



Summit Semiconductor, LLC

444-2250

FCC 15.247:2014

FCC 15.207:2014

Report #: FOCU0168.3



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

Last Date of Test: June 18, 2014
Summit Semiconductor, LLC
Model: 444-2250

Emissions

Test Description	Specification	Test Method	Pass/Fail
Duty Cycle	FCC 15.247:2014	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2014	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2014	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2014	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2014	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:



Kyle Holgate, Operations Manager



NVLAP Lab Code: 200630-0

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

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

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

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

KCC / 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.

Hong Kong

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

Vietnam

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

Russia

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

SCOPE

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

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

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.

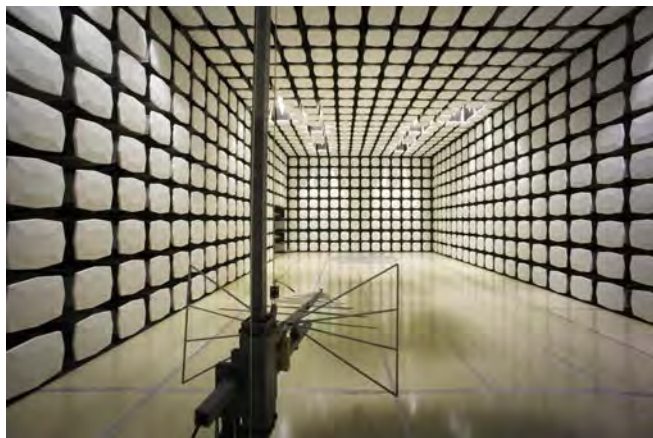
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is listed below. Our measurement 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 16-4-1 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)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94	-2.94



Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	Minnesota Labs MN01-08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	Washington Labs NC01-05, SU02, SU07 19201 120 th Ave. NE Bothell, WA 98011 (425) 984-6600
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-2	2834B-1, 2834B-2, 2834B-3		2834E-1	2834F-1
NVLAP				
NVLAP Lab Code: 200630-0	NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200629-0



Client and Equipment Under Test (EUT) Information

Company Name:	Summit Semiconductor LLC
Address:	22867 NW Bennett St, Suite 200
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Paul Hamilton
Model:	444-2250
First Date of Test:	June 13, 2014
Last Date of Test:	June 18, 2014
Receipt Date of Samples:	June 11, 2014
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
Client device, it has 4 antennas with diversity, there is only one radio (no monitor), the channel bandwidth is 20 MHz
Testing Objective:
To demonstrate compliance under FCC 15.247 for operation in the 5.8 GHz band.

Configuration FOCU0168- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Digital Wireless Client Module	Summit Semiconductor LLC	444-2250	02EA310000BA

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Supply	Condor	SA-183A61V	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power Cable	No	.9m	No	AC/DC Adapter	AC Mains
DC Power Cable	No	1.2m	Yes	AC/DC Adapter	Digital Wireless Client Module
USB to Serial Adapter	Yes	1m	No	Remote Laptop	Digital Wireless Client Module

Configuration FOCU0168- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Digital Wireless Client Module	Summit Semiconductor LLC	444-2250	02EA41000011

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop	Dell	Inspiron	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power Cable	No	.9m	No	AC/DC Adapter	AC Mains
DC Power Cable	No	1.2m	Yes	AC/DC Adapter	Digital Wireless Client Module
USB to Serial Adapter	Yes	1m	No	Remote Laptop	Digital Wireless Client Module

Configuration FOCU0168- 3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Digital Wireless Client Module	Summit Semiconductor LLC	444-2250	02EA310000BA

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power Cable	No	.9m	No	AC/DC Adapter	AC Mains
DC Power Cable	No	1.2m	Yes	AC/DC Adapter	Digital Wireless Client Module
USB to Serial Adapter	Yes	1m	No	Remote Laptop	Digital Wireless Client Module

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	6/13/2014	AC 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.
2	6/13/2014	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.
3	6/13/2014	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	6/13/2014	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	6/13/2014	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.
6	6/13/2014	Spurious 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.
7	6/13/2014	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.
8	6/18/2014	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

DUTY CYCLE

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 (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

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.

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 was used during some of the other tests in this report to only measure during the burst duration.



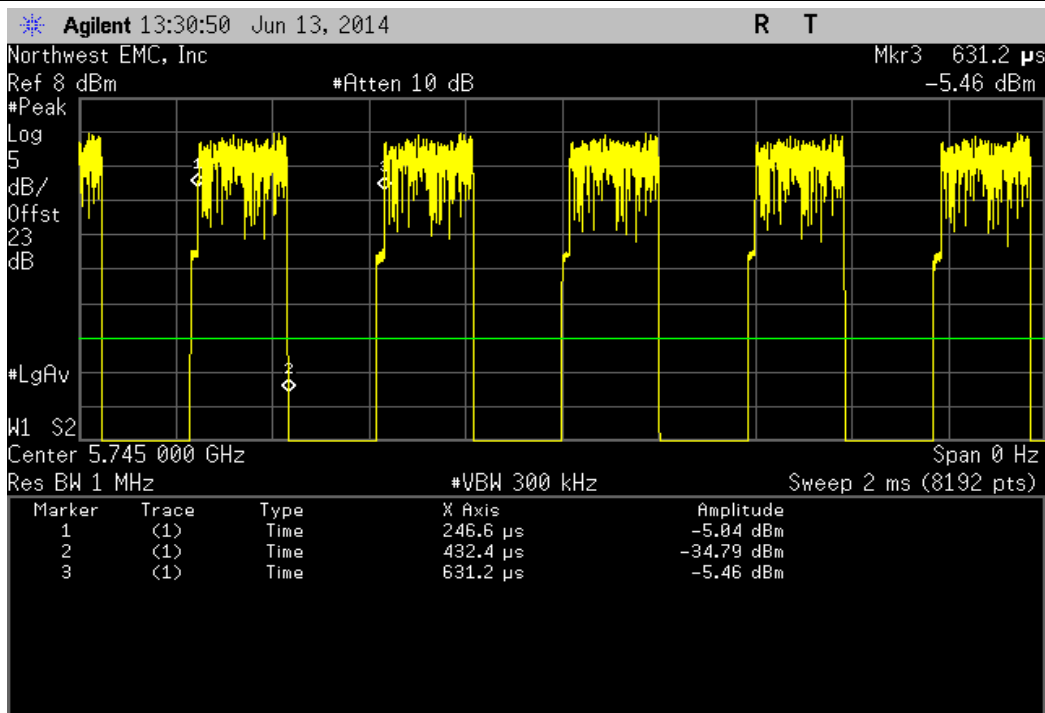
DUTY CYCLE

XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168					
Serial Number: 02EA41000011		Date: 06/13/14					
Customer: Summit Semiconductor LLC		Temperature: 22.5°C					
Attendees: None		Humidity: 43%					
Project: None		Barometric Pres.: 1019					
Tested by: Jared Ison		Power: 18 VDC					
Job Site: EV06							
TEST SPECIFICATIONS							
FCC 15.247:2014		Test Method					
		ANSI C63.10:2009					
COMMENTS							
Test was performed on the antenna port that produced the highest output power.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	2	Signature 					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
Antenna Port 1							
5725 MHz - 5850 MHz Band							
802.11(a) 6 Mbps							
	Low Channel 149, 5745 MHz	185.8 uS	384.6 uS	1	48.3	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	185.6 uS	384.6 uS	1	48.3	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	185.6 uS	384.6 uS	1	48.3	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 18 Mbps							
	Low Channel 149, 5745 MHz	73.2 uS	272.5 uS	1	26.9	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	73.5 uS	272.5 uS	1	27	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	73.5 uS	282.1 uS	1	26.1	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps							
	Low Channel 149, 5745 MHz	57.4 uS	256.6 uS	1	22.4	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	57.2 uS	256.4 uS	1	22.3	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	57.1 uS	266.1 uS	1	21.5	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A

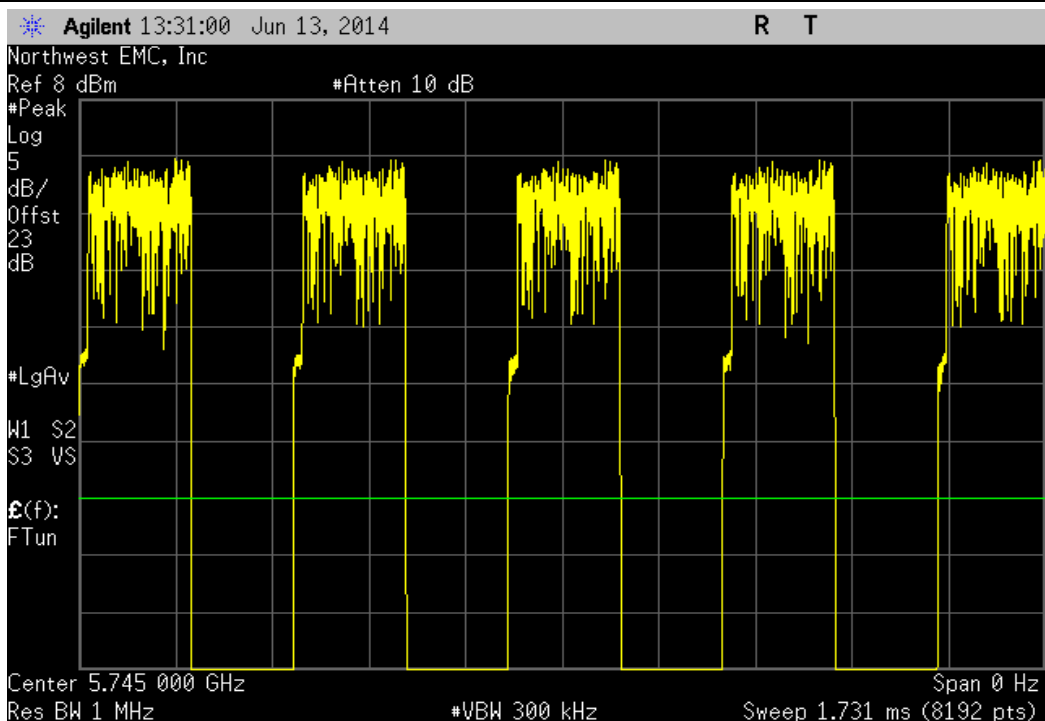
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
185.8 uS	384.6 uS	1	48.3	N/A	N/A



