

Awarepoint Corporation

BLED

FCC 15.247:2017

802.11bg SISO Radio

Report # AWAR0024.1





NVLAP Lab Code: 200676-0

CERTIFICATE OF TEST



Last Date of Test: March 20, 2017
Awarepoint Corporation
Model: BLED

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2017	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for a battery powered EUT.
6.5, 6.6, 11.12.1, 11.13.2	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	No	N/A	Not required, addressed under the output power test.
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.2.3.2	Output Power	Yes	Pass	
11.10.2	Power Spectral Density	Yes	Pass	
11.11	Band Edge Compliance	Yes	Pass	
11.11	Spurious Conducted Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Victor Ratinoff, 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. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY



Revision Number	Description	Date	Page Number
00	None		

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 Element to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

European Union

European Commission - Validated by the European Commission 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://portlandcustomer.element.com/ts/scope/scope.htm http://gsi.nist.gov/global/docs/cabs/designations.html

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 QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. 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	- MU
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

FACILITIES







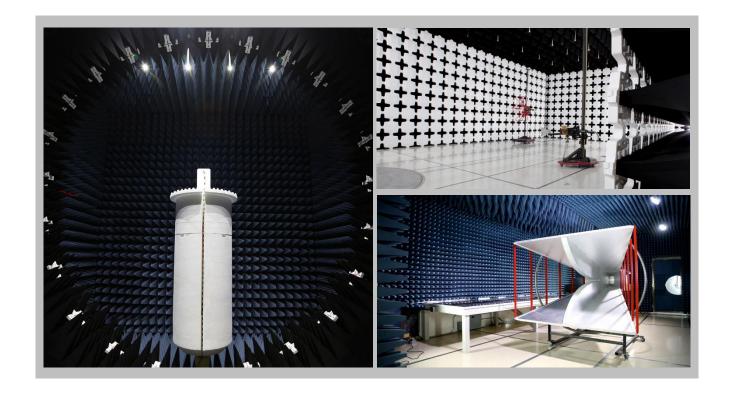
California Labs OC01-13 41 Tesla Irvine, CA 92618

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

TexasLabs TX01-09
3801 E Plano Pkwy
Plano, TX 75074
(469) 304-5255

WashingtonLabs NC01-05
19201 120th Ave NE
Bothell, WA 98011
(425)984-6600

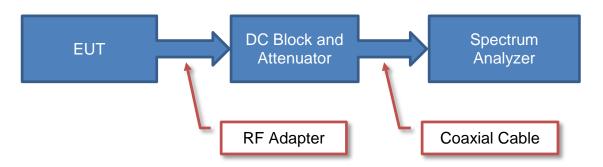
Irvine, CA 92618 (949) 861-8918	Brooklyn Park, MN 55445 (612)-638-5136	Elbridge, NY 13060 (315) 554-8214	Hillsboro, OR 97124 (503) 844-4066	Plano, TX 75074 (469) 304-5255	Bothell, WA 98011 (425)984-6600			
	NVLAP							
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0			
	Innovation, Science and Economic Development Canada							
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1			
	BSMI							
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R			
	VCCI							
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			



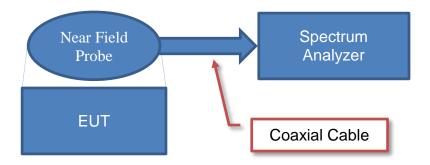
Test Setup Block Diagrams



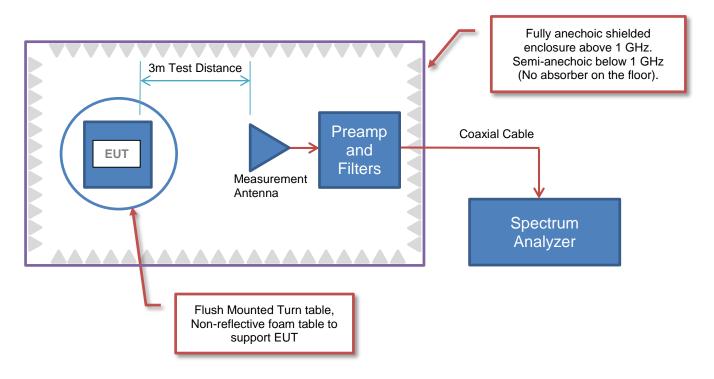
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Awarepoint Corporation			
Address:	600 W. Broadway Suite 250			
City, State, Zip:	San Diego, CA 92101			
Test Requested By:	John Taylor			
Model:	BLED			
First Date of Test:	March 15, 2017			
Last Date of Test:	March 20, 2017			
Receipt Date of Samples:	March 14, 2017			
Equipment Design Stage:	Production			
Equipment Condition:	No Damage			
Purchase Authorization:	Verified			

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

The BLED (BLE Display) contains a Bluetooth Low Energy radio and an 802.11bg radio.

Testing Objective:

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

CONFIGURATIONS



Configuration AWAR0024- 2

Software/Firmware Running during test				
Description	Version			
SmartRF Studio 7	2.3.1			
RadioTool GUI	1.2.5942.19689			

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
WiFi and Bluetooth Radio	Awarepoint Corporation	BLED	None

Peripherals in test setup boundary						
Description Manufacturer Model/Part Number Serial Number						
Laptop	Dell	VOSTRO 3550	FJRVLR1			
AC/DC Power Supply	Dell	LA90PS0-00	CN-0DF266-71615-73O-0B34			
WiFi Interface Board	Texas Instruments	CC3100BOOST	A8013723			

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
Micro USB Cable	No	1.0m	No	USB Cable	BLE Interface Board	
AC Cable	No	0.75m	No	AC mains	AC/DC Power Supply	
Ribbon Cable	No	0.1m	No	WiFi Interface Board	WiFi and Bluetooth Radio	
Micro USB Cable	No	1.0m	No	WiFi Interface Board	Laptop	

MODIFICATIONS



10/78

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
		Spurious	Tested as	No EMI suppression	EUT remained at
1	3/15/2017	Radiated	delivered to	devices were added or	Element following the
		Emissions	Test Station.	modified during this test.	test.
		Band Edge	Tested as	No EMI suppression	EUT remained at
2	3/20/2017	Compliance	delivered to	devices were added or	Element following the
		Compliance	Test Station.	modified during this test.	test.
		Occupied	Tested as	No EMI suppression	EUT remained at
3	3/20/2017	Bandwidth	delivered to	devices were added or	Element following the
		Dandwidth	Test Station.	modified during this test.	test.
		Output	Tested as	No EMI suppression	EUT remained at
4	3/20/2017	Power	delivered to	devices were added or	Element following the
		rowei	Test Station.	modified during this test.	test.
		Power	Tested as	No EMI suppression	EUT remained at
5	3/20/2017	Spectral	delivered to	devices were added or	Element following the
		Density	Test Station.	modified during this test.	test.
		Spurious	Tested as	No EMI suppression	Scheduled testing
6	3/20/2017	Conducted	delivered to	devices were added or	was completed.
		Emissions	Test Station.	modified during this test.	was completed.

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2017.01.26

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

Operating 802.11bg Transmit Mode: Low Ch. 1 (2412MHz), Mid Ch. 6 (2437MHz), High Ch. 11 (2462MHz)
Operating 802.11bg Transmit Mode: Low Ch. 1 (2412MHz), High Ch. 11 (2462MHz)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

AWAR0024 - 2

FREQUENCY RANGE INVESTIGATED

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
Cable	Northwest EMC	18-26GHz RE Cables	OCK	1/3/2017	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFC	10/17/2016	12 mo
Attenuator	Weinschel Corp	4H-20	AWB	3/3/2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	1/3/2017	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHN	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	8/15/2016	12 mo
Cable	ESM Cable Corp.	8-18GHz cables	OCY	10/17/2016	12 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	9/19/2016	12 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	9/19/2016	12 mo
Antenna - Biconilog	EMCO	3142	AXA	10/24/2016	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	8/15/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	10/17/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	8/15/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	6/23/2016	24 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AHX	NCR	0 mo
Antenna - Standard Gain	EMCO	3160-08	AHK	NCR	0 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFJ	1/28/2017	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

Report No. AWAR0024.1 11/78

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector

PK = Peak Detector

AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

SPURIOUS RADIATED EMISSIONS



										EmiR5 2017.01.2	!5	PSA-ESCI 2017.01.26	3
Wo	ork Order:		R0024		Date:		15/17		11				
	Project:	N	one	Ter	mperature:	22.	7 °C		4	6	2/		
	Job Site:	0	C10		Humidity:	47.29	% RH						
Serial	I Number:		one	Barome	etric Pres.:	1020	mbar		Tested by:	Mark Bay	tan		_
		BLED											
	iguration:												
C	Customer:	Awarepoir	nt Corporation	n									_
Α	ttendees:	None											_
EU	JT Power:	Battery											_
		Operating	802.11bg T	ransmit M	ode: Low Cl	n. 1 (2412N	/IHz). High	Ch. 11 (246	62MHz)				=
Operati	ing Mode:					•	,, 0	`	,				
_		None											=
D	eviations:												
		Power Se	tting = 0										-
Co	omments:		9										
									1				3
Test Speci							Test Meth						_
FCC 15.24	7:2017						ANSI C63	3.10:2013					
Run #	6	Test Di	stance (m)	3	Antenna	Height(s)		1 to 4(m)		Results	S F	Pass	_
80 —	•	•	` '		•		•	` ′					=
° 0 Т													
70													
70													
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60													
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3 40 +													
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100	00											10000	
100						NAI 1						10000	
						MHz				■ PK	AV	QP	
												-	
						E.A.	Polarity/		Dist				
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)	.,,,,	Dototor	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
(, . - ,													Comments
2483.920	24.9	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Horz
2483.910	24.9	2.3	1.0	191.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Horz
2483.953	24.9	2.3	1.0	78.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Vert
2484.730	24.9	2.3	1.0	49.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT on Side High Ch 11, 1 Mbps, EUT on Side
2485.017 2483.537	24.9 24.9	2.3 2.3	1.0 2.8	244.0 153.0	3.0 3.0	20.0 20.0	Horz Horz	AV AV	0.0 0.0	47.2 47.2	54.0 54.0	-6.8 -6.8	High Ch 11, 11 Mbps, EUT on Side
2483.913	24.9	2.3	1.0	59.0	3.0	20.0	Vert	AV	0.0	47.2 47.1	54.0 54.0	-6.8 -6.9	High Ch 11, 1 Mbps, EUT Vert
2400.010	2-7.0	2.0	1.0	450.0	0.0	20.0	v 611	/T.V	0.0	47.1	54.0	0.0	Libb Ot 44 COMPAN FUT - Cit

Freq	Amplitude	Factor	Antenna Height	Azimuth	Test Distance	Attenuation	Туре	Detector	Adjustment	Adjusted	Spec. Limit	Spec.	
(MHz)	(dBuV)	(dB)	(meters)	(degrees)	(meters)	(dB)			(dB)	(dBuV/m)	(dBuV/m)	(dB)	Comments
2483.920	24.9	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Horz
2483.910	24.9	2.3	1.0	191.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Horz
2483.953	24.9	2.3	1.0	78.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT Vert
2484.730	24.9	2.3	1.0	49.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT on Side
2485.017	24.9	2.3	1.0	244.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 1 Mbps, EUT on Side
2483.537	24.9	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch 11, 11 Mbps, EUT on Side
2483.913	24.8	2.3	1.0	59.0	3.0	20.0	Vert	AV	0.0	47.1	54.0	-6.9	High Ch 11, 1 Mbps, EUT Vert
2483.610	24.8	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch 11, 36 Mbps, EUT on Side
2483.627	24.8	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch 11, 6 Mbps, EUT on Side
2483.617	24.8	2.3	2.8	153.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch 11, 54 Mbps, EUT on Side
2389.220	24.8	2.0	1.0	203.0	3.0	20.0	Horz	AV	0.0	46.8	54.0	-7.2	Low Ch 1, 1 Mbps, EUT Horz
2388.563	24.8	2.0	2.4	234.0	3.0	20.0	Vert	AV	0.0	46.8	54.0	-7.2	Low Ch 1, 1 Mbps, EUT Horz
2388.980	24.8	2.0	2.4	234.0	3.0	20.0	Vert	AV	0.0	46.8	54.0	-7.2	Low Ch 1, 6 Mbps, EUT Horz
2388.017	24.8	2.0	1.0	203.0	3.0	20.0	Horz	AV	0.0	46.8	54.0	-7.2	Low Ch 1, 6 Mbps, EUT Horz
2484.860	39.8	2.3	2.8	153.0	3.0	20.0	Horz	PK	0.0	62.1	74.0	-11.9	High Ch 11, 1 Mbps, EUT Horz
2389.403	38.4	2.0	1.0	203.0	3.0	20.0	Horz	PK	0.0	60.4	74.0	-13.6	Low Ch 1, 1 Mbps, EUT Horz
2483.610	37.9	2.3	1.0	78.0	3.0	20.0	Horz	PK	0.0	60.2	74.0	-13.8	High Ch 11, 1 Mbps, EUT Vert
2484.203	37.8	2.3	1.0	191.0	3.0	20.0	Vert	PK	0.0	60.1	74.0	-13.9	High Ch 11, 1 Mbps, EUT Horz
2485.097	37.8	2.3	1.0	49.0	3.0	20.0	Vert	PK	0.0	60.1	74.0	-13.9	High Ch 11, 1 Mbps, EUT on Side
2483.513	37.8	2.3	2.8	153.0	3.0	20.0	Horz	PK	0.0	60.1	74.0	-13.9	High Ch 11, 1 Mbps, EUT on Side
2484.463	37.7	2.3	1.0	244.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	High Ch 11, 1 Mbps, EUT on Side
2484.143	37.7	2.3	2.8	153.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	High Ch 11, 6 Mbps, EUT on Side
2388.017	38.0	2.0	1.0	203.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	Low Ch 1, 6 Mbps, EUT Horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.813	37.4	2.3	2.8	153.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	High Ch 11, 11 Mbps, EUT on Side
2483.653	37.4	2.3	2.8	153.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	High Ch 11, 54 Mbps, EUT on Side
2388.157	37.7	2.0	2.4	234.0	3.0	20.0	Vert	PK	0.0	59.7	74.0	-14.3	Low Ch 1, 1 Mbps, EUT Horz
2484.890	37.2	2.3	1.0	59.0	3.0	20.0	Vert	PK	0.0	59.5	74.0	-14.5	High Ch 11, 1 Mbps, EUT Vert
2389.427	37.3	2.0	2.4	234.0	3.0	20.0	Vert	PK	0.0	59.3	74.0	-14.7	Low Ch 1, 6 Mbps, EUT Horz

