23.4	54.9	-31.5

## **CONCLUSION**

Pass

Tested By



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

#### **TEST PARAMETERS**

Run #:	21	Line:	High Line	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

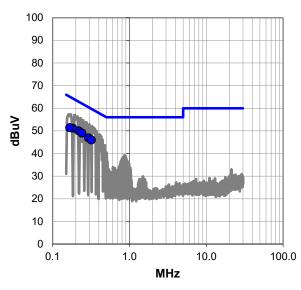
## **EUT OPERATING MODES**

Transmitting 802.11 high channel 1 Mbps

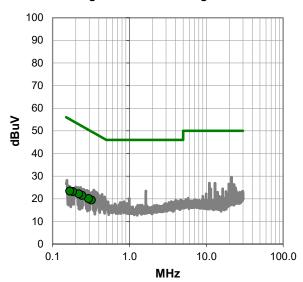
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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## **RESULTS - Run #21**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.219	29.7	20.3	50.0	62.9	-12.9
0.241	28.7	20.3	49.0	62.1	-13.1
0.182	30.8	20.4	51.2	64.4	-13.2
0.293	26.6	20.3	46.9	60.4	-13.6
0.168	31.0	20.4	51.4	65.1	-13.7
0.319	25.7	20.3	46.0	59.7	-13.8

Average Data - vs - Average Limit					
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.319	-0.8	20.3	19.5	49.7	-30.3
0.293	-0.2	20.3	20.1	50.4	-30.4
0.241	1.2	20.3	21.5	52.1	-30.6
0.219	1.9	20.3	22.2	52.9	-30.7
0.182	2.8	20.4	23.2	54.4	-31.2
0.168	3.0	20.4	23.4	55.1	-31.7

## **CONCLUSION**

Pass

Tested By



EUT:	Marcum RT-9	Work Order:	ELTL0004
Serial Number:	RTS0123456811	Date:	12/03/2015
Customer:	Electronic Technologies, LLC	Temperature:	22.1°C
Attendees:	Rocky Holmes, Deb See	Relative Humidity:	25.4%
Customer Project:	None	Bar. Pressure:	994.1 mb
Tested By:	Dustin Sparks	Job Site:	MN03
Power:	12VDC	Configuration:	ELTL0004-3

### **TEST SPECIFICATIONS**

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2013

### **TEST PARAMETERS**

Run #:	22	Line:	Neutral	Add. Ext. Attenuation (dB):	0

### **COMMENTS**

Shield U1 top and bottom, U8 and U12, ferrite on sonar module, ferrite on camera and internal ferrite camera module

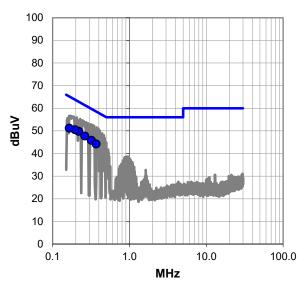
## **EUT OPERATING MODES**

Transmitting 802.11 high channel 1 Mbps

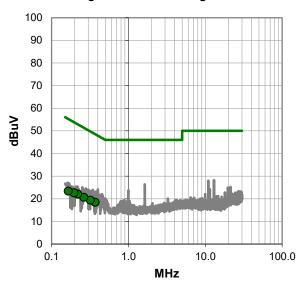
### **DEVIATIONS FROM TEST STANDARD**

None

#### Quasi Peak Data - vs - Quasi Peak Limit



#### Average Data - vs - Average Limit



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## **RESULTS - Run #22**

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.219	29.5	20.3	49.8	62.9	-13.1
0.196	30.2	20.3	50.5	63.8	-13.3
0.263	27.5	20.3	47.8	61.3	-13.6
0.320	25.6	20.3	45.9	59.7	-13.9
0.165	30.8	20.4	51.2	65.2	-14.0
0.369	24.0	20.2	44.2	58.5	-14.3

Average Data - vs - Average Limit					
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.369	-1.8	20.2	18.4	48.5	-30.1
0.320	-0.9	20.3	19.4	49.7	-30.4
0.263	0.4	20.3	20.7	51.3	-30.7
0.219	1.8	20.3	22.1	52.9	-30.8
0.196	2.3	20.3	22.6	53.8	-31.2
0.165	3.0	20.4	23.4	55.2	-31.8

## **CONCLUSION**

Pass

Tested By