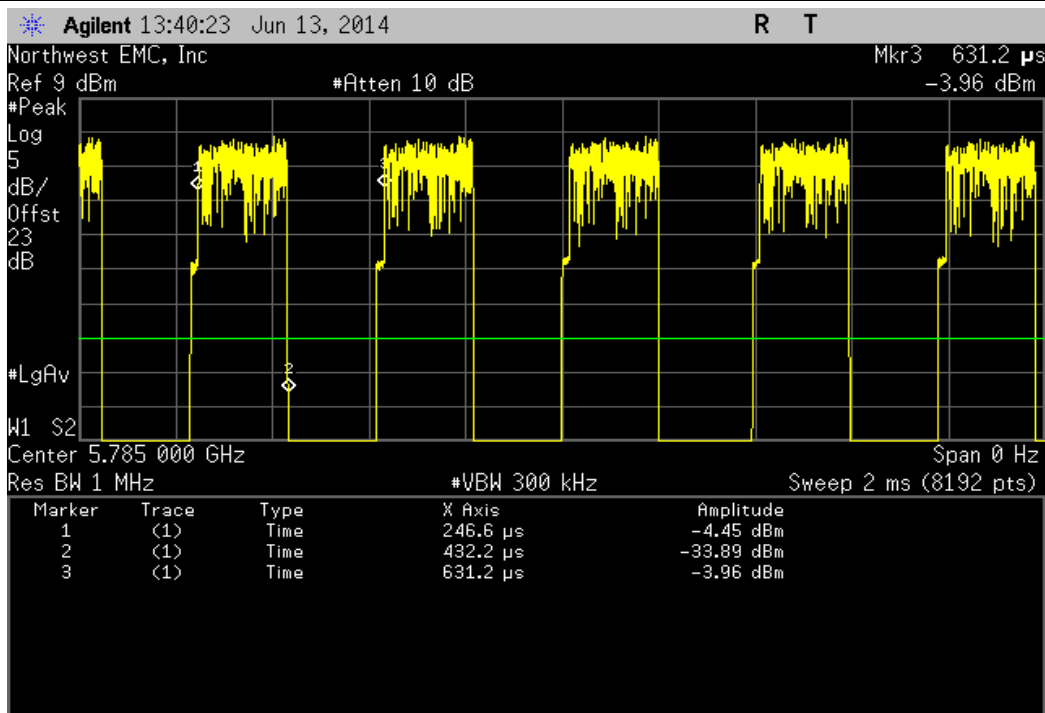
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



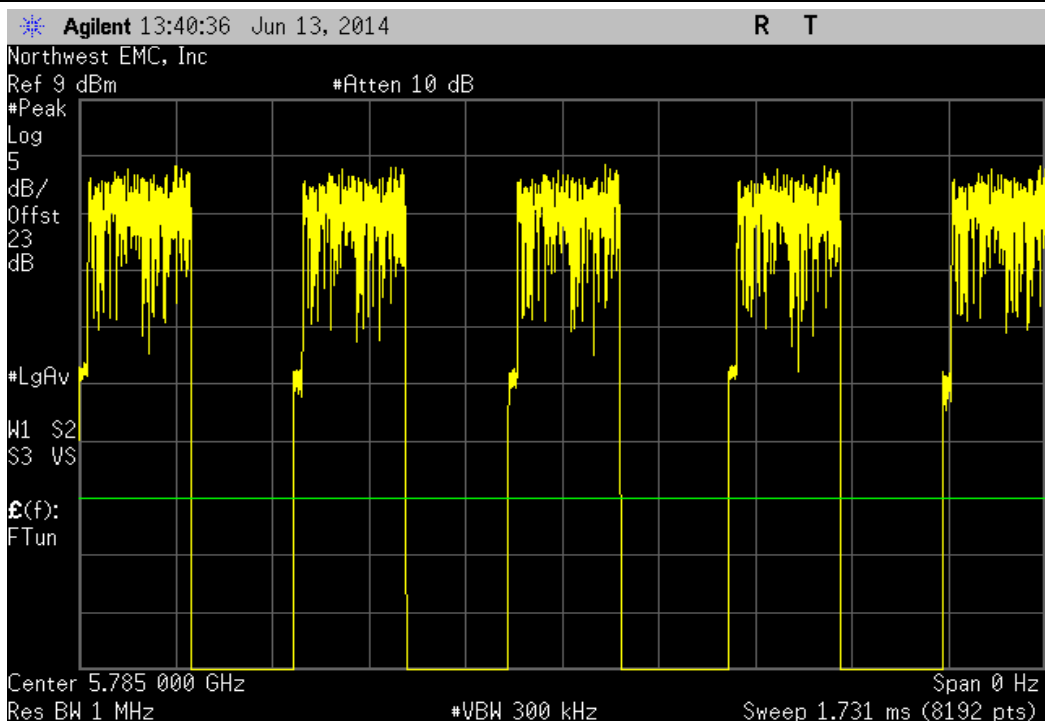
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
185.6 uS	384.6 uS	1	48.3	N/A	N/A