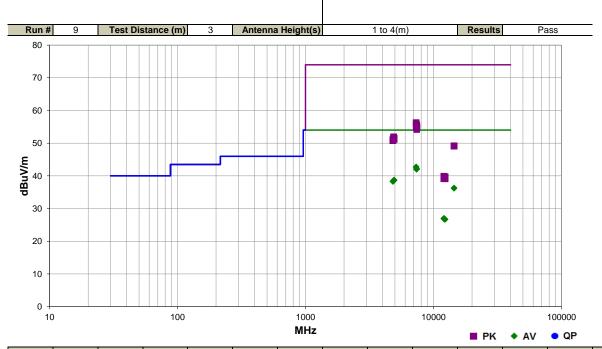
SPURIOUS RADIATED EMISSIONS



				EmiR5 2017.01.25 PSA-ESCI 2017.01.26
Work Order:	AWAR0024	Date:	03/15/17	11 3
Project:	None	Temperature:	22.7 °C	Mr Byta
Job Site:	OC10	Humidity:	47.2% RH	
Serial Number:	None	Barometric Pres.:	1020 mbar	Tested by: Mark Baytan
EUT:	BLED			
Configuration:	2			
Customer:	Awarepoint Corporation	on		
Attendees:	None			
EUT Power:	Battery			
Operating Mode:	Operating 802.11bg T	ransmit Mode: Low Ch.	1 (2412MHz), Mid	Ch. 6 (2437MHz), High Ch. 11 (2462MHz)
Deviations:	None			
Comments:	Power Setting = 0			

Test Specifications FCC 15.247:2017

Test Method ANSI C63.10:2013



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	
. ,													Comments
7310.070	24.7	18.0	1.0	191.0	3.0	0.0	Horz	AV	0.0	42.7	54.0	-11.3	Mid Ch 6, 1 Mbps, EUT Horz
7309.535	24.7	18.0	1.7	153.0	3.0	0.0	Vert	AV	0.0	42.7	54.0	-11.3	Mid Ch 6, 1 Mbps, EUT Horz
7384.865	24.2	17.9	1.0	317.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT Horz
7384.525	24.2	17.9	1.0	333.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT Horz
7384.760	24.2	17.9	1.0	17.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT on Side
7384.655	24.2	17.9	1.7	70.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT Vert
7384.580	24.2	17.9	1.0	46.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT Vert
7384.655	24.2	17.9	1.0	79.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 1 Mbps, EUT on Side
7384.830	24.2	17.9	1.0	315.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 6 Mbps, EUT Horz
7384.900	24.2	17.9	1.0	315.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 36 Mbps, EUT Horz
7384.575	24.2	17.9	1.0	315.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 11 Mbps, EUT Horz
7384.525	24.2	17.9	1.0	315.0	3.0	0.0	Horz	AV	0.0	42.1	54.0	-11.9	High Ch 11, 54 Mbps, EUT Horz
7384.580	24.2	17.9	1.0	333.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 6 Mbps, EUT Horz
7384.775	24.2	17.9	1.0	333.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 36 Mbps, EUT Horz
7384.795	24.2	17.9	1.0	333.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 11 Mbps, EUT Horz
7384.650	24.2	17.9	1.0	333.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	High Ch 11, 54 Mbps, EUT Horz
4922.580	25.9	12.8	1.8	322.0	3.0	0.0	Horz	AV	0.0	38.7	54.0	-15.3	High Ch 11, 1 Mbps, EUT Horz
4922.745	25.9	12.8	1.0	265.0	3.0	0.0	Vert	AV	0.0	38.7	54.0	-15.3	High Ch 11, 1 Mbps, EUT Horz
4875.490	25.8	12.8	1.0	185.0	3.0	0.0	Vert	AV	0.0	38.6	54.0	-15.4	Mid Ch 6, 1 Mbps, EUT Horz
4875.060	25.7	12.8	1.0	360.0	3.0	0.0	Horz	AV	0.0	38.5	54.0	-15.5	Mid Ch 6, 1 Mbps, EUT Horz
4824.155	25.5	12.8	1.0	302.0	3.0	0.0	Horz	AV	0.0	38.3	54.0	-15.7	Low Ch 1, 1 Mbps, EUT Horz
4824.045	25.5	12.8	1.0	86.0	3.0	0.0	Vert	AV	0.0	38.3	54.0	-15.7	Low Ch 1, 1 Mbps, EUT Horz
7310.780	38.3	18.0	1.0	191.0	3.0	0.0	Horz	PK	0.0	56.3	74.0	-17.7	Mid Ch 6, 1 Mbps, EUT Horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
14470.510	24.6	11.7	1.0	173.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	Low Ch 1, 1 Mbps, EUT Horz
14470.900	24.5	11.7	1.8	216.0	3.0	0.0	Horz	AV	0.0	36.2	54.0	-17.8	Low Ch 1, 1 Mbps, EUT Horz
7386.345	37.7	17.9	1.0	317.0	3.0	0.0	Horz	PK	0.0	55.6	74.0	-18.4	High Ch 11, 1 Mbps, EUT Horz
7386.885	37.6	17.9	1.0	17.0	3.0	0.0	Horz	PK	0.0	55.5	74.0	-18.5	High Ch 11, 1 Mbps, EUT on Side
7385.350	37.4	17.9	1.0	333.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	High Ch 11, 1 Mbps, EUT Horz
7309.890	37.3	18.0	1.7	153.0	3.0	0.0	Vert	PK	0.0	55.3	74.0	-18.7	Mid Ch 6, 1 Mbps, EUT Horz
7384.590	37.3	17.9	1.7	70.0	3.0	0.0	Vert	PK	0.0	55.2	74.0	-18.8	High Ch 11, 1 Mbps, EUT Vert
7387.475	37.3	17.9	1.0	79.0	3.0	0.0	Vert	PK	0.0	55.2	74.0	-18.8	High Ch 11, 1 Mbps, EUT on Side
7386.505	37.1	17.9	1.0	315.0	3.0	0.0	Horz	PK	0.0	55.0	74.0	-19.0	High Ch 11, 11 Mbps, EUT Horz
7386.175	37.1	17.9	1.0	315.0	3.0	0.0	Horz	PK	0.0	55.0	74.0	-19.0	High Ch 11, 6 Mbps, EUT Horz
7387.155	37.1	17.9	1.0	333.0	3.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0	High Ch 11, 6 Mbps, EUT Horz
7386.895	37.0	17.9	1.0	333.0	3.0	0.0	Vert	PK	0.0	54.9	74.0	-19.1	High Ch 11, 11 Mbps, EUT Horz
7387.215	37.0	17.9	1.0	333.0	3.0	0.0	Vert	PK	0.0	54.9	74.0	-19.1	High Ch 11, 54 Mbps, EUT Horz
7386.635	36.9	17.9	1.0	315.0	3.0	0.0	Horz	PK	0.0	54.8	74.0	-19.2	High Ch 11, 36 Mbps, EUT Horz
7385.975	36.9	17.9	1.0	315.0	3.0	0.0	Horz	PK	0.0	54.8	74.0	-19.2	High Ch 11, 54 Mbps, EUT Horz
7387.145	36.8	17.9	1.0	46.0	3.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	High Ch 11, 1 Mbps, EUT Vert
7385.770	36.3	17.9	1.0	333.0	3.0	0.0	Vert	PK	0.0	54.2	74.0	-19.8	High Ch 11, 36 Mbps, EUT Horz
4874.200	39.1	12.8	1.0	185.0	3.0	0.0	Vert	PK	0.0	51.9	74.0	-22.1	Mid Ch 6, 1 Mbps, EUT Horz
4875.490	38.8	12.8	1.0	360.0	3.0	0.0	Horz	PK	0.0	51.6	74.0	-22.4	Mid Ch 6, 1 Mbps, EUT Horz
4923.080	38.7	12.8	1.0	265.0	3.0	0.0	Vert	PK	0.0	51.5	74.0	-22.5	High Ch 11, 1 Mbps, EUT Horz
4923.840	38.4	12.8	1.8	322.0	3.0	0.0	Horz	PK	0.0	51.2	74.0	-22.8	High Ch 11, 1 Mbps, EUT Horz
4822.750	38.3	12.8	1.0	86.0	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	Low Ch 1, 1 Mbps, EUT Horz
4825.235	38.0	12.8	1.0	302.0	3.0	0.0	Horz	PK	0.0	50.8	74.0	-23.2	Low Ch 1, 1 Mbps, EUT Horz
14471.060	37.5	11.7	1.0	173.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8	Low Ch 1, 1 Mbps, EUT Horz
14470.770	37.4	11.7	1.8	216.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	Low Ch 1, 1 Mbps, EUT Horz
12058.520	30.7	-3.7	2.7	76.0	3.0	0.0	Horz	AV	0.0	27.0	54.0	-27.0	Low Ch 1, 1 Mbps, EUT Horz
12058.510	30.6	-3.7	1.0	38.0	3.0	0.0	Vert	AV	0.0	26.9	54.0	-27.1	Low Ch 1, 1 Mbps, EUT Horz
12183.510	29.6	-2.8	1.0	69.0	3.0	0.0	Horz	AV	0.0	26.8	54.0	-27.2	Mid Ch 6, 1 Mbps, EUT Horz
12183.590	29.6	-2.8	1.0	45.0	3.0	0.0	Vert	AV	0.0	26.8	54.0	-27.2	Mid Ch 6, 1 Mbps, EUT Horz
12308.870	29.7	-3.0	1.0	324.0	3.0	0.0	Horz	AV	0.0	26.7	54.0	-27.3	High Ch 11, 1 Mbps, EUT Horz
12308.590	29.7	-3.0	1.0	266.0	3.0	0.0	Vert	AV	0.0	26.7	54.0	-27.3	High Ch 11, 1 Mbps, EUT Horz
12058.800	43.6	-3.7	1.0	38.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	Low Ch 1, 1 Mbps, EUT Horz
12311.430	42.7	-3.0	1.0	266.0	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	High Ch 11, 1 Mbps, EUT Horz
12185.800	42.4	-2.8	1.0	45.0	3.0	0.0	Vert	PK	0.0	39.6	74.0	-34.4	Mid Ch 6, 1 Mbps, EUT Horz
12184.140	42.3	-2.8	1.0	69.0	3.0	0.0	Horz	PK	0.0	39.5	74.0	-34.5	Mid Ch 6, 1 Mbps, EUT Horz
12060.710	42.9	-3.7	2.7	76.0	3.0	0.0	Horz	PK	0.0	39.2	74.0	-34.8	Low Ch 1, 1 Mbps, EUT Horz
12309.220	42.1	-3.0	1.0	324.0	3.0	0.0	Horz	PK	0.0	39.1	74.0	-34.9	High Ch 11, 1 Mbps, EUT Horz



XMit 2017.01.26

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.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/2/2016	11/2/2017
Block - DC	Fairview Microwave	SD3379	AMV	1/11/2017	1/11/2018
Attenuator	Fairview Microwave	SA18H-20	TKR	1/5/2017	1/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018

TEST DESCRIPTION

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

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.



						NweTx 2016.09.14.2	XMit 2017.01.2
EUT: E					Work Order:		
Serial Number:						03/20/17	
Customer:	Awarepoint Corporation				Temperature:		
Attendees:					Humidity:		
Project: N	None				Barometric Pres.:	1020 mbar	
Tested by:			Power:	Battery	Job Site:	OC13	
TEST SPECIFICATIO	DNS			Test Method			
FCC 15.247:2017				ANSI C63.10:2013			
COMMENTS							
Reference level offse	et (DC block + 20 dB atte	enuator + direct connect cable + patch	cable) = 23.6 dB.	Power setting = 0.			
DEVIATIONS FROM	TEST STANDARD						
None							
Configuration #	2		111	3,+-			
comiguration #	-	Signature	176	7			
		<u> </u>				Limit	
					Value	(>)	Result
Low Channel 1, 2412					0.005.1411-	500 HH-	D
	802.11(b) 1 Mbps				8.925 MHz	500 kHz	Pass
	802.11(b) 11 Mbps				8.901 MHz 14.647 MHz	500 kHz	Pass Pass
	802.11(g) 6 Mbps				14.647 MHZ 16.249 MHz	500 kHz 500 kHz	Pass Pass
	302.11(g) 36 Mbps 302.11(g) 54 Mbps				15.983 MHz	500 kHz	Pass
Mid Channel 6, 2437 M					15.983 WHZ	JUU KIIZ	FdSS
	802.11(b) 1 Mbps				9.525 MHz	500 kHz	Pass
	302.11(b) 11 Mbps				8.983 MHz	500 kHz	Pass
	302.11(g) 6 Mbps				13.801 MHz	500 kHz	Pass
	302.11(g) 36 Mbps				16.349 MHz	500 kHz	Pass
	302.11(g) 54 Mbps				16.208 MHz	500 kHz	Pass
High Channel 11, 246					10.200 IVII IZ	000 M IZ	1 433
	302.11(b) 1 Mbps				9.462 MHz	500 kHz	Pass
	302.11(b) 11 Mbps				8.866 MHz	500 kHz	Pass
	302.11(g) 6 Mbps				14.915 MHz	500 kHz	Pass
	302.11(g) 36 Mbps				16.005 MHz	500 kHz	Pass
	802.11(g) 54 Mbps				16.21 MHz	500 kHz	Pass
0	502.11(g) 54 NIDPS				10.21 1/17/2	JUU KMZ	rass



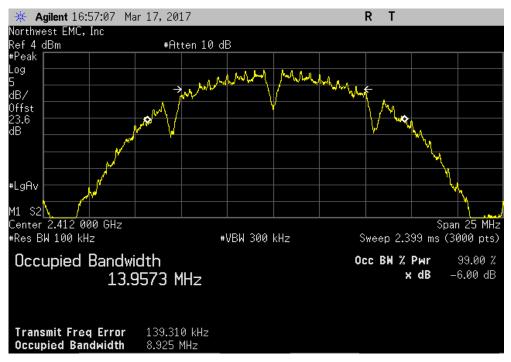
19/78

Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps

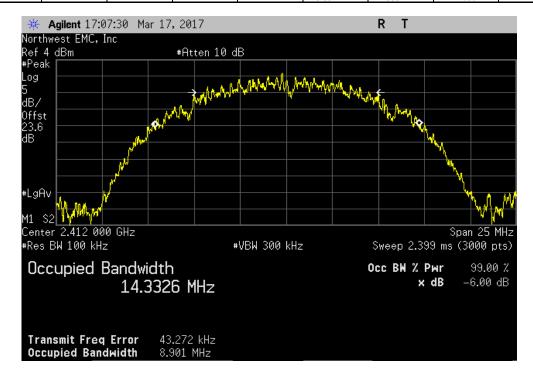
Limit

Value (>) Result

8.925 MHz 500 kHz Pass



	Low Channel 1	I, 2412 MHz, 802	.11(b) 11 Mbps			
				Limit		
			Value	(>)	Result	
			8.901 MHz	500 kHz	Pass	



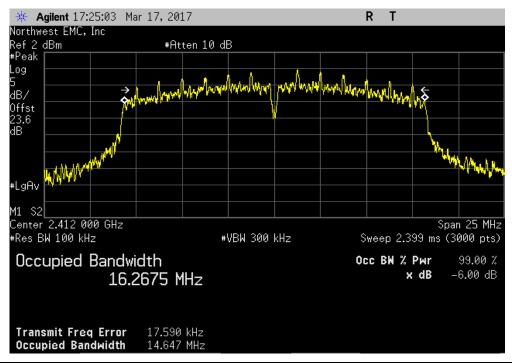


Low Channel 1, 2412 MHz, 802.11(g) 6 Mbps

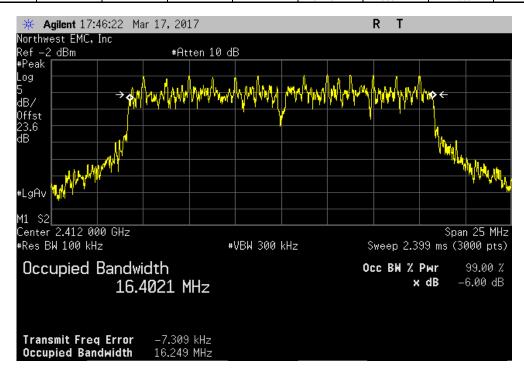
Limit

Value (>) Result

14.647 MHz 500 kHz Pass



		Low Channel 1	1, 2412 MHz, 802	.11(g) 36 Mbps			
					Limit		
				Value	(>)	Result	
ĺ				16.249 MHz	500 kHz	Pass	Ī



Report No. AWAR0024.1 20/78

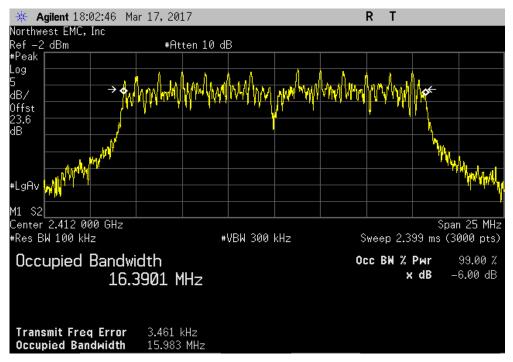


Low Channel 1, 2412 MHz, 802.11(g) 54 Mbps

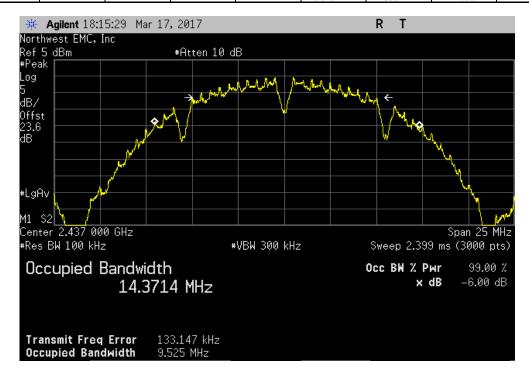
Limit

Value (>) Result

15.983 MHz 500 kHz Pass



	Mid Channel 6	6, 2437 MHz, 802	.11(b) 1 Mbps			
				Limit		
			Value	(>)	Result	
<u> </u>			9.525 MHz	500 kHz	Pass	



Report No. AWAR0024.1 21/78

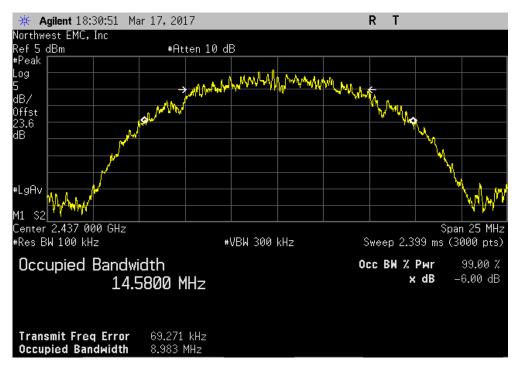


Mid Channel 6, 2437 MHz, 802.11(b) 11 Mbps

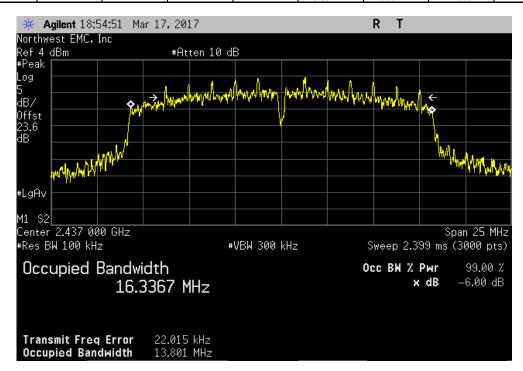
Limit

Value (-) Result

8.983 MHz 500 kHz Pass



	Mid Channel (6, 2437 MHz, 802	1.11(g) 6 Mbps		
				Limit	
			Value	(>)	Result
			13.801 MHz	500 kHz	Pass



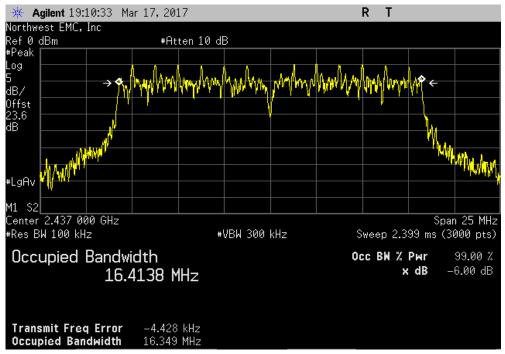


Mid Channel 6, 2437 MHz, 802.11(g) 36 Mbps

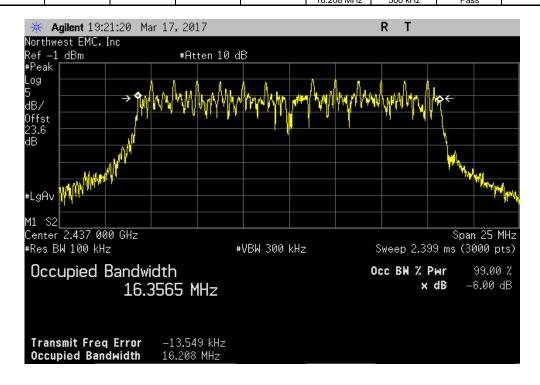
Limit

Value (-) Result

16.349 MHz 500 kHz Pass



	Mid Channel 6	6, 2437 MHz, 802.	11(g) 54 Mbps			
				Limit		
			Value	(>)	Result	_
			4 C 000 MI I-	LOO 1:11-	D	ſ



Report No. AWAR0024.1 23/78



High Channel 11, 2462 MHz, 802.11(b) 1 Mbps

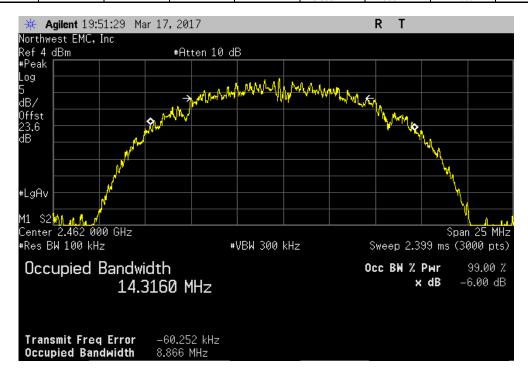
Limit

Value (>) Result

9.462 MHz 500 kHz Pass



	High Channel 1	1, 2462 MHz, 80	2.11(b) 11 Mbps			
				Limit		
			Value	(>)	Result	
			8.866 MHz	500 kHz	Pass	Ī



Report No. AWAR0024.1 24/78



High Channel 11, 2462 MHz, 802.11(g) 6 Mbps

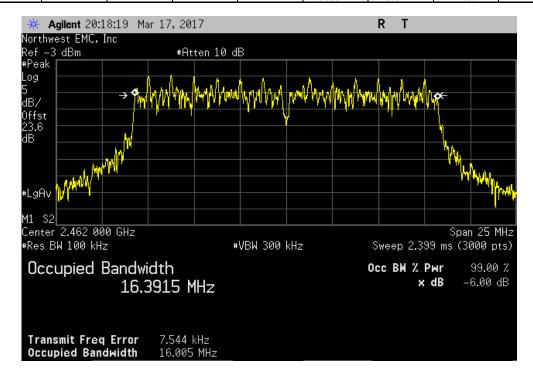
Limit

Value (->) Result

14.915 MHz 500 kHz Pass



	High Channel 1	1, 2462 MHz, 802	2.11(g) 36 Mbps		
				Limit	
			Value	(>)	Result
			16.005 MHz	500 kHz	Pass



Report No. AWAR0024.1 25/78

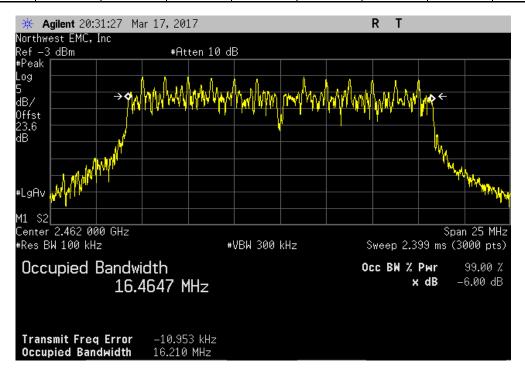


High Channel 11, 2462 MHz, 802.11(g) 54 Mbps

Limit

Value (>) Result

16.21 MHz 500 kHz 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.	Cal. Due
Meter - Power	ETS Lindgren	7002-006	SRB	12/6/2016	12/6/2017
Block - DC	Fairview Microwave	SD3379	AMV	1/11/2017	1/11/2018
Attenuator	Fairview Microwave	SA18H-20	TKR	1/5/2017	1/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and an RF average power meter. 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 gated RF average power meter was used due to the irregular duty cycle of the EUT. Per FCC KDB 558074 D01 v03r05, Section 9.2.3.2 (ANSI C63.10:2013, section 11.9.2.3.2):

"Alternatively, measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required."

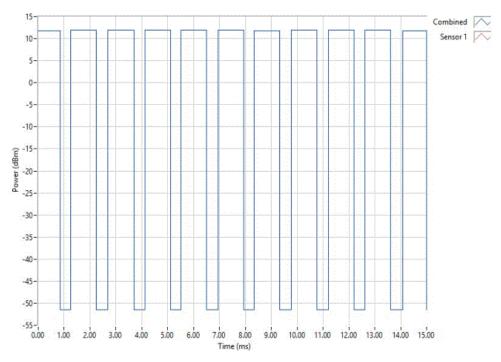
The duty cycle was reported for information purposes.



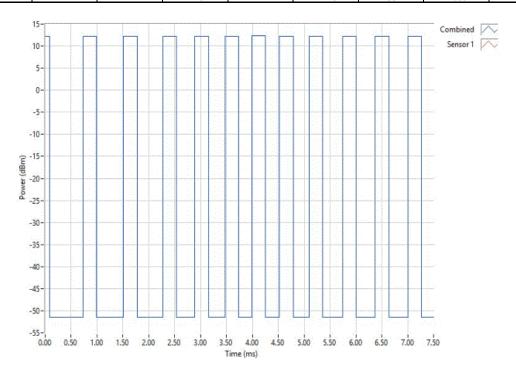
				NweTx 2016.09.14.2	2 XMit 2017.01.
	BLED		Work Order:		
Serial Number:	None			03/20/17	
Customer:	Awarepoint Corporation		Temperature:		
Attendees:				48.6% RH	
Project:			Barometric Pres.:		
	Mark Baytan	Power: Battery	Job Site:	OC13	
TEST SPECIFICATI	IONS	Test Method			
FCC 15.247:2017		ANSI C63.10:2013			
COMMENTS					
Reference level offs	set (DC block + 20 dB atte	enuator + direct connect cable + patch cable) = 23.5 dB. Power setting = 0.			
	I TEST STANDARD				
None					
Configuration #	2	Signature ALA Syt			
		Duty	Avg Cond	Limit	
		Cycle (%)	Pwr (dBm)	(dBm)	Results
Low Channel 1, 2412	2 MHz	Cycle (%)	Pwr (dBm)	(dBm)	Results
	802.11(b) 1 Mbps	Cycle (%) 72.195	Pwr (dBm) 11.93	(dBm) 30	Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps	Cycle (%) 72.195 44.731	Pwr (dBm) 11.93 12.29	(dBm) 30 30	Pass Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps	Cycle (%) 72.195 44.731 33.711	Pwr (dBm) 11.93 12.29 10.19	(dBm) 30	Pass Pass Pass
·	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps	Cycle (%) 72.195 44.731 33.711 16.369	Pwr (dBm) 11.93 12.29 10.19 8.55	30 30 30 30 30 30	Pass Pass Pass Pass
·	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps	Cycle (%) 72.195 44.731 33.711	Pwr (dBm) 11.93 12.29 10.19	(dBm) 30 30 30	Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz	Cycle (%) 72.195 44.731 33.711 16.369 13.876	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84	(dBm) 30 30 30 30 30 30	Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps	Cycle (%) 72.195 44.731 33.711 16.369 13.876	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84	30 30 30 30 30 30 30	Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps ** MHz** 802.11(b) 1 Mbps 802.11(b) 11 Mbps	Cycle (%) 72.195 44.731 33.7/1 16.369 13.876 72.571 48.304	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49	(dBm) 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(p) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps	72.195 44.731 33.711 16.369 13.876 72.571 48.304 34.27	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(p) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps	Cycle (%) 72.195 44.731 33.711 16.369 13.876 72.571 48.304 34.27 19.108	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps	72.195 44.731 33.711 16.369 13.876 72.571 48.304 34.27	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.111(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps MHz 802.11(b) 11 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps	Cycle (%) 72.195 44.731 33.711 16.369 13.876 72.571 48.304 34.27 19.108 15.676	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83 10.82	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps	Cycle (%) 72.195 44.731 33.711 16.369 13.876 72.571 48.304 34.27 19.108 15.676	Pwr (dBm) 11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83 10.82	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437 High Channel 11, 24	802.11(b) 1 Mbps 802.111(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps MHz 802.11(b) 11 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps	Cycle (%) 72.195 44.731 33.7/1 16.369 13.876 72.571 48.304 34.27 19.108 15.676 71.263 48.921	11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83 10.82	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437 High Channel 11, 24	802.11(b) 1 Mbps 802.111(b) 11 Mbps 802.111(b) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(b) 11 Mbps 802.11(b) 11 Mbps 802.11(b) 1 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 1 Mbps 802.11(g) 1 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(b) 6 Mbps	Cycle (%) 72.195 44,731 33.711 16.369 13.876 72.571 48.304 34.27 19.108 15.676 71.263 48.921 33.938	11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83 10.82 12.32 12.32 12.83 10.5	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass
Mid Channel 6, 2437 High Channel 11, 24	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 802.11(g) 15 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps	Cycle (%) 72.195 44.731 33.7/1 16.369 13.876 72.571 48.304 34.27 19.108 15.676 71.263 48.921	11.93 12.29 10.19 8.55 8.84 13.14 13.49 13.24 10.83 10.82	(dBm) 30 30 30 30 30 30 30 30 30 30 30 30 30	Pass Pass Pass Pass Pass Pass Pass Pass



Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps							
Duty Avg Cond Limit							
Cycle (%) Pwr (dBm) (dBm) Results							
72.195 11.93 30 Pass							

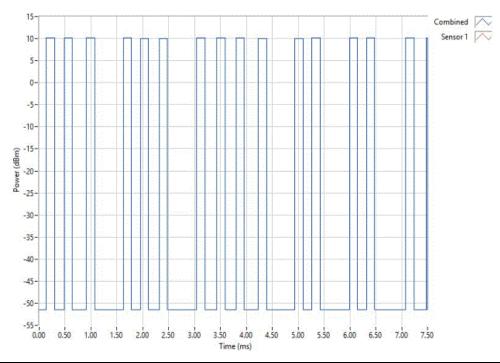


	Low Channel 1	, 2412 MHz, 802	.11(b) 11 Mbps		
	Duty		Avg Cond	Limit	
	Cycle (%)		Pwr (dBm)	(dBm)	Results
	44.731		12.29	30	Pass