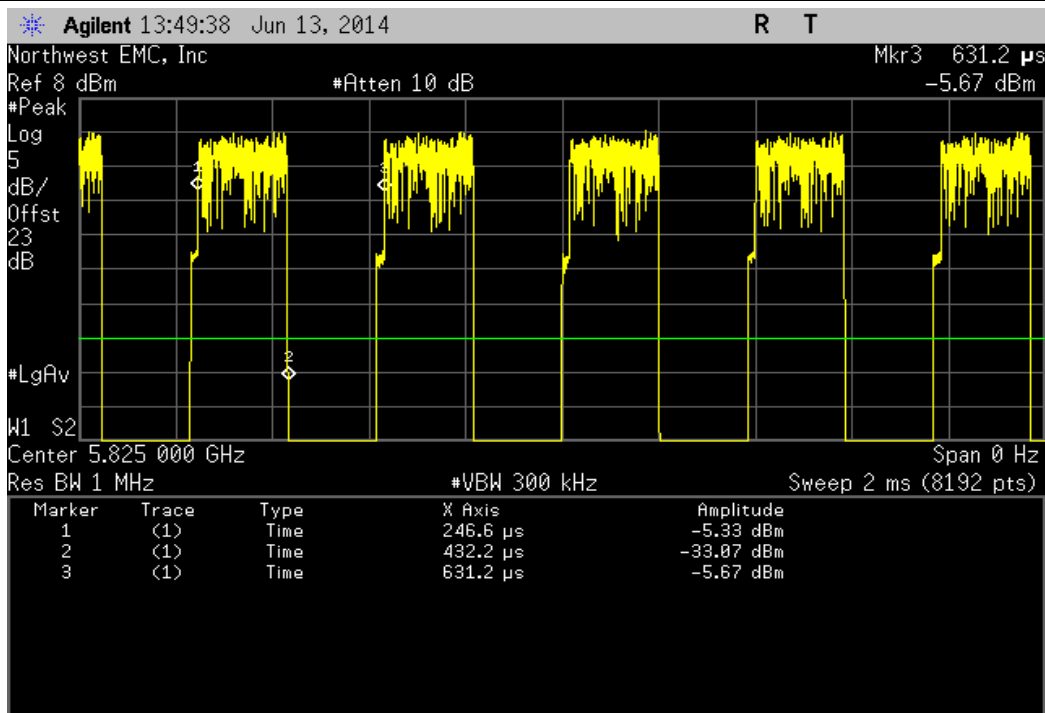


Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

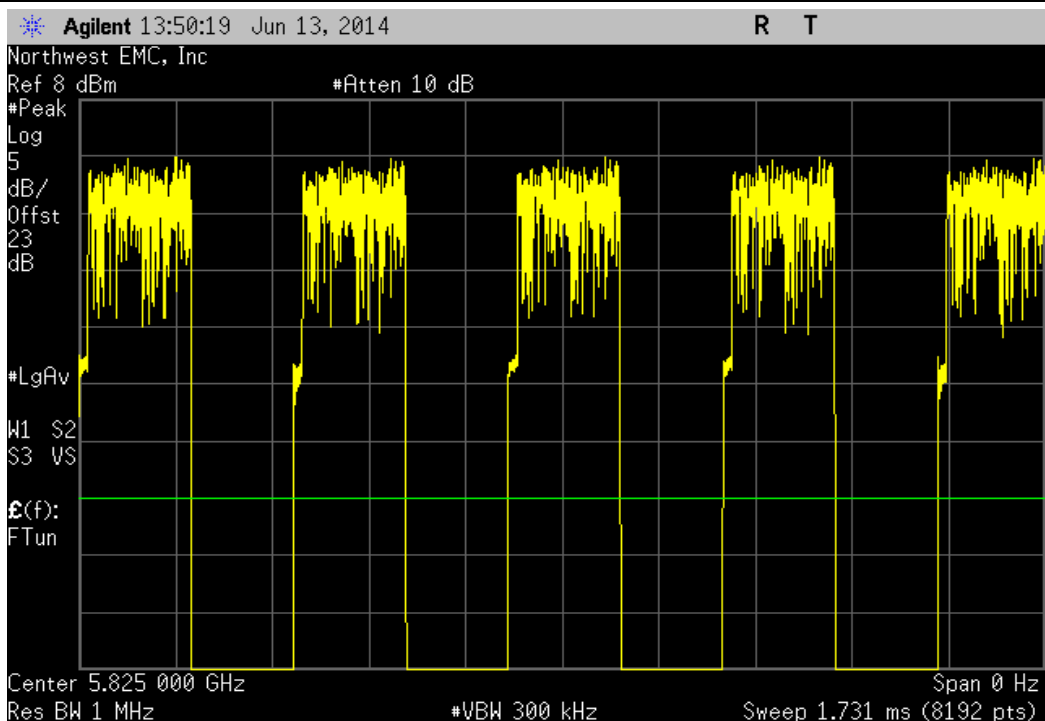
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
185.6 uS	384.6 uS	1	48.3	N/A	N/A	

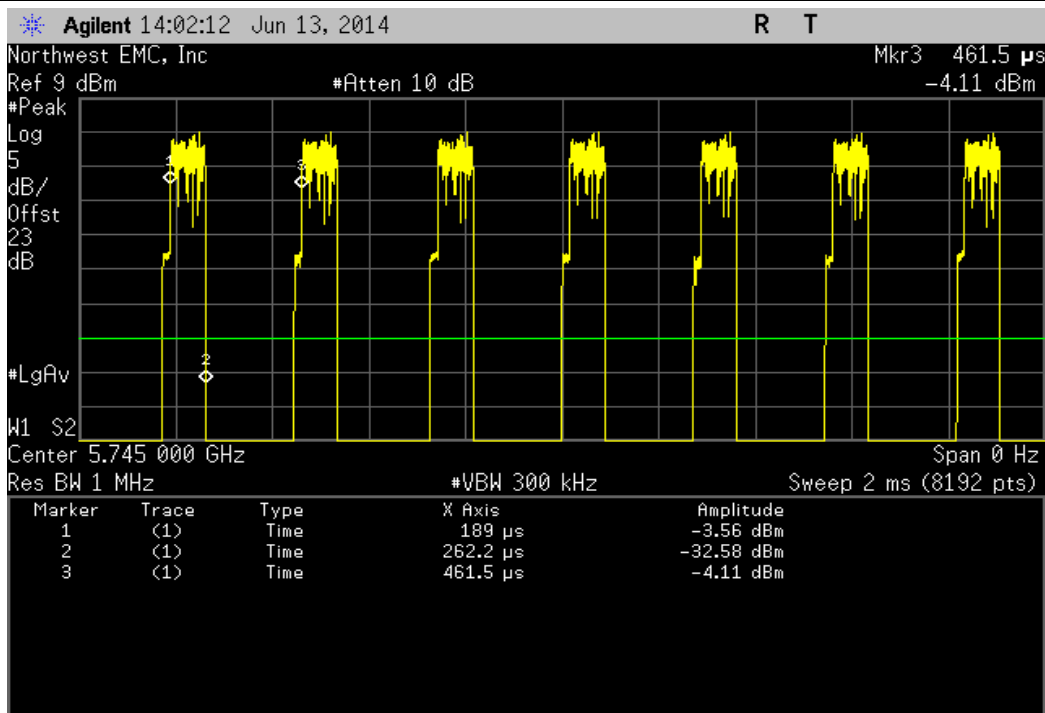


Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
N/A	N/A	5	N/A	N/A	N/A	



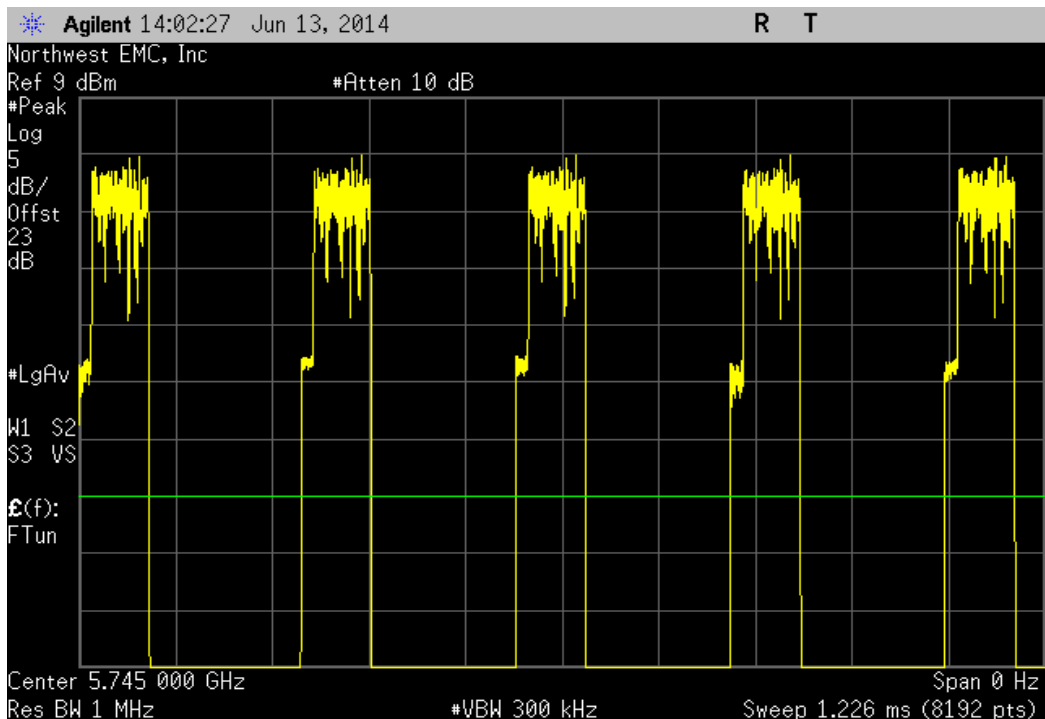
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	73.2 μ s	272.5 μ s	1	26.9	N/A	N/A



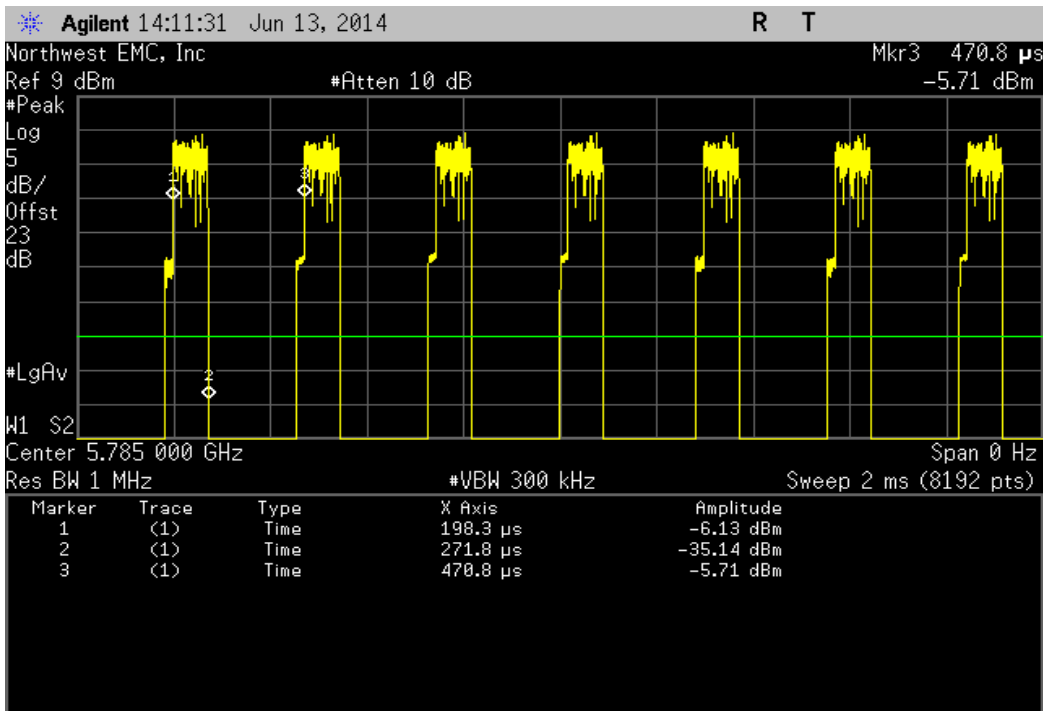
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