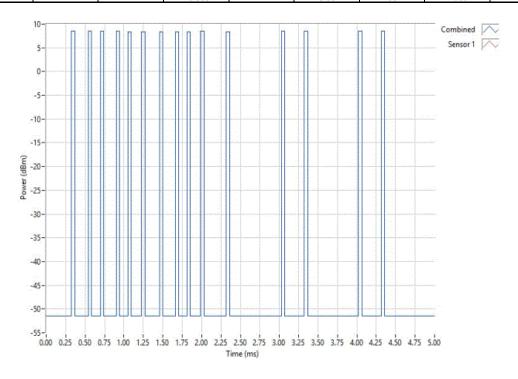




		Low Channel	1, 2412 MHz, 802	2.11(g) 6 Mbps			
	Duty Avg Cond				Limit		
Cycle (%) Pwr (dBm)					(dBm)	Results	
	33.711 10.19					Pass	

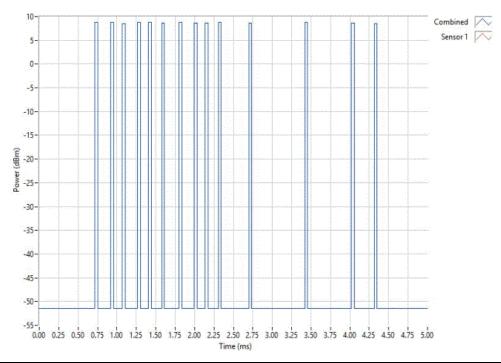


ſ	Low Channel 1	, 2412 MHz, 802	.11(g) 36 Mbps		
I	Duty		Avg Cond	Limit	
ı	 Cycle (%)		Pwr (dBm)	(dBm)	Results
	16.369		8.55	30	Pass

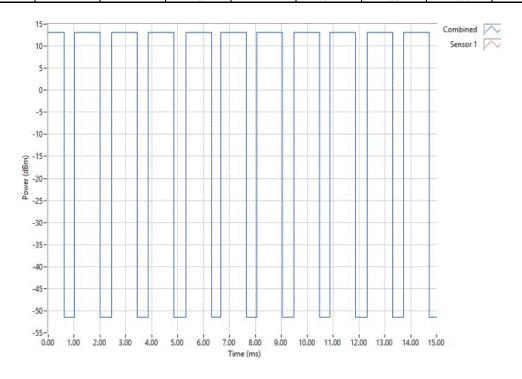




Low Channel 1, 2412 MHz, 802.11(g) 54 Mbps							
Duty Avg Cond Limit							
Cycle (%) Pwr (dBm) (dBm) Results							
13.876 8.84 30 Pass							

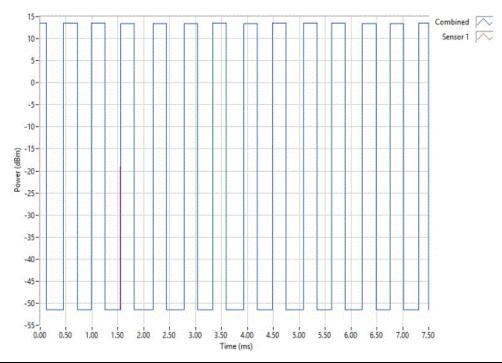


Г			Mid Channel 6	6, 2437 MHz, 802	1.11(b) 1 Mbps			
	Duty Avg Cond Limit							
			Cycle (%)		Pwr (dBm)	(dBm)	Results	_
1			72.571		13.14	30	Pass	1

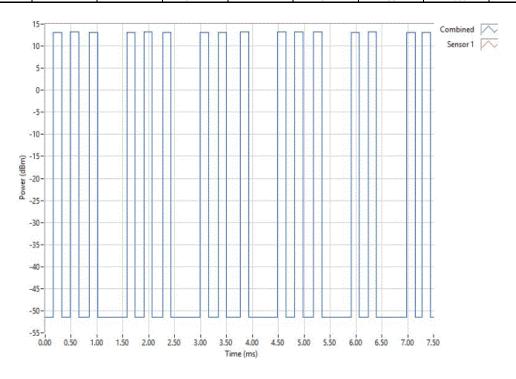




	Mid Channel 6, 2437 MHz, 802.11(b) 11 Mbps							
	Duty Avg Cond Limit							
_			Cycle (%)		Pwr (dBm)	(dBm)	Results	
	48.304 13.49 30 Pass							

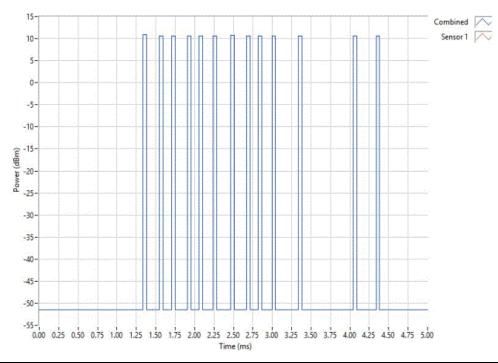


		Mid Channel 6	6, 2437 MHz, 802	1.11(g) 6 Mbps		
Duty Avg Cond Limit						
		Cycle (%)		Pwr (dBm)	(dBm)	Results
		34.27		13.24	30	Pass

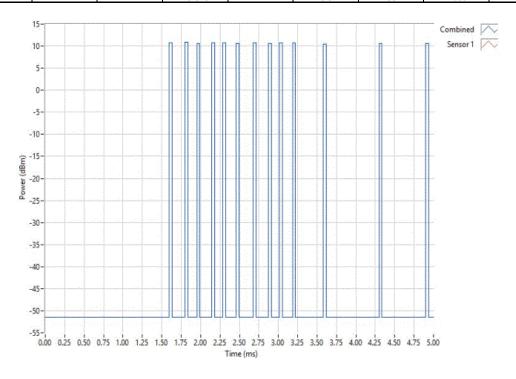




	Mid Channel 6, 2437 MHz, 802.11(g) 36 Mbps							
	Duty Avg Cond Limit							
_	Cycle (%)					(dBm)	Results	
	Cycle (%) Pwr (dBm) (dBm) Results 19.108 10.83 30 Pass							

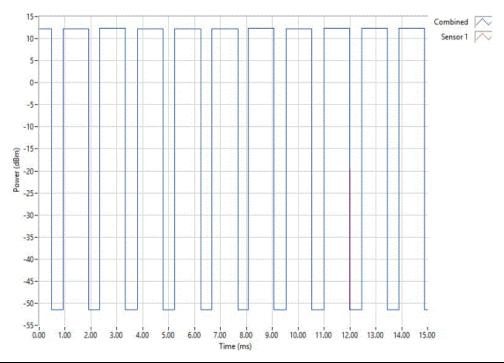


Mid Channel 6, 2437 MHz, 802.11(g) 54 Mbps					
Duty Avg Cond Limit					
	Cycle (%)	Pwr (dBm)	(dBm)	Results	
	15.676	10.82	30	Pass	

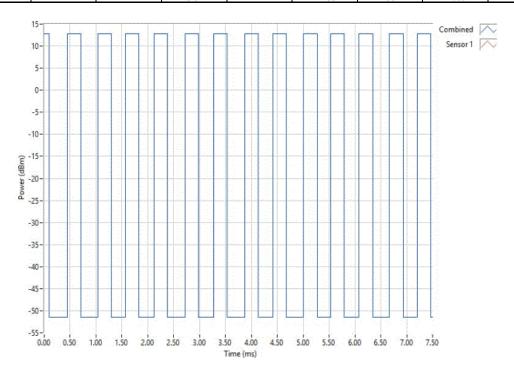




		High Channel 1	11, 2462 MHz, 80	2.11(b) 1 Mbps			
Duty Avg Cond Limit							
		Cycle (%)		Pwr (dBm)	(dBm)	Results	
		71.263		12.32	30	Pass	

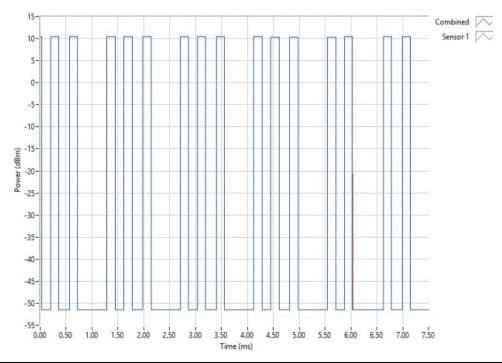


High Channel 11, 2462 MHz, 802.11(b) 11 Mbps						
Duty Avg Cond Limit						
	Cycle (%)	Pwr (dBm)	(dBm)	Results		
	48.921	12.83	30	Pass		

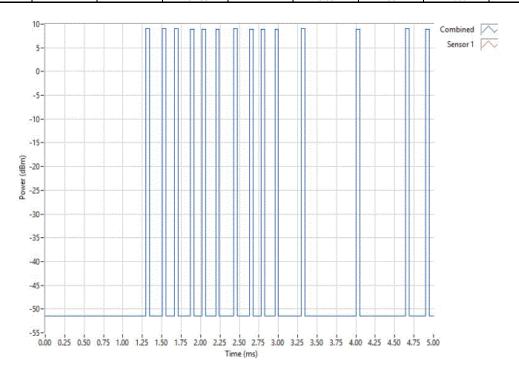




High Channel 11, 2462 MHz, 802.11(g) 6 Mbps							
Duty Avg Cond Limit							
Cycle (%)				Pwr (dBm)	(dBm)	Results	
33.938 10.5 30 Pass							

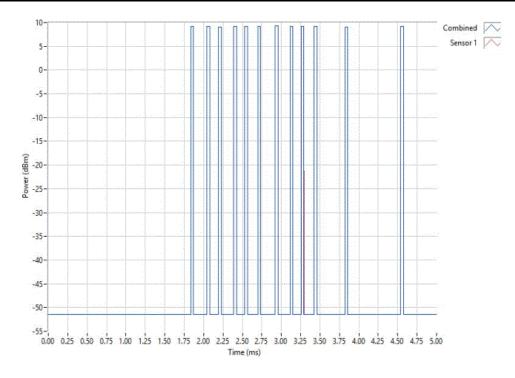


	High Channel 11, 2462 MHz, 802.11(g) 36 Mbps						
	Duty Avg Cond Limit						
	Cycle (%)		Pwr (dBm)	(dBm)	Results		
	16.788		9.09	30	Pass		





	High Channel 11, 2462 MHz, 802.11(g) 54 Mbps							
	Duty Avg Cond Limit							
_			Cycle (%)		Pwr (dBm)	(dBm)	Results	
	19.438 9.29 30					30	Pass	1





XMit 2017.01.26

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.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/2/2016	11/2/2017
Block - DC	Fairview Microwave	SD3379	AMV	1/11/2017	1/11/2018
Attenuator	Fairview Microwave	SA18H-20	TKR	1/5/2017	1/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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



							NweTx 2016.09.14.2	XMit 2017.
	BLED				V		: AWAR0024	
Serial Number:							: 03/20/17	
	Awarepoint Corporation				Te	mperature		
Attendees:							: 48.6% RH	
Project:					Baron		: 1020 mbar	
	Mark Baytan		Power: Ba			Job Site	: OC13	
EST SPECIFICATI	IONS		Te	st Method				
CC 15.247:2017			AN	ISI C63.10:2013				
OMMENTS eference level off	set (DC block + 20 dB atte	nuator + direct connect cable + patch	h cable) = 23.6 dB Poy	ver setting = 0				
	•	mutor + direct connect cubic + putor	11 dable) = 20.0 db. 1 01	voi setting = 0.				
<u>EVIATIONS FROM</u> one	M TEST STANDARD							
one								
onfiguration #	2	Signature	146	3,+				
	-					Value	Limit	
						m/3kHz	< dBm/3kHz	Results
					dE	im/3kHz	< dBm/3kHz	
,	802.11(b) 1 Mbps				dE -	15.869	< dBm/3kHz	Pass
,	802.11(b) 1 Mbps 802.11(b) 11 Mbps				de	15.869 15.138	< dBm/3kHz 8 8	Pass Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps				dB - - -	15.869 15.138 19.974	< dBm/3kHz 8 8 8 8	Pass Pass Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps				dE - - - -	15.869 15.138 19.974 25.074	< dBm/3kHz 8 8 8 8	Pass Pass Pass Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps				dE - - - -	15.869 15.138 19.974	< dBm/3kHz 8 8 8 8	Pass Pass Pass
	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz				dE - - - - -	15.869 15.138 19.974 25.074 26.809	< dBm/3kHz 8 8 8 8 8 8	Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps				dE	15.869 15.138 19.974 25.074 26.809	< dBm/3kHz	Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885	< dBm/3kHz	Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 11 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps				dE - - - - - - -	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531	< dBm/3kHz	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531 23.003	< dBm/3kHz 8 8 8 8 8 8 8 8 8 8	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 Mbps 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531	< dBm/3kHz	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531 23.003 24.249	< dBm/3kHz 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437 gh Channel 11, 24	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 802.11(b) 1 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531 23.003 24.249 16.807	< dBm/3kHz 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437 gh Channel 11, 24	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(b) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 15 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(b) 1 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531 23.003 24.249 16.807	< dBm/3kHz 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Pass Pass Pass Pass Pass Pass Pass Pass
d Channel 6, 2437 gh Channel 11, 24	802.11(b) 1 Mbps 802.11(b) 11 Mbps 802.11(g) 6 Mbps 802.11(g) 6 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 7 MHz 802.11(b) 1 Mbps 802.11(b) 1 Mbps 802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps 802.11(g) 54 Mbps 802.11(b) 1 Mbps				dE	15.869 15.138 19.974 25.074 26.809 14.497 13.885 17.531 23.003 24.249 16.807	< dBm/3kHz 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Pass Pass Pass Pass Pass Pass Pass Pass

Report No. AWAR0024.1

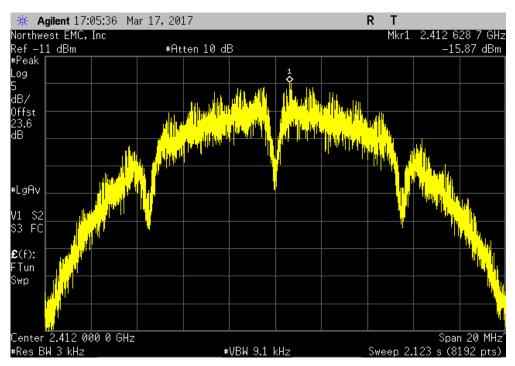


Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps

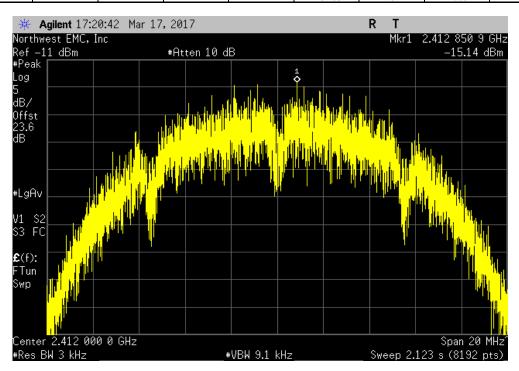
Value Limit

dBm/3kHz < dBm/3kHz Results

-15.869 8 Pass



	Low Channel 1	, 2412 MHz, 802	.11(b) 11 Mbps		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-15.138	8	Pass



Report No. AWAR0024.1 39/78

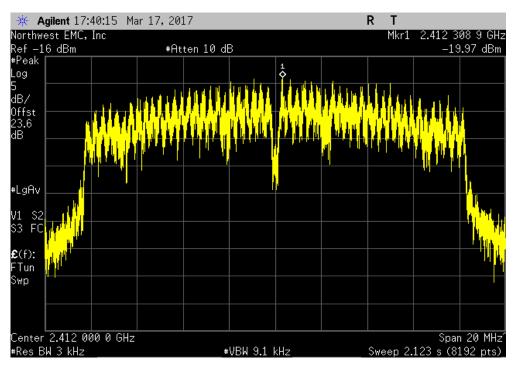


Low Channel 1, 2412 MHz, 802.11(g) 6 Mbps

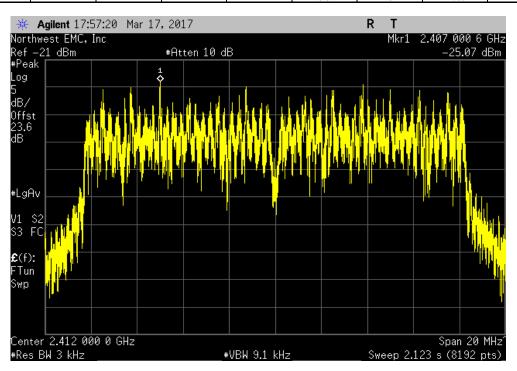
Value Limit

dBm/3kHz < dBm/3kHz Results

-19.974 8 Pass



		Low Channel 1	I, 2412 MHz, 802	.11(g) 36 Mbps		
				Value	Limit	
				dBm/3kHz	< dBm/3kHz	Results
				-25.074	8	Pass



Report No. AWAR0024.1 40/78

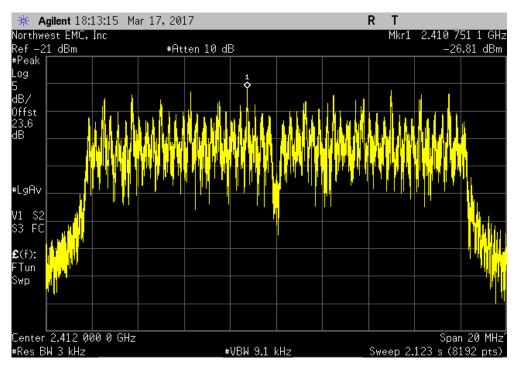


Low Channel 1, 2412 MHz, 802.11(g) 54 Mbps

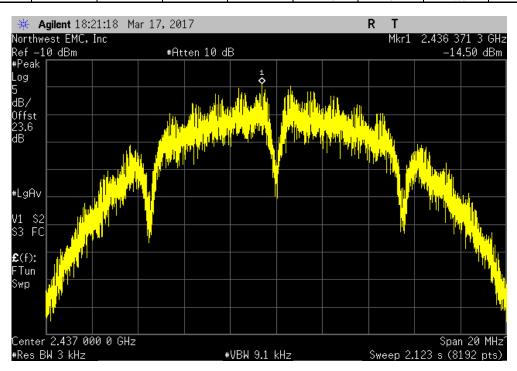
Value Limit

dBm/3kHz < dBm/3kHz Results

-26.809 8 Pass



	Mid Channel	6, 2437 MHz, 802	.11(b) 1 Mbps		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-14.497	8	Pass



Report No. AWAR0024.1 41/78

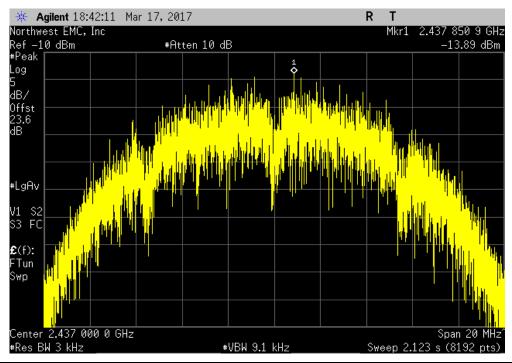


Mid Channel 6, 2437 MHz, 802.11(b) 11 Mbps

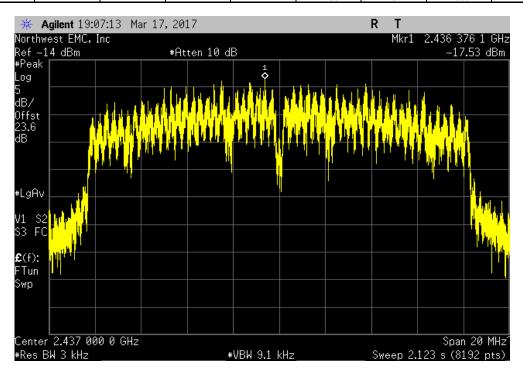
Value Limit

dBm/3kHz < dBm/3kHz Results

-13.885 8 Pass



		Mid Channel	6, 2437 MHz, 802	2.11(g) 6 Mbps		
I				Value	Limit	
ı				dBm/3kHz	< dBm/3kHz	Results
П				-17.531	8	Pass



Report No. AWAR0024.1 42/78

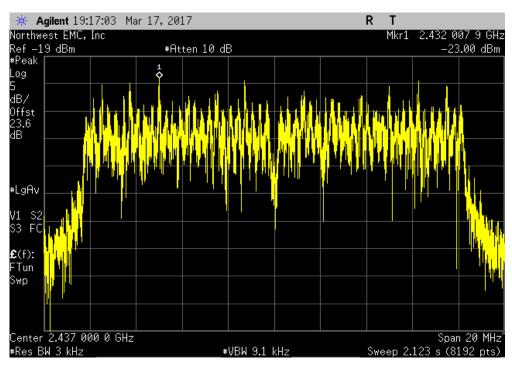


Mid Channel 6, 2437 MHz, 802.11(g) 36 Mbps

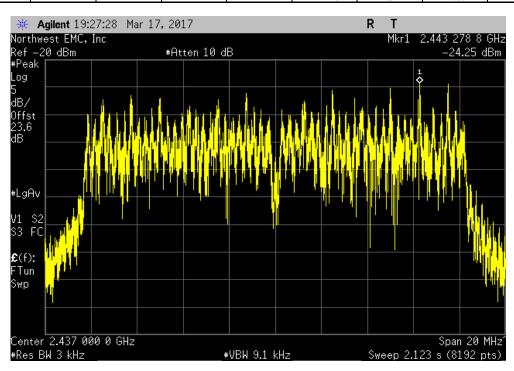
Value Limit

dBm/3kHz < dBm/3kHz Results

-23.003 8 Pass



	Mid Channel 6	6, 2437 MHz, 802.	11(g) 54 Mbps		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-24.249	8	Pass



Report No. AWAR0024.1 43/78

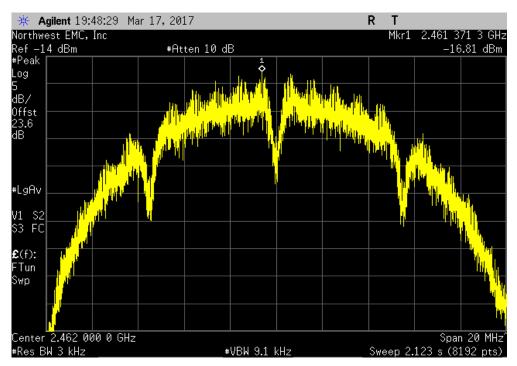


High Channel 11, 2462 MHz, 802.11(b) 1 Mbps

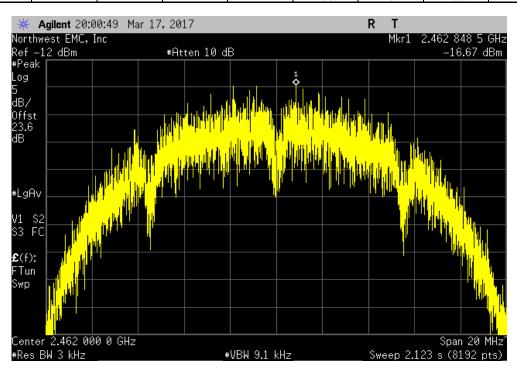
Value Limit

dBm/3kHz < dBm/3kHz Results

-16.807 8 Pass



	High Channel 1	1, 2462 MHz, 802	2.11(b) 11 Mbps		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-16.67	8	Pass



Report No. AWAR0024.1 44/78

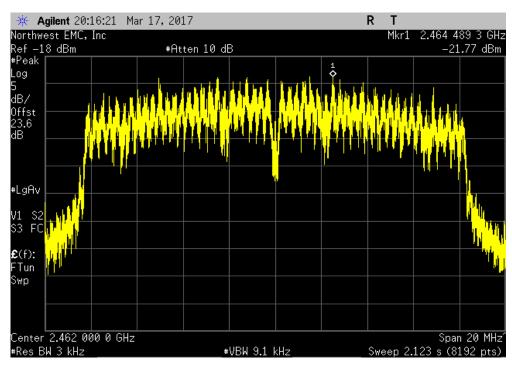


High Channel 11, 2462 MHz, 802.11(g) 6 Mbps

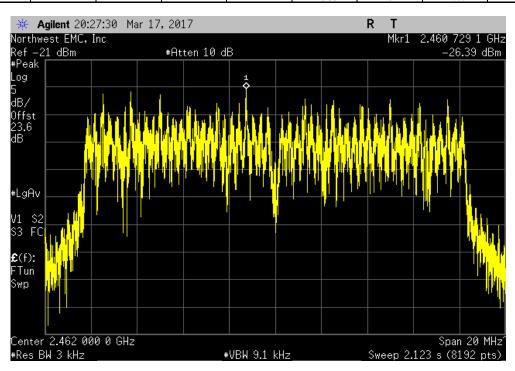
Value Limit

dBm/3kHz < dBm/3kHz Results

-21.773 8 Pass



	High Channel 1	1, 2462 MHz, 802	2.11(g) 36 Mbps		
			Value	Limit	
			dBm/3kHz	< dBm/3kHz	Results
			-26.39	8	Pass



Report No. AWAR0024.1 45/78

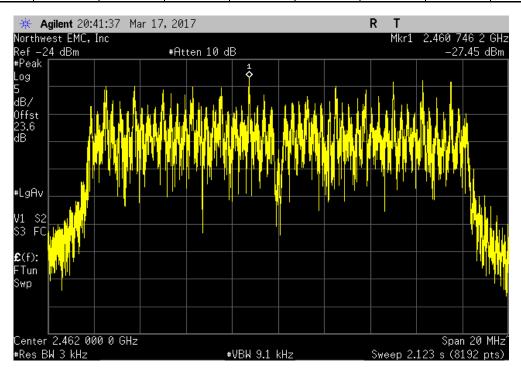


High Channel 11, 2462 MHz, 802.11(g) 54 Mbps

Value Limit

dBm/3kHz < dBm/3kHz Results

-27.453 8 Pass





XMit 2017.01.26

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.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/2/2016	11/2/2017
Block - DC	Fairview Microwave	SD3379	AMV	1/11/2017	1/11/2018
Attenuator	Fairview Microwave	SA18H-20	TKR	1/5/2017	1/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. 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 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.



							NweTx 2016.09.14.2	XMit 2017.01.
	BLED				V		AWAR0024	
Serial Number:							03/20/17	
	Awarepoint Corporation				Te	mperature		
Attendees:							48.6% RH	
Project:					Barom		1020 mbar	
	Mark Baytan		Power:	Battery		Job Site:	OC13	
TEST SPECIFICATI	ONS			Test Method				
FCC 15.247:2017				ANSI C63.10:2013				
,								
COMMENTS								
DEVIATIONS FROM	TEST STANDARD							
None	I ILOI OTANDAND							
Configuration #	2	Signature	MA	3,+				
		•				/alue (dBc)	Limit ≤ (dBc)	Result
ow Channel 1, 241:	2 MHz							
	802.11(b) 1 Mbps					35.87	-30	Pass
	802.11(b) 11 Mbps					34.33	-30	Pass
	802.11(g) 6 Mbps					31.46	-30	Pass
	802.11(g) 36 Mbps					33.18	-30	Pass
	802.11(g) 54 Mbps					34.34	-30	Pass
High Channel 11, 24								
	802.11(b) 1 Mbps					50.19	-30	Pass
	802.11(b) 11 Mbps					48.49	-30	Pass
	802.11(g) 6 Mbps					45.54	-30	Pass
	802.11(g) 36 Mbps					45.93	-30	Pass
	802.11(g) 54 Mbps					45.92	-30	Pass

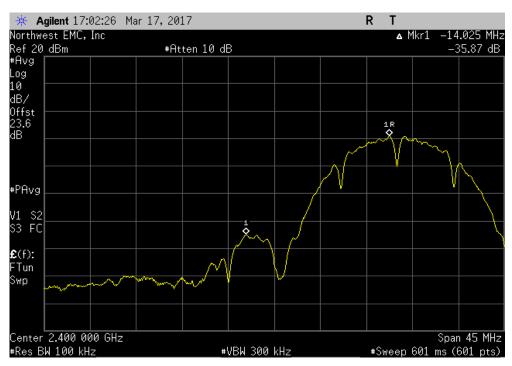
Report No. AWAR0024.1



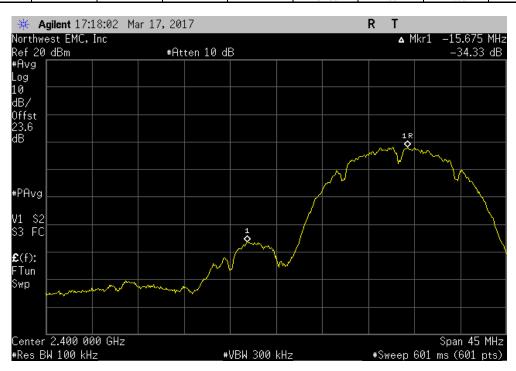
Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps

Value Limit
(dBc) ≤ (dBc) Result

-35.87 -30 Pass



	Low Channel 1	1, 2412 MHz, 802	.11(b) 11 Mbps			
			Value	Limit		
			(dBc)	≤ (dBc)	Result	_
			-34.33	-30	Pass	



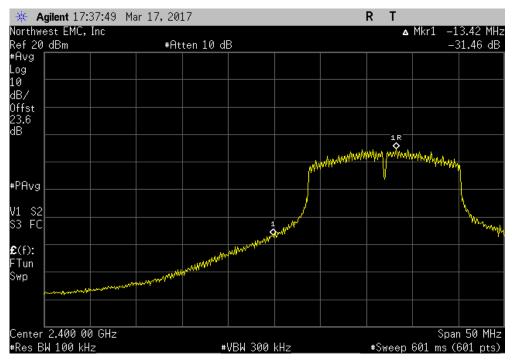
Report No. AWAR0024.1 49/78



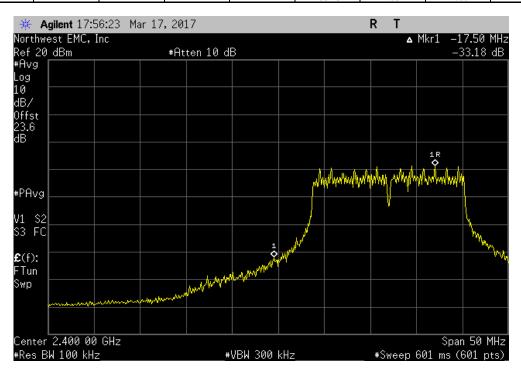
Low Channel 1, 2412 MHz, 802.11(g) 6 Mbps