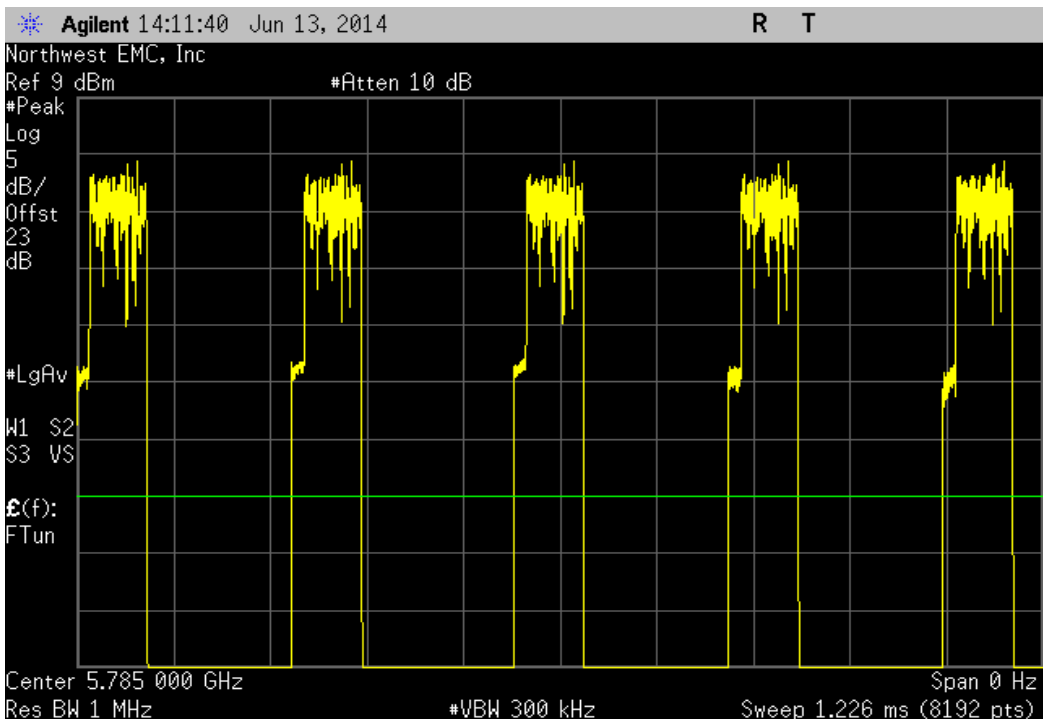
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
73.5 uS	272.5 uS	1	27	N/A	N/A

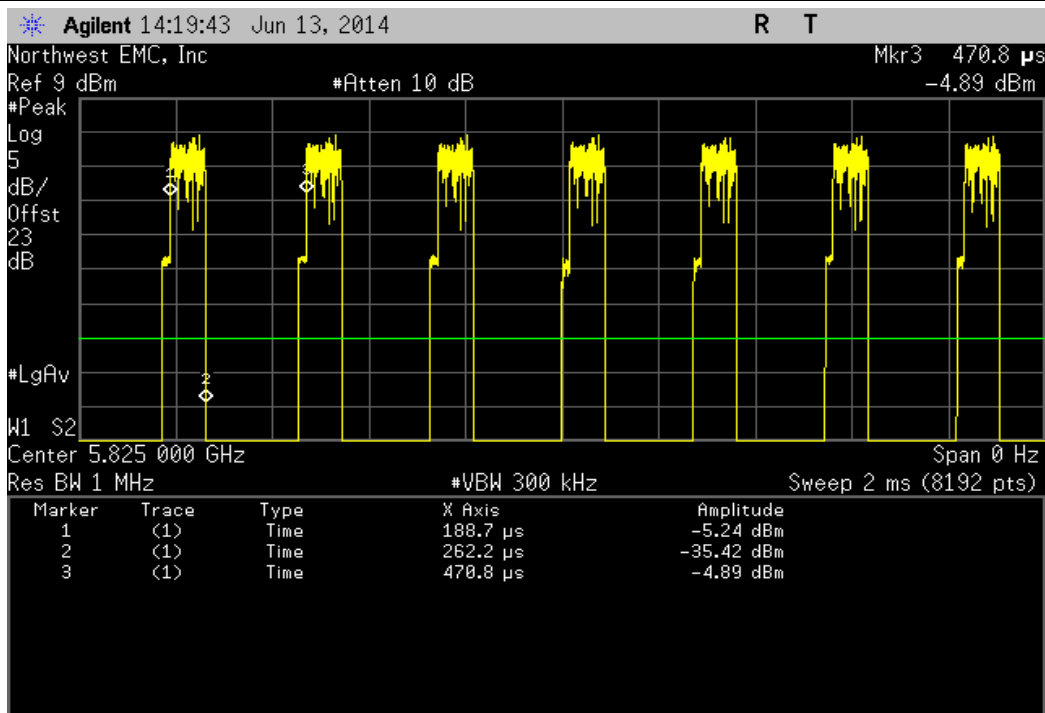


Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

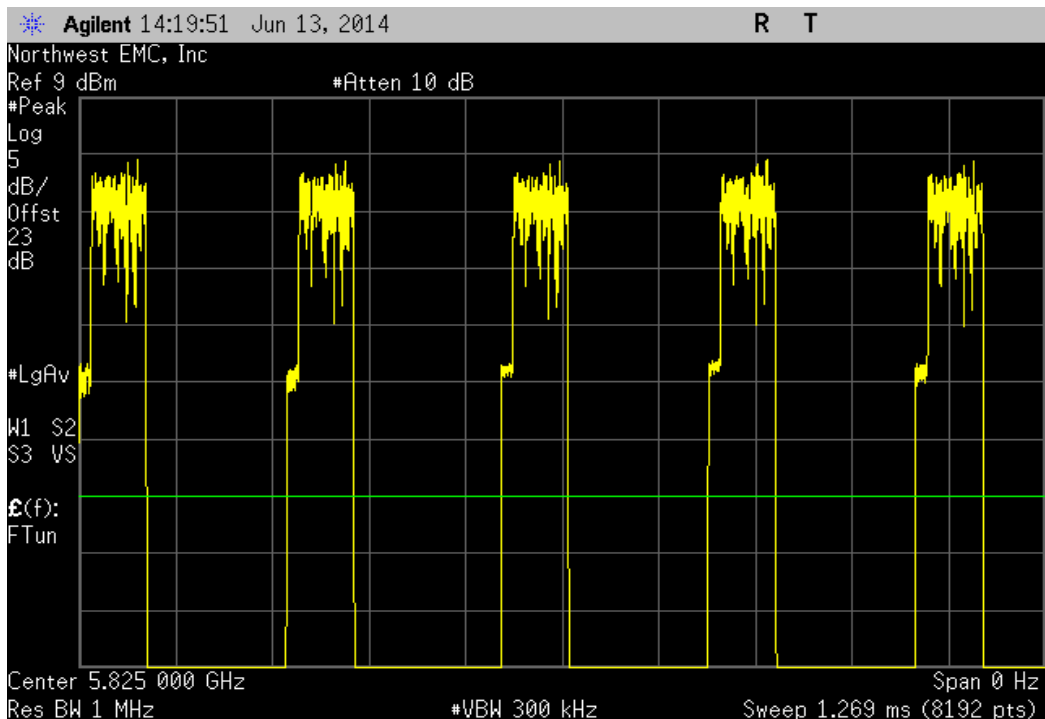
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



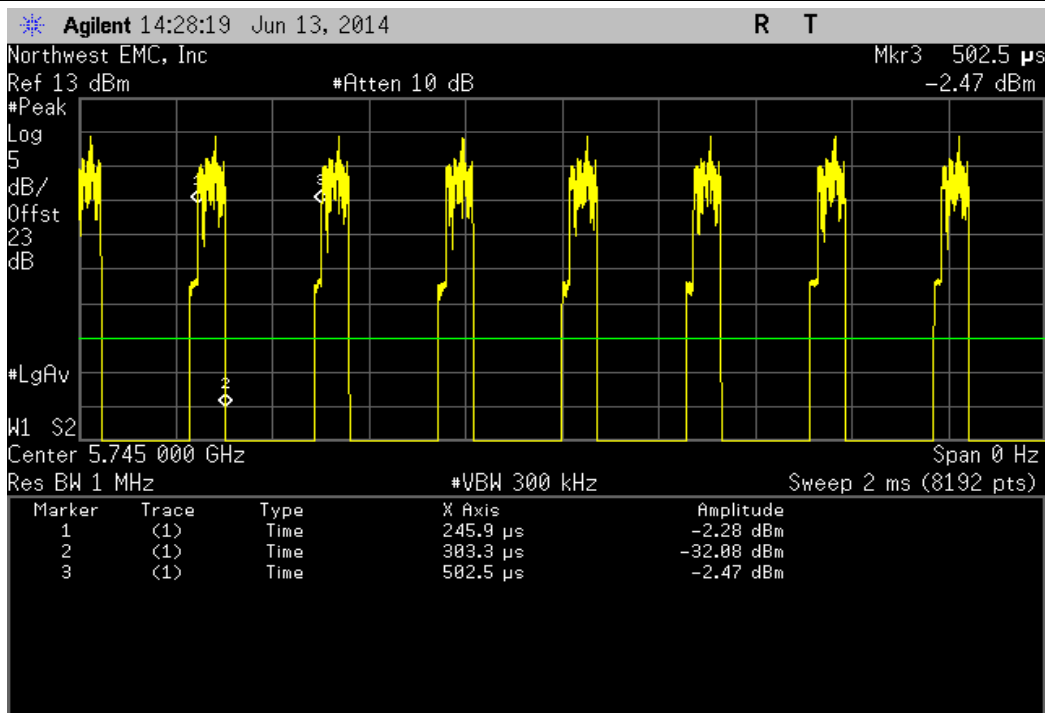
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	73.5 uS	282.1 uS	1	26.1	N/A	N/A