Value Limit
(dBc) ≤ (dBc) Result

-31.46 -30 Pass



Low Channel 1, 2412 MHz, 802.11(g) 36 Mbps							
				Value	Limit		
				(dBc)	≤ (dBc)	Result	
				-33.18	-30	Pass	



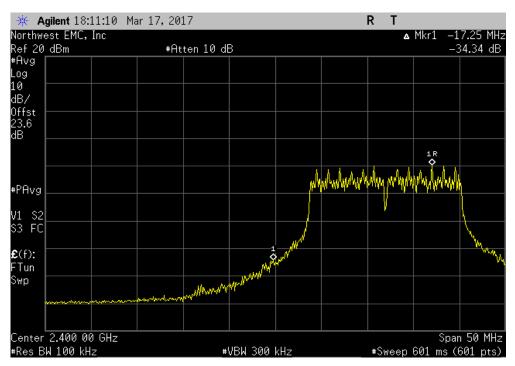
Report No. AWAR0024.1 50/78



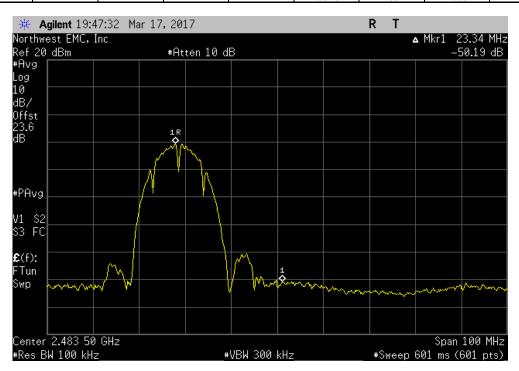
Low Channel 1, 2412 MHz, 802.11(g) 54 Mbps

Value Limit
(dBc) ≤ (dBc) Result

-34.34 -30 Pass



High Channel 11, 2462 MHz, 802.11(b) 1 Mbps							
				Value	Limit		
				(dBc)	≤ (dBc)	Result	
				-50.19	-30	Pass	



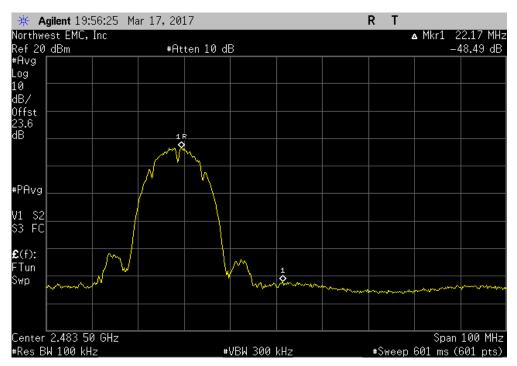
Report No. AWAR0024.1 51/78



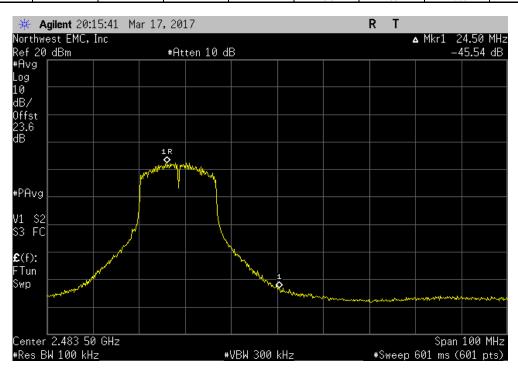
High Channel 11, 2462 MHz, 802.11(b) 11 Mbps

Value Limit
(dBc) ≤ (dBc) Result

-48.49 -30 Pass



	High Channel 11, 2462 MHz, 802.11(g) 6 Mbps							
					Value	Limit		
					(dBc)	≤ (dBc)	Result	
l					-45.54	-30	Pass	



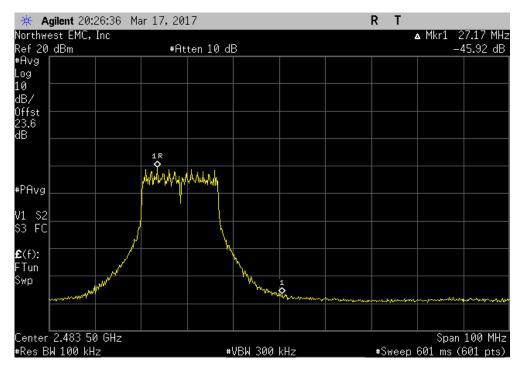
Report No. AWAR0024.1 52/78



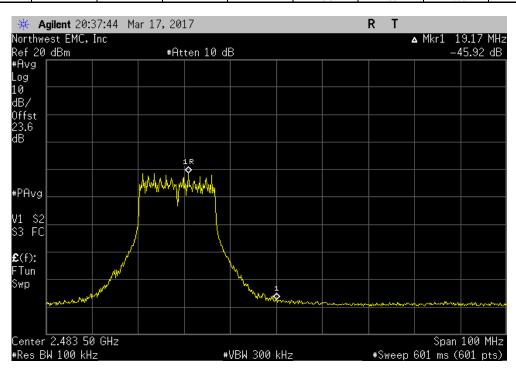
High Channel 11, 2462 MHz, 802.11(g) 36 Mbps

Value Limit
(dBc) ≤ (dBc) Result

-45.93 -30 Pass



High Channel 11, 2462 MHz, 802.11(g) 54 Mbps							
				Value	Limit		
				(dBc)	≤ (dBc)	Result	
				-45.92	-30	Pass	



Report No. AWAR0024.1 53/78



XMit 2017.01.26

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.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/2/2016	11/2/2017
Block - DC	Fairview Microwave	SD3379	AMV	1/11/2017	1/11/2018
Attenuator	Fairview Microwave	SA18H-20	TKR	1/5/2017	1/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. 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.



				NweTx 2016.09.14.2	XMit 201
EUT:	BLED		Work Order:		
Serial Number:			Date:	03/20/17	
	Awarepoint Corporation		Temperature:		
Attendees:			Humidity:		
Project:			Barometric Pres.:		
Tested by:	Mark Baytan	Power: Battery	Job Site:	OC13	
EST SPECIFICATI	IONS	Test Method			
CC 15.247:2017		ANSI C63.10:2013			
OMMENTS					
Reference level off	set (DC block + 20 dB attenuat	or + direct connect cable + patch cable) = 23.6 dB. Power setting = 0.			
	•	, ,			
=: // . =: 0.10					
<u>EVIATIONS FROM</u> one	M TEST STANDARD				
one					
Configuration #	2	Signature ALA Syt			
		olgridatio			
		Frequency	Max Value	Limit	
ow Channel 1, 2412	2 M⊔-	Range	(dBc)	≤ (dBc)	Result
w Channel 1, 241.	802.11(b) 1 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 1 Mbps	30 MHz - 12.5 GHz	-48.33	-30	Pass
	802.11(b) 1 Mbps	12.5 GHz - 25 GHz	-46.33 -49.58	-30	Pass
	802.11(b) 11 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 11 Mbps	30 MHz - 12.5 GHz	-50.18	-30	Pass
	802.11(b) 11 Mbps	12.5 GHz - 25 GHz	-51.64	-30	Pass
	802.11(g) 6 Mbps	Fundamental	-51.64 N/A	N/A	N/A
	802.11(g) 6 Mbps	30 MHz - 12.5 GHz	-48.38	-30	Pass
	802.11(g) 6 Mbps	12.5 GHz - 25 GHz	-48.26	-30	Pass
		12.5 GHZ - 25 GHZ Fundamental	-48.26 N/A	-30 N/A	Pass N/A
	802.11(g) 36 Mbps				
	802.11(g) 36 Mbps	30 MHz - 12.5 GHz	-48.17	-30	Pass
	802.11(g) 36 Mbps	12.5 GHz - 25 GHz	-44.8	-30	Pass
	802.11(g) 54 Mbps	Fundamental	N/A	N/A	N/A
	802.11(g) 54 Mbps	30 MHz - 12.5 GHz	-39.31	-30	Pass
	802.11(g) 54 Mbps	12.5 GHz - 25 GHz	-42.91	-30	Pass
id Channel 6, 2437			N1/A	N1/A	
	802.11(b) 1 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 1 Mbps	30 MHz - 12.5 GHz	-48.35	-30	Pass
	802.11(b) 1 Mbps	12.5 GHz - 25 GHz	-50.69	-30	Pass
	802.11(b) 11 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 11 Mbps	30 MHz - 12.5 GHz	-49.87	-30	Pass
	802.11(b) 11 Mbps	12.5 GHz - 25 GHz	-52.59	-30	Pass
	802.11(g) 6 Mbps	Fundamental	N/A	N/A	N/A
	802.11(g) 6 Mbps	30 MHz - 12.5 GHz	-50.08	-30	Pass
	802.11(g) 6 Mbps	12.5 GHz - 25 GHz	-50.6	-30	Pass
	802.11(g) 36 Mbps	Fundamental	N/A	N/A	N/A
	802.11(g) 36 Mbps	30 MHz - 12.5 GHz	-49.9	-30	Pass
	802.11(g) 36 Mbps	12.5 GHz - 25 GHz	-46.91	-30	Pass
	802.11(g) 54 Mbps	Fundamental	N/A	N/A	N/A
	802.11(g) 54 Mbps	30 MHz - 12.5 GHz	-44.14	-30	Pass
	802.11(g) 54 Mbps	12.5 GHz - 25 GHz	-45.88	-30	Pass
gh Channel 11, 24		For description	NI/A	N1/A	N 1/A
	802.11(b) 1 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 1 Mbps	30 MHz - 12.5 GHz	-48.37	-30	Pass
	802.11(b) 1 Mbps	12.5 GHz - 25 GHz	-48.29	-30	Pass
	802.11(b) 11 Mbps	Fundamental	N/A	N/A	N/A
	802.11(b) 11 Mbps	30 MHz - 12.5 GHz	-49.96	-30	Pass
	802.11(b) 11 Mbps	12.5 GHz - 25 GHz	-49.83	-30	Pass
	802.11(g) 6 Mbps	Fundamental	N/A	N/A	N/A
		30 MHz - 12.5 GHz	-48.37	-30	Pass
	802.11(g) 6 Mbps				Pass
	802.11(g) 6 Mbps	12.5 GHz - 25 GHz	-46.55	-30	
	802.11(g) 6 Mbps 802.11(g) 36 Mbps	12.5 GHz - 25 GHz Fundamental	N/A	N/A	N/A
	802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps	12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz	N/A -38.11	N/A -30	N/A Pass
	802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps	12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	N/A -38.11 -43.66	N/A -30 -30	N/A Pass Pass
	802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 54 Mbps	12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental	N/A -38.11 -43.66 N/A	N/A -30 -30 N/A	N/A Pass Pass N/A
	802.11(g) 6 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps 802.11(g) 36 Mbps	12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	N/A -38.11 -43.66	N/A -30 -30	N/A Pass Pass

Report No. AWAR0024.1 55/78



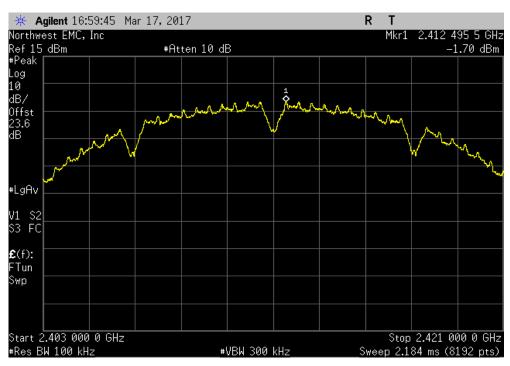
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 Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps

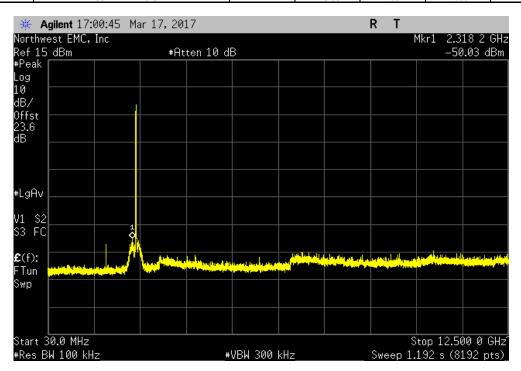
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 Fundamental
 N/A
 N/A
 N/A



Low Channel 1	1, 2412 MHz, 802.11(b) 1 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-48.33	-30	Pass



Report No. AWAR0024.1

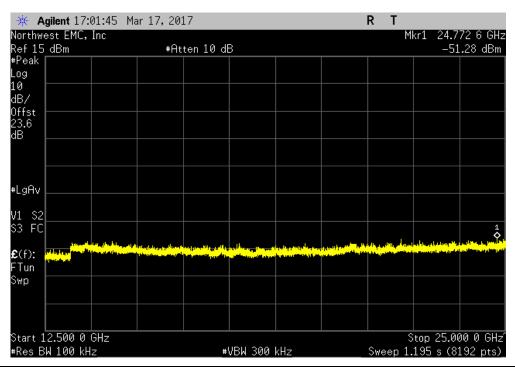


 Low Channel 1, 2412 MHz, 802.11(b) 1 Mbps

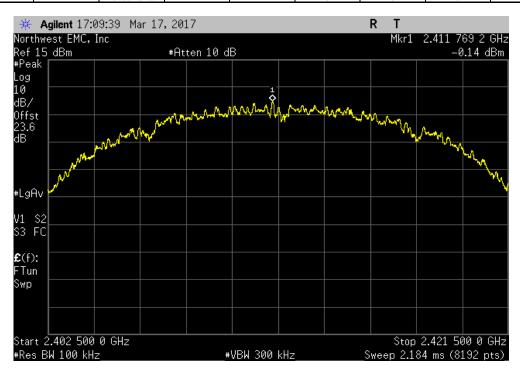
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -49.58
 -30
 Pass



	Low Channel 1, 2412 MHz, 802.	11(b) 11 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A



Report No. AWAR0024.1 57/78



Low Channel 1, 2412 MHz, 802.11(b) 11 Mbps

Frequency

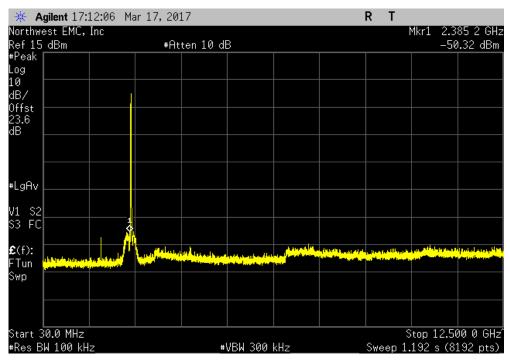
Range
(dBc)

30 MHz - 12.5 GHz

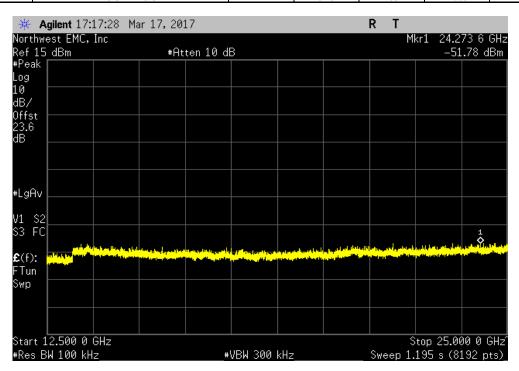
-50.18

-30

Pass



	Low Channel 1, 2412 MHz,	802.11(b) 11 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz	z	-51.64	-30	Pass



Report No. AWAR0024.1 58/78

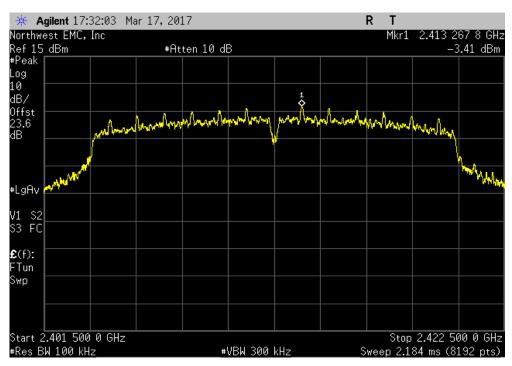


 Low Channel 1, 2412 MHz, 802.11(g) 6 Mbps

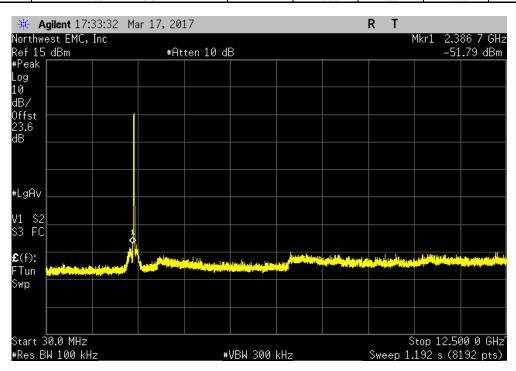
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 Fundamental
 N/A
 N/A
 N/A



Low Channel 1,	, 2412 MHz, 802.11(g) 6 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-48.38	-30	Pass



Report No. AWAR0024.1 59/78

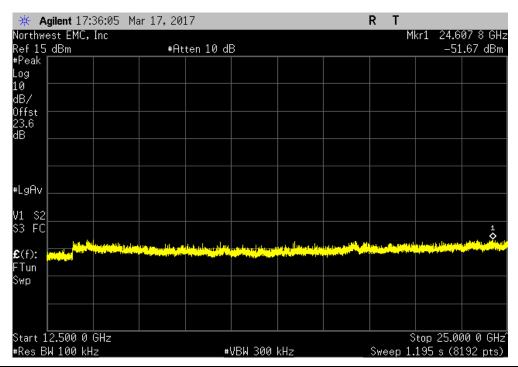


 Low Channel 1, 2412 MHz, 802.11(g) 6 Mbps

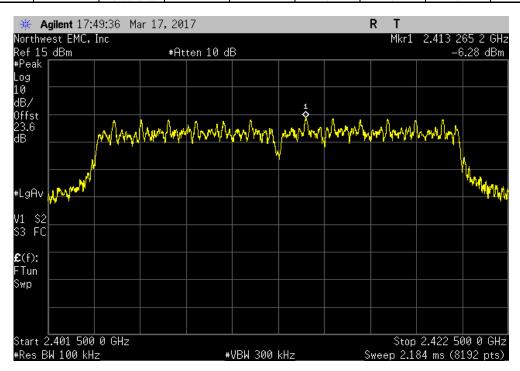
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -48.26
 -30
 Pass

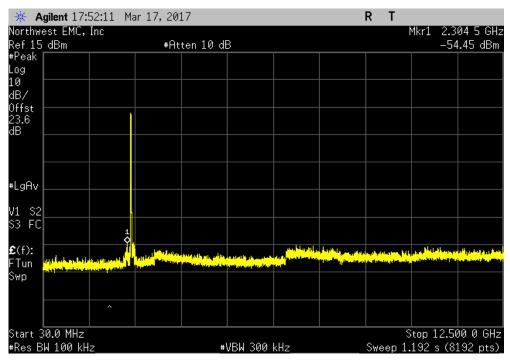


Low Channel 1,	2412 MHz, 802.11(g) 36 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A

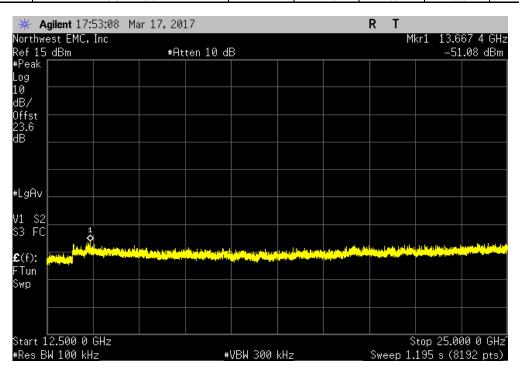


Report No. AWAR0024.1 60/78





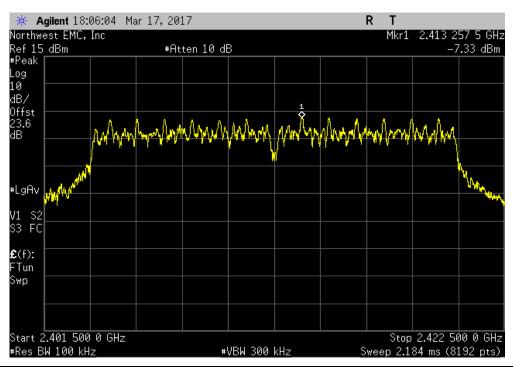
	Low Channel 1, 2412 MHz	z, 802.11(g) 36 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GH	z	-44.8	-30	Pass



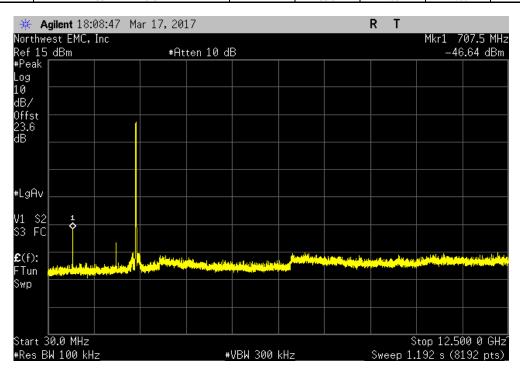
Report No. AWAR0024.1 61/78



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



Low Channel 1, 2412	2 MHz, 802.11(g) 54 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-39.31	-30	Pass



Report No. AWAR0024.1 62/78

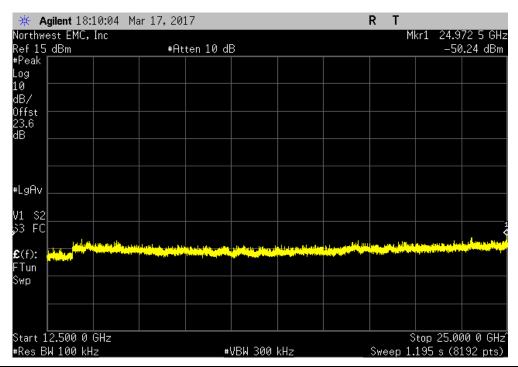


 Low Channel 1, 2412 MHz, 802.11(g) 54 Mbps

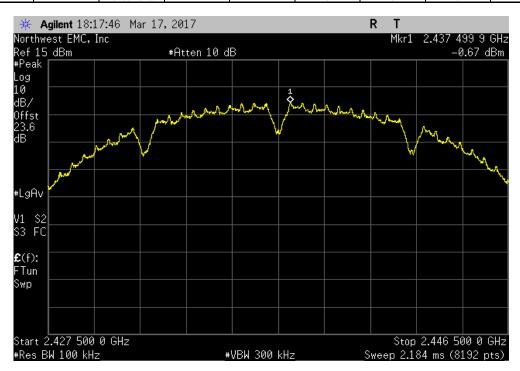
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -42.91
 -30
 Pass



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



Report No. AWAR0024.1 63/78

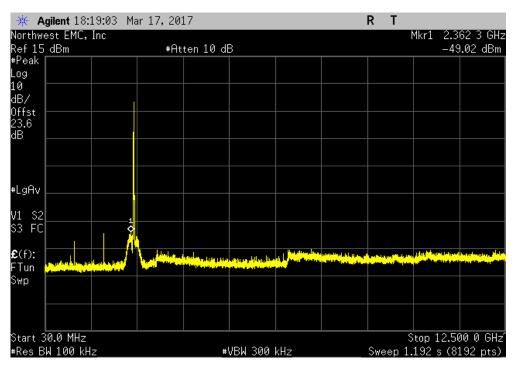


 Mid Channel 6, 2437 MHz, 802.11(b) 1 Mbps

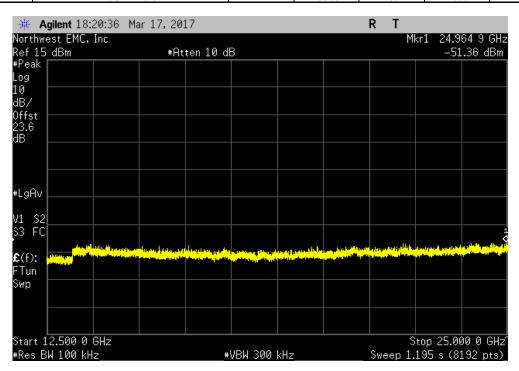
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 30 MHz - 12.5 GHz
 -48.35
 -30
 Pass

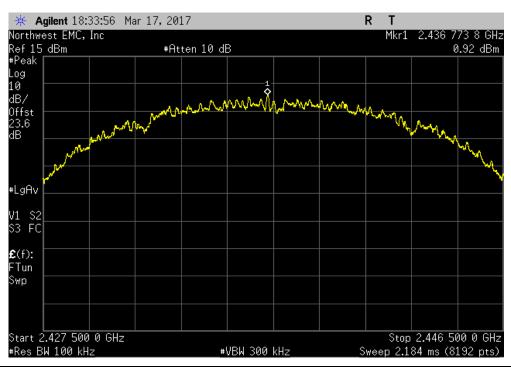


	Mid Channel 6, 2437 MHz,	802.11(b) 1 Mbps		
Frequen	ncy	Max Value	Limit	
Range	9	(dBc)	≤ (dBc)	Result
12.5 GHz - 2	25 GHz	-50.69	-30	Pass

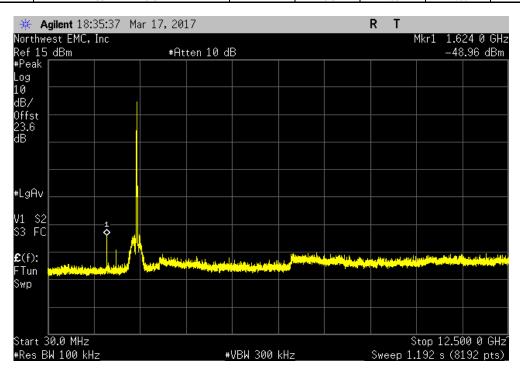


Report No. AWAR0024.1 64/78





Mid Channel 6, 2437	MHz, 802.11(b) 11 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-49.87	-30	Pass



Report No. AWAR0024.1 65/78

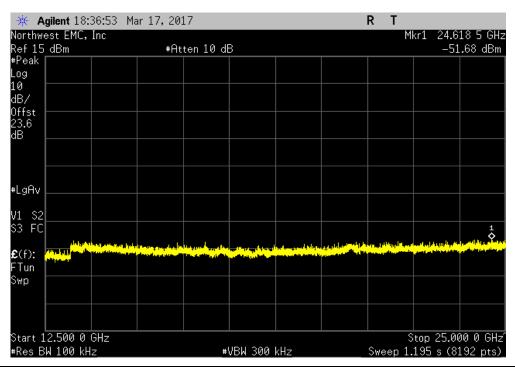


 Mid Channel 6, 2437 MHz, 802.11(b) 11 Mbps

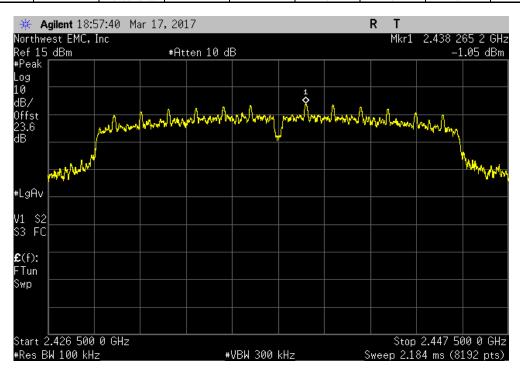
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -52.59
 -30
 Pass



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



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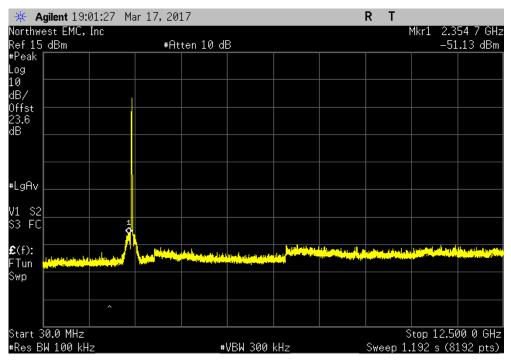


 Mid Channel 6, 2437 MHz, 802.11(g) 6 Mbps

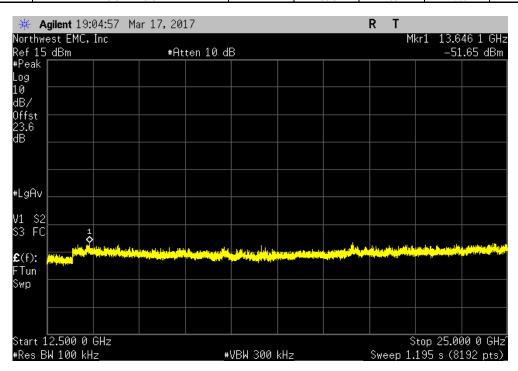
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 30 MHz - 12.5 GHz
 -50.08
 -30
 Pass



	Mid Channel (6, 2437 MHz, 802	2.11(g) 6 Mbps		
	Frequency		Max Value	Limit	
	Range		(dBc)	≤ (dBc)	Result
1:	2.5 GHz - 25 GHz		-50.6	-30	Pass



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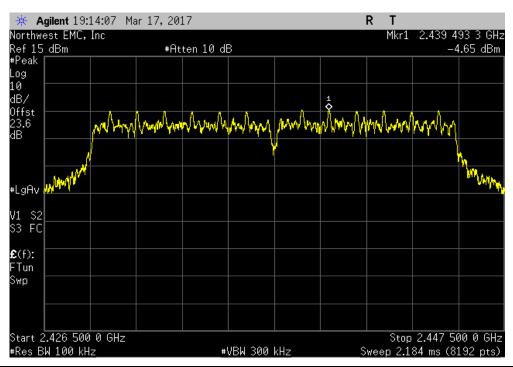