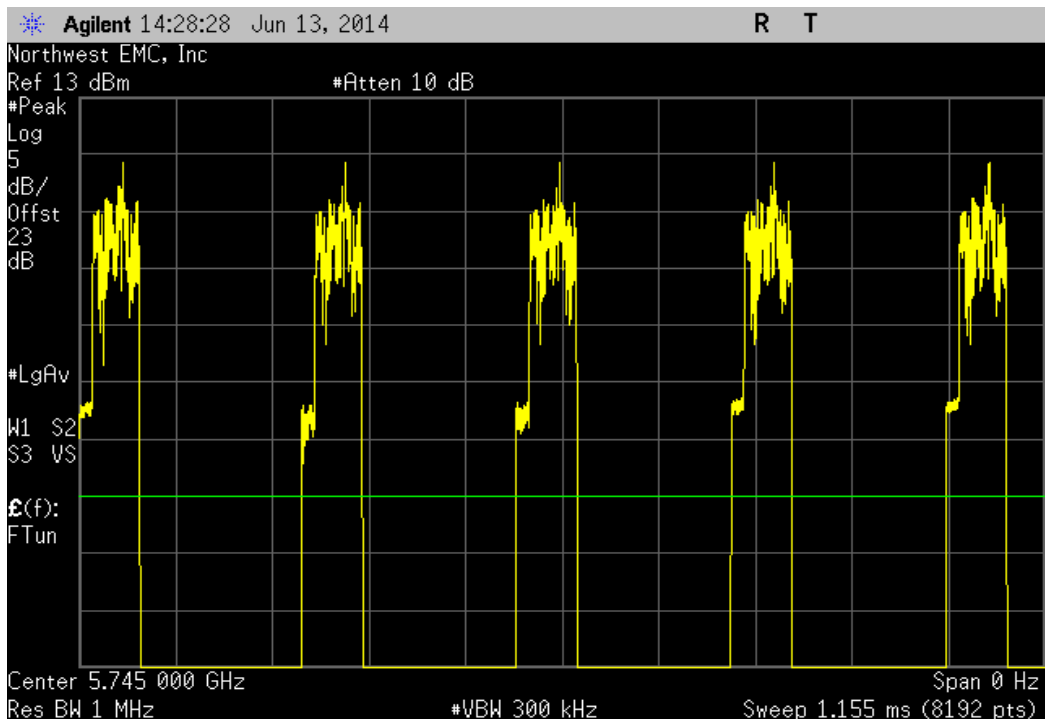
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



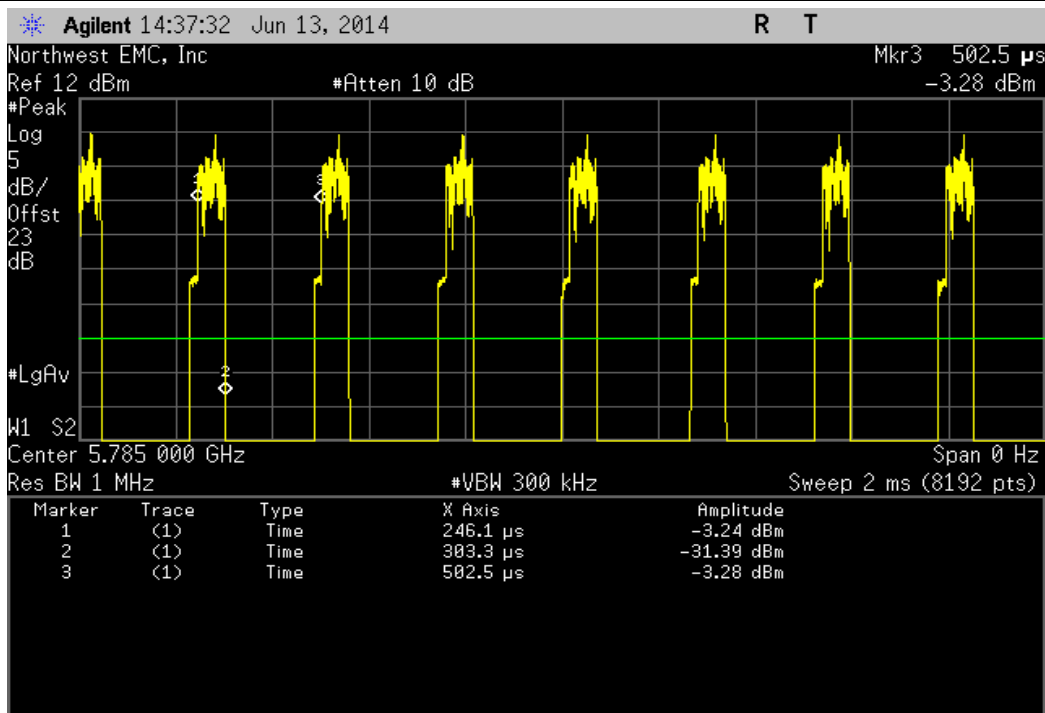
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	57.4 uS	256.6 uS	1	22.4	N/A	N/A



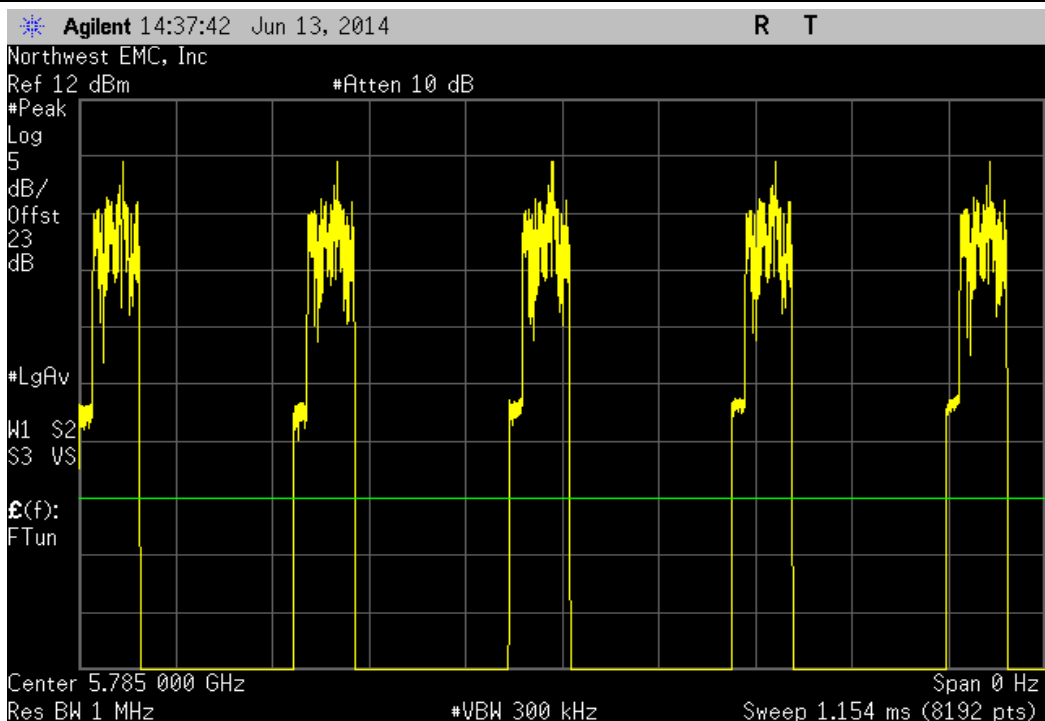
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



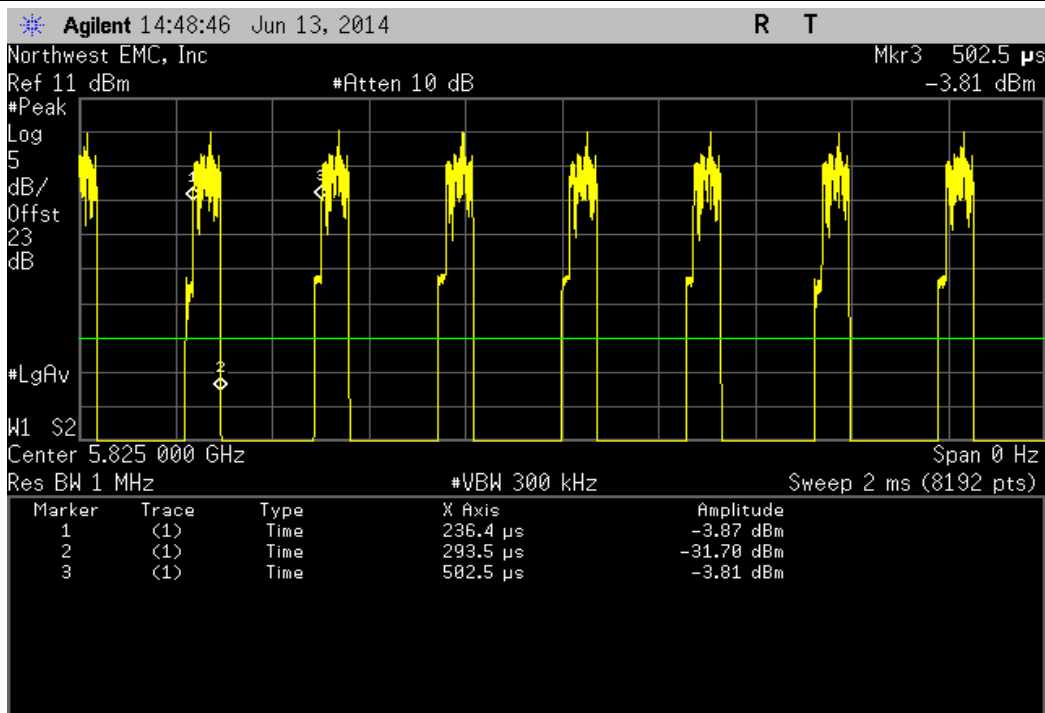
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	57.2 uS	256.4 uS	1	22.3	N/A	N/A



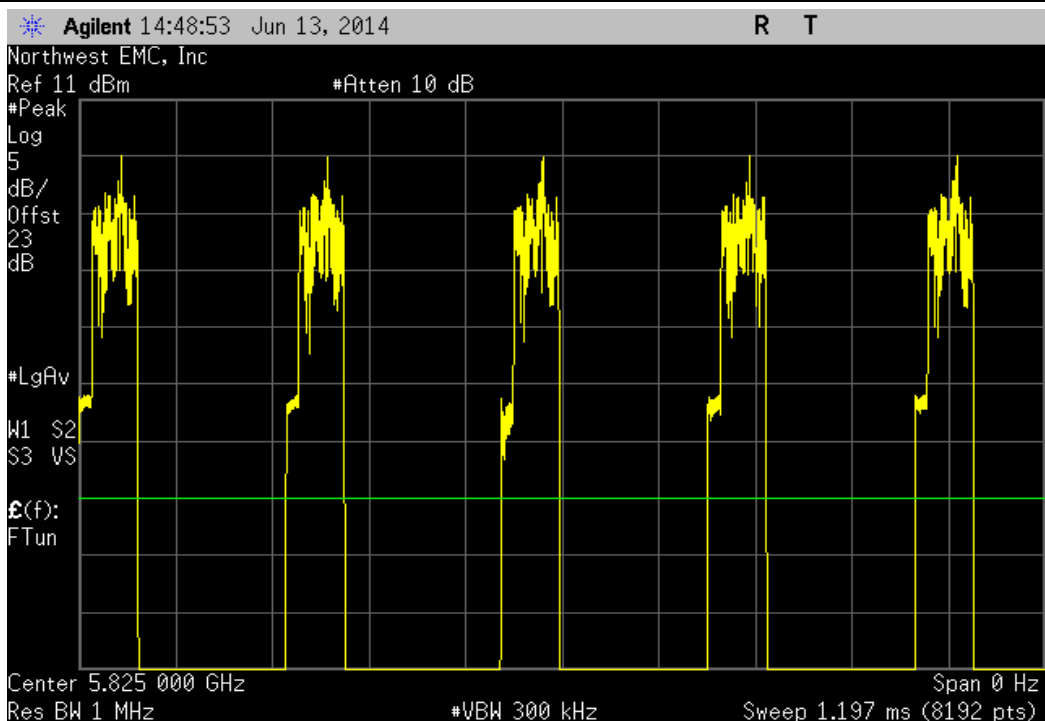
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
57.1 uS	266.1 uS	1	21.5	N/A	N/A	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
N/A	N/A	5	N/A	N/A	N/A	



OCCUPIED BANDWIDTH

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 (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

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 low, medium and high transmit frequencies. 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.



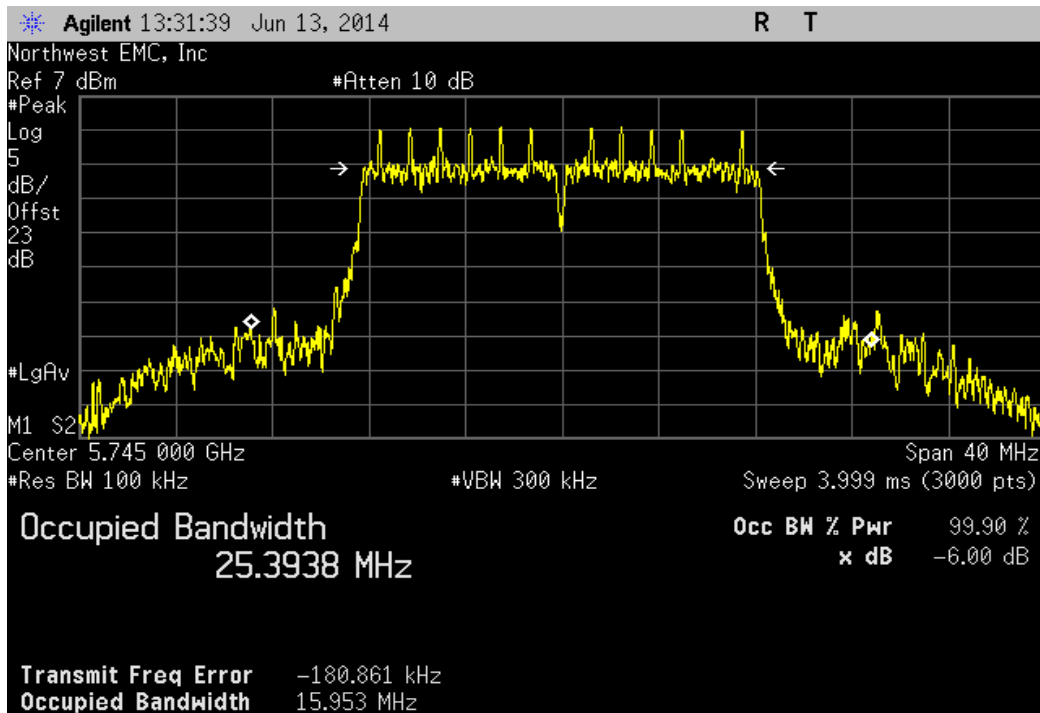
OCCUPIED BANDWIDTH

XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168	
Serial Number: 02EA41000011		Date: 06/13/14	
Customer: Summit Semiconductor LLC		Temperature: 22.5°C	
Attendees: None		Humidity: 43%	
Project: None		Barometric Pres.: 1019	
Tested by: Jared Ison		Power: 18 VDC	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Test was performed on the antenna port that produced the highest output power.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value	Limit
Antenna Port 1			Result
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		15.953 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		15.732 MHz	> 500 kHz
High Channel 165, 5825 MHz		15.899 MHz	> 500 kHz
802.11(a) 18 Mbps			
Low Channel 149, 5745 MHz		15.651 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		15.616 MHz	> 500 kHz
High Channel 165, 5825 MHz		15.309 MHz	> 500 kHz
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		15.15 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		15.66 MHz	> 500 kHz
High Channel 165, 5825 MHz		15.692 MHz	> 500 kHz

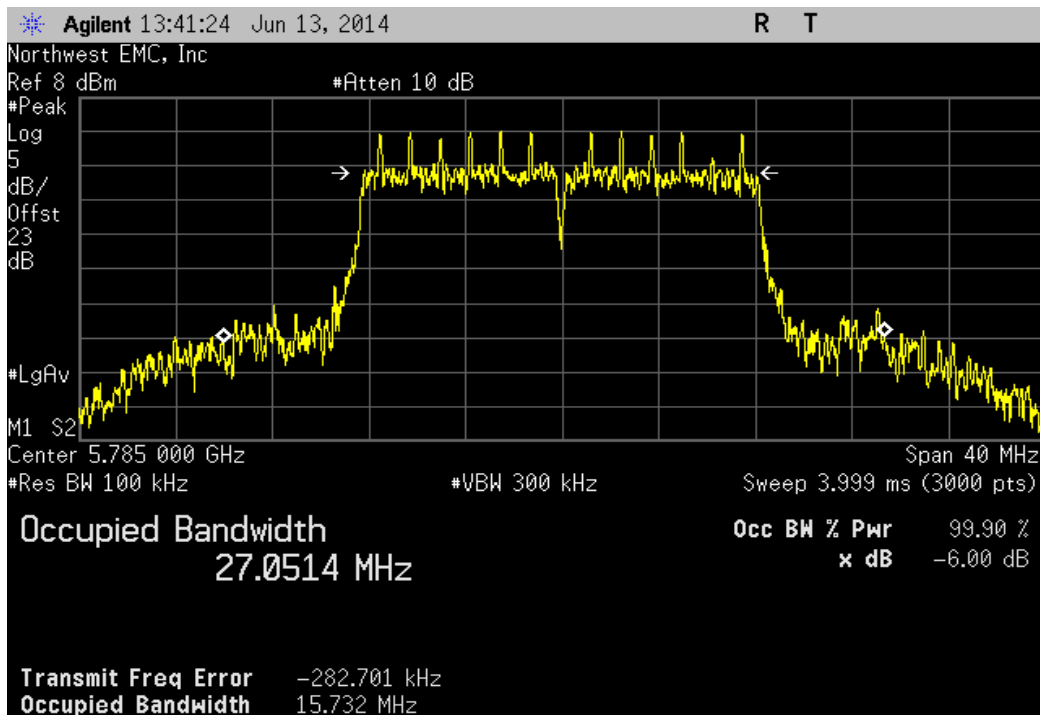
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.953 MHz	> 500 kHz	Pass