 Mid Channel 6, 2437 MHz, 802.11(g) 36 Mbps

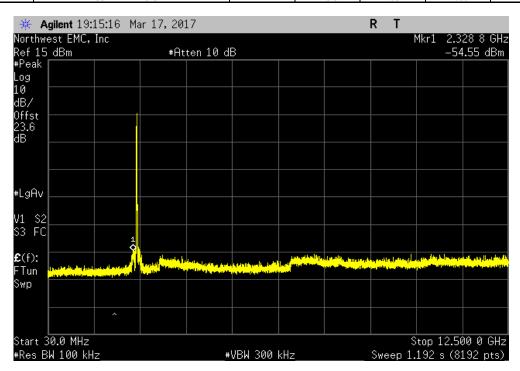
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 Fundamental
 N/A
 N/A
 N/A



Mid Channel 6, 2437	MHz, 802.11(g) 36 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-49.9	-30	Pass



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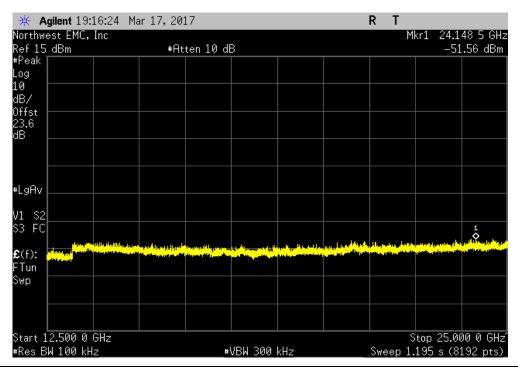


 Mid Channel 6, 2437 MHz, 802.11(g) 36 Mbps

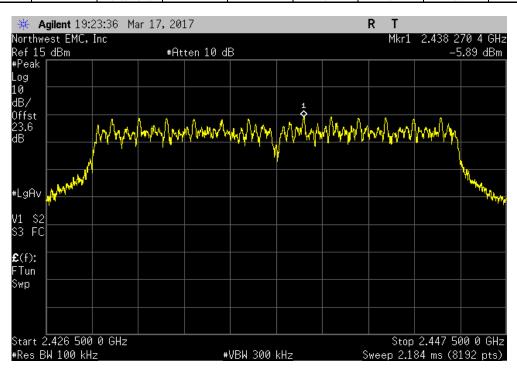
 Frequency
 Max Value
 Limit

 Range
 (dBc)
 ≤ (dBc)
 Result

 12.5 GHz - 25 GHz
 -46.91
 -30
 Pass

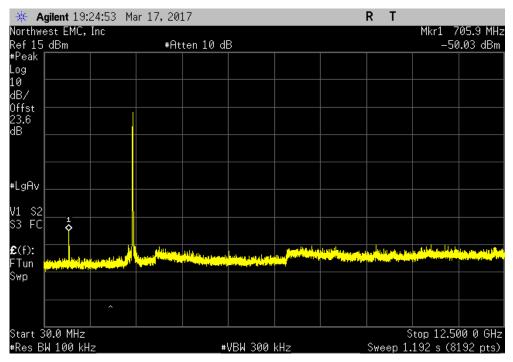


Mid Channel 6,	2437 MHz, 802.11(g) 54 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
Fundamental	N/A	N/A	N/A

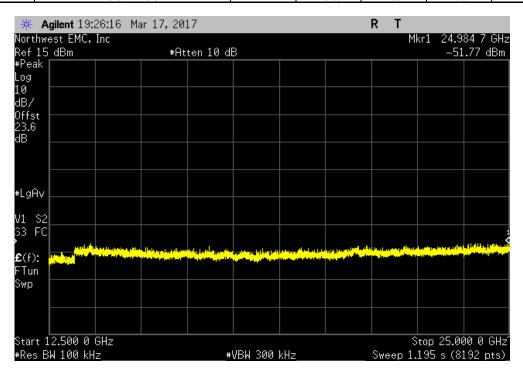


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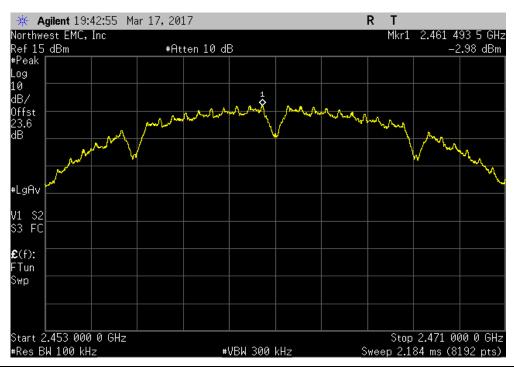
	Mid Channel 6, 2437 MHz, 8	302.11(g) 54 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-45.88	-30	Pass



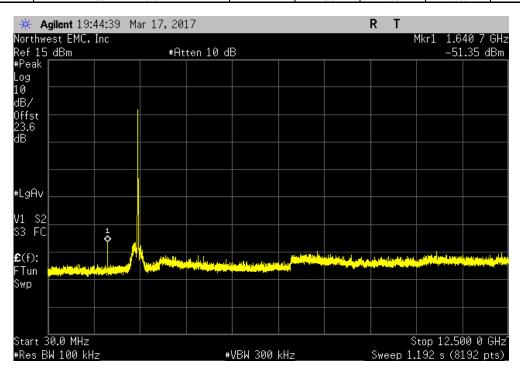
Report No. AWAR0024.1 70/78



| High Channel 11, 2462 MHz, 802.11(b) 1 Mbps | | Frequency | Max Value | Limit | Range | (dBc) | ≤ (dBc) | Result | Fundamental | N/A | N/A | N/A | N/A |



High Channel 1	1, 2462 MHz, 802.11(b) 1 Mbps			
Frequency	Max Value	Limit		
Range	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	-48.37	-30	Pass	Ĩ



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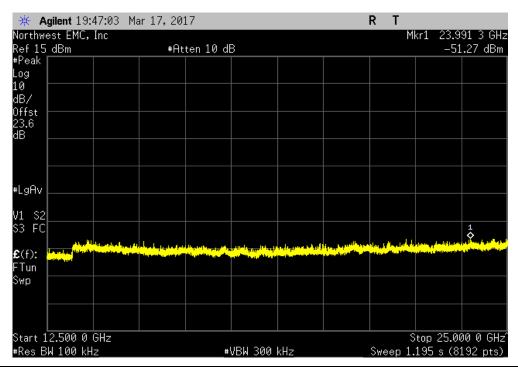


High Channel 11, 2462 MHz, 802.11(b) 1 Mbps

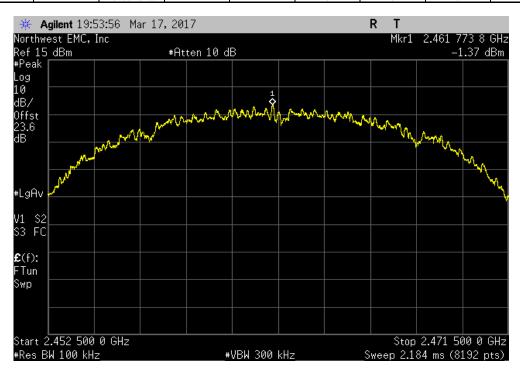
Frequency Max Value Limit

Range (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz - 48.29 -30 Pass



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



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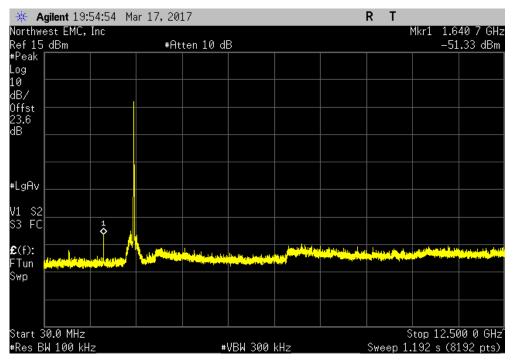


High Channel 11, 2462 MHz, 802.11(b) 11 Mbps

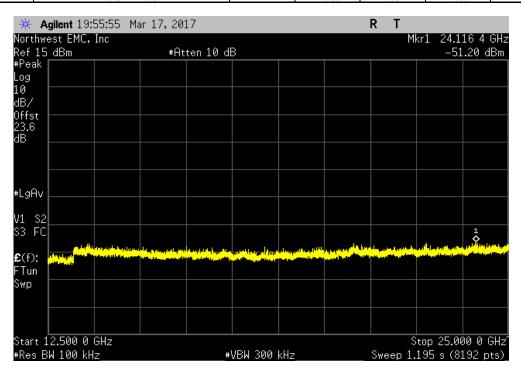
Frequency Max Value Limit

Range (dBc) ≤ (dBc) Result

30 MHz - 12.5 GHz -49.96 -30 Pass



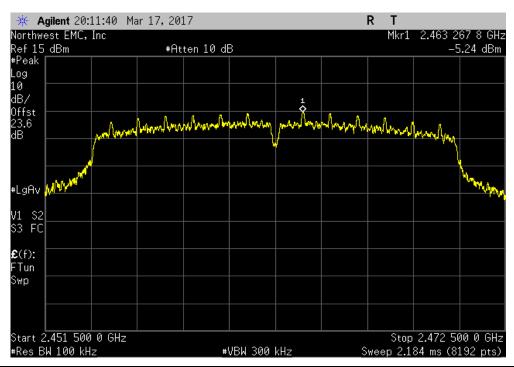
	High Channel 11, 2462 MHz	802.11(b) 11 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz	z	-49.83	-30	Pass



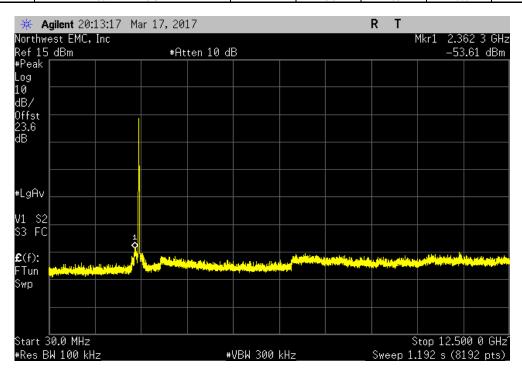
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| High Channel 11, 2462 MHz, 802.11(g) 6 Mbps | Frequency | Max Value | Limit | Range | (dBc) | ≤ (dBc) | Result | Fundamental | N/A | N/A | N/A | N/A |



High Channel 11, 2	462 MHz, 802.11(g) 6 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-48.37	-30	Pass



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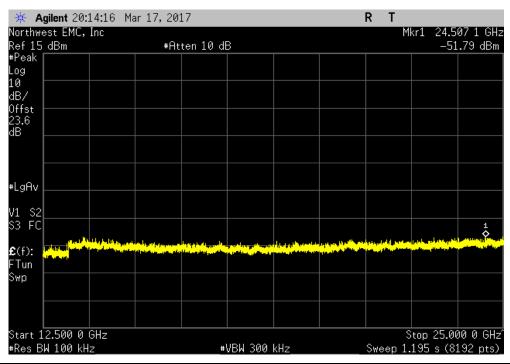


High Channel 11, 2462 MHz, 802.11(g) 6 Mbps

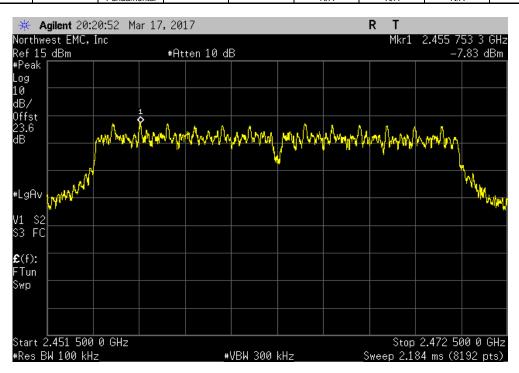
Frequency Max Value Limit

Range (dBc) ≤ (dBc) Result

12.5 GHz - 25 GHz - 46.55 -30 Pass

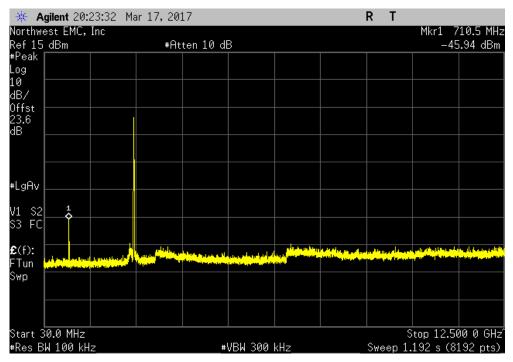


	High Channel 11, 2462 MHz, 80.	2.11(g) 36 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
Fundamental		N/A	N/A	N/A

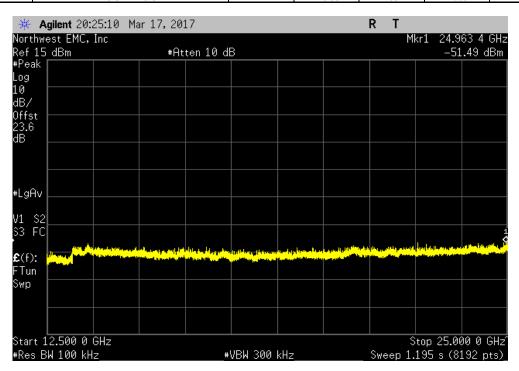


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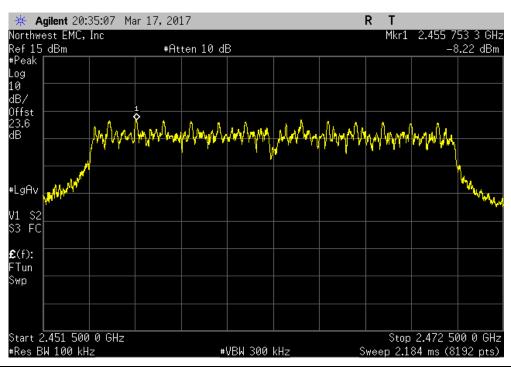


	High Channel 11, 2462 MHz	, 802.11(g) 36 Mbps		
Frequency		Max Value	Limit	
Range		(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GHz		-43.66	-30	Pass

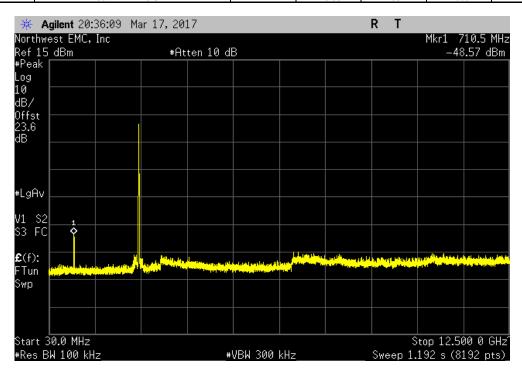


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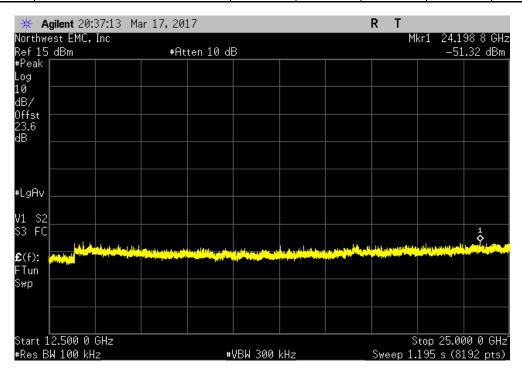


High Channel 11, 2	2462 MHz, 802.11(g) 54 Mbps		
Frequency	Max Value	Limit	
Range	(dBc)	≤ (dBc)	Result
30 MHz - 12.5 GHz	-40.35	-30	Pass



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