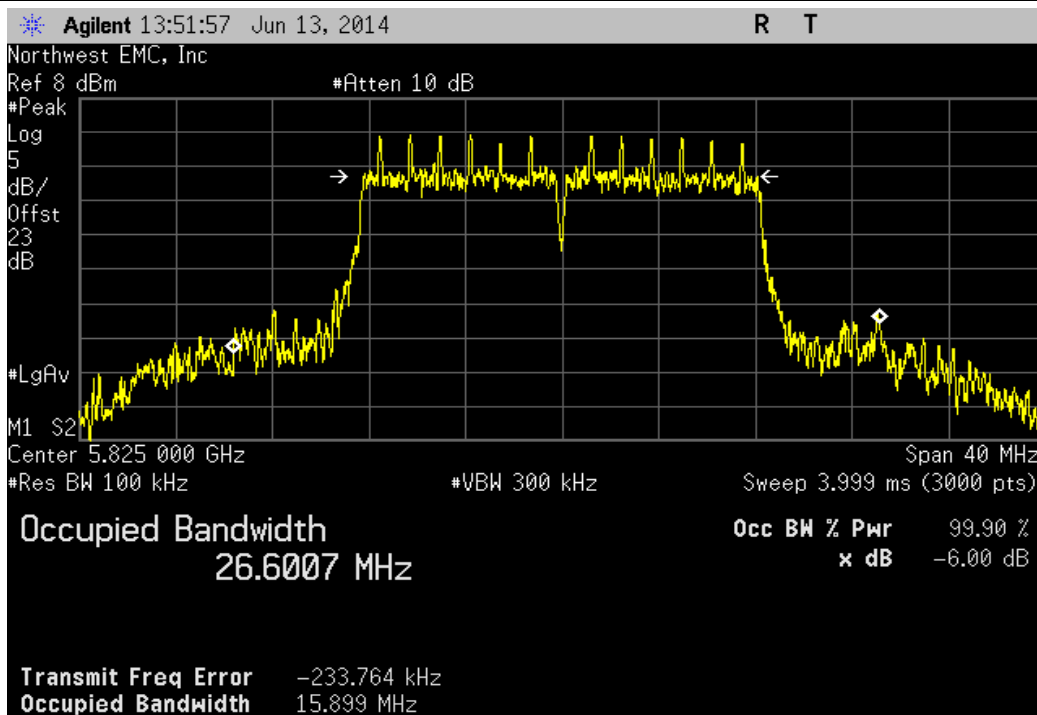
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.732 MHz	> 500 kHz	Pass



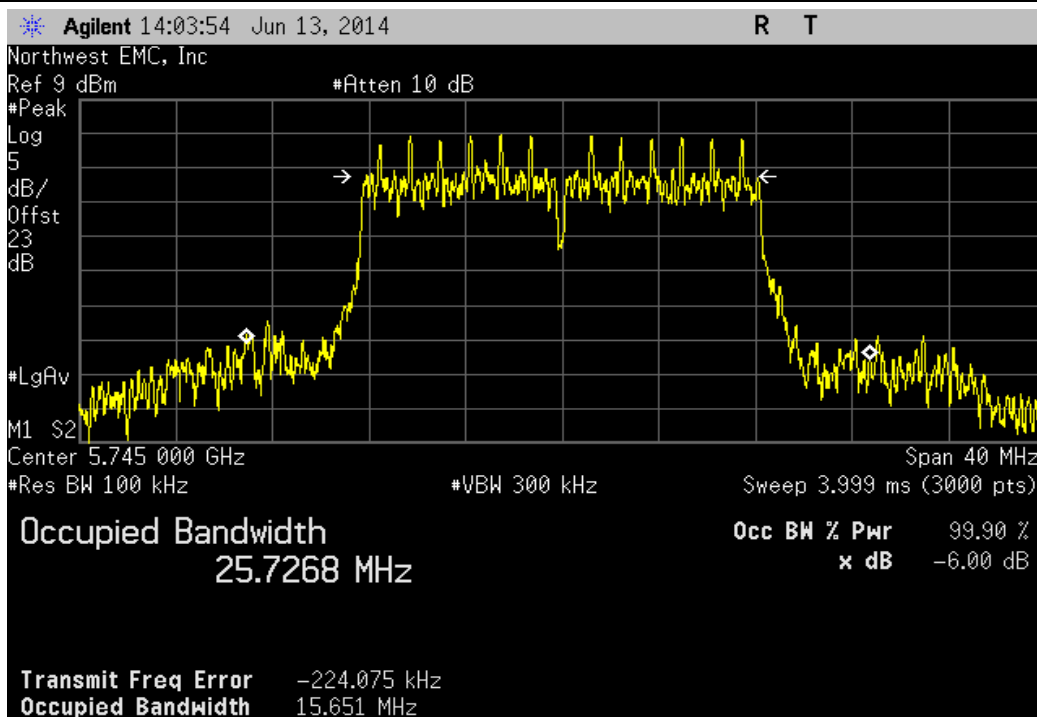
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
15.899 MHz	> 500 kHz	Pass



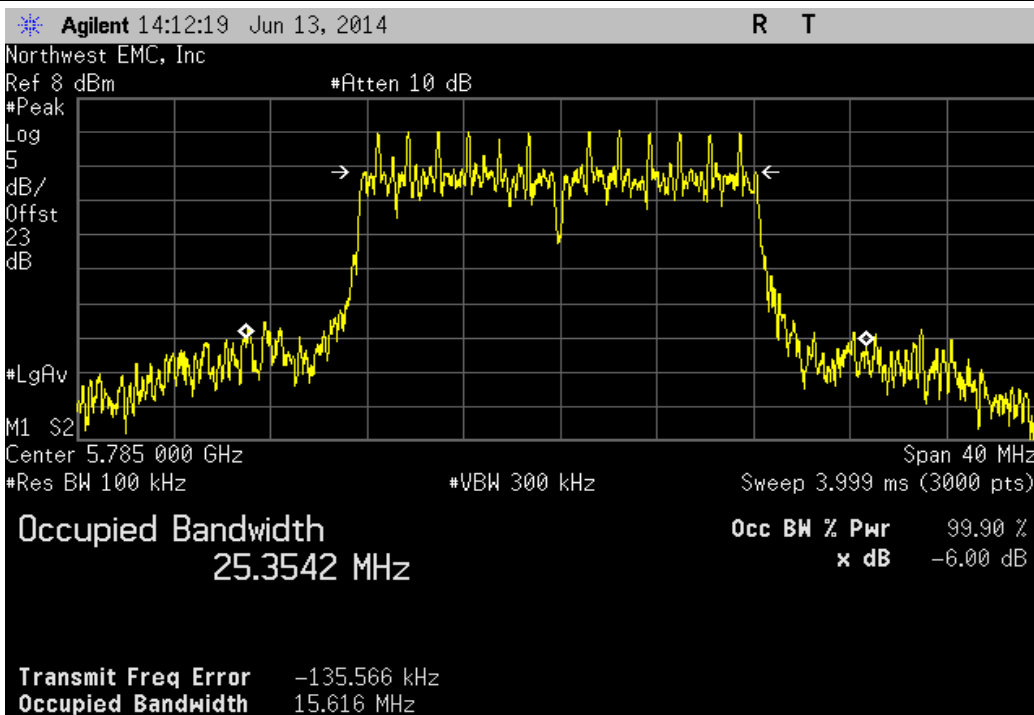
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.651 MHz	> 500 kHz	Pass



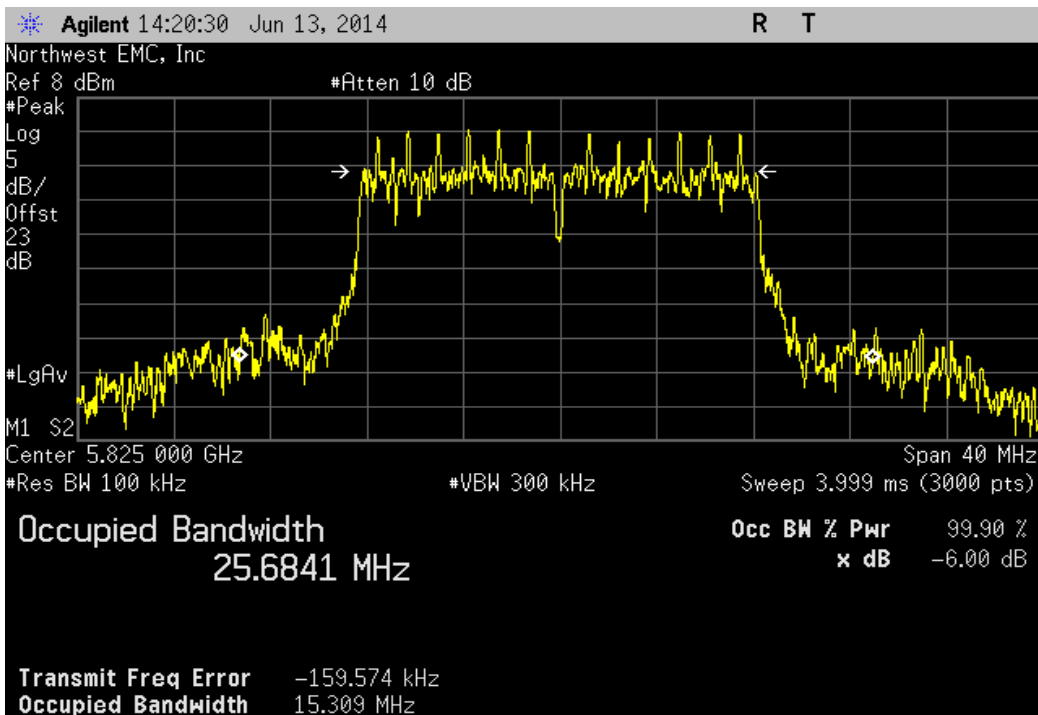
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.616 MHz	> 500 kHz	Pass



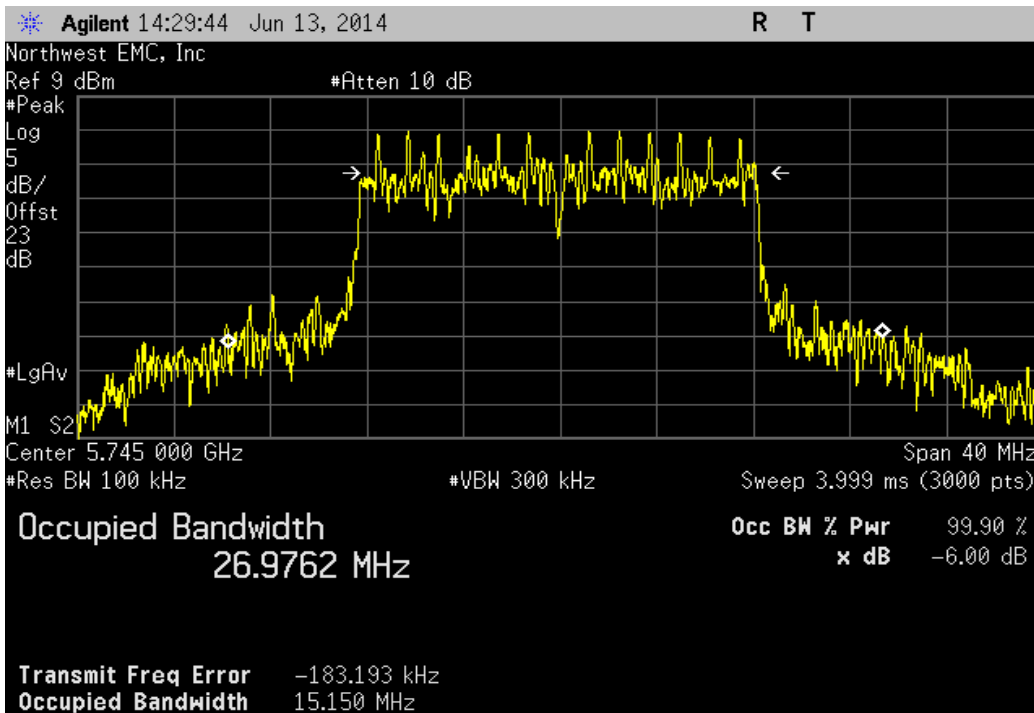
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
15.309 MHz	> 500 kHz	Pass



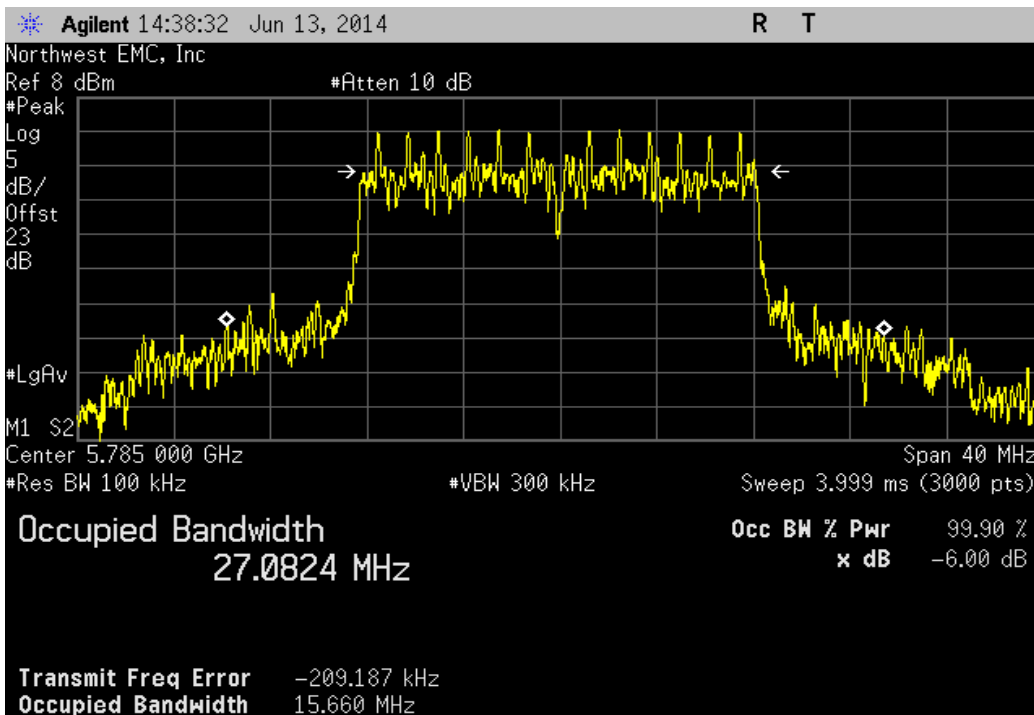
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.15 MHz	> 500 kHz	Pass



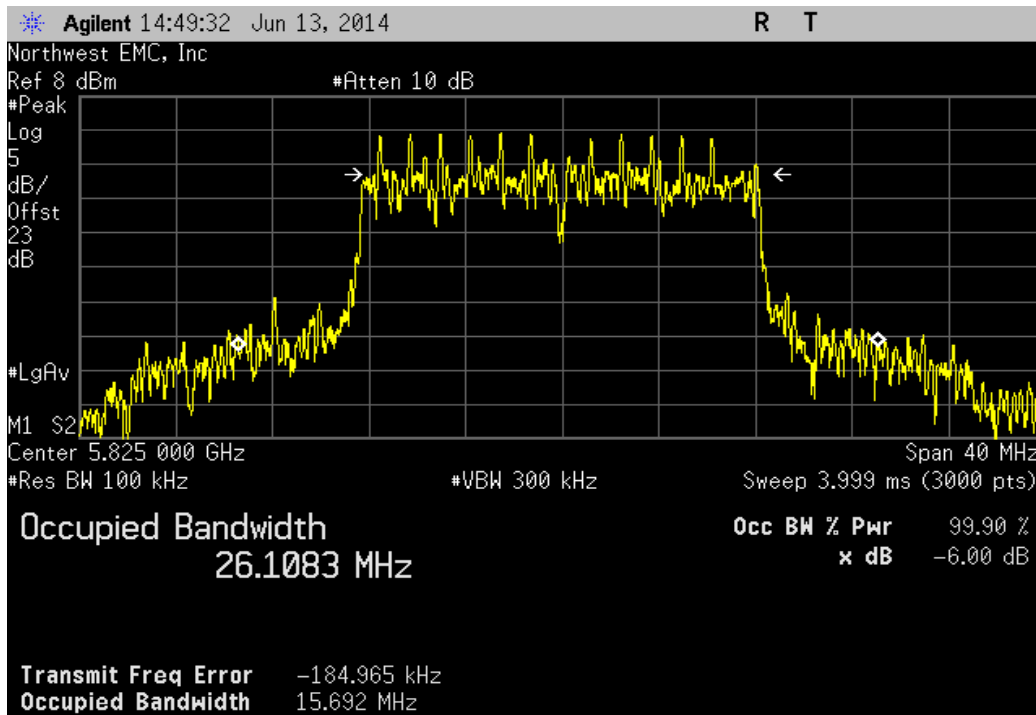
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.66 MHz	> 500 kHz	Pass



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
15.692 MHz	> 500 kHz	Pass



OUTPUT POWER

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 (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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 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 peak transmit power the DTS 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 found in KDB 558074 DTS D01 Measurement Section 9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

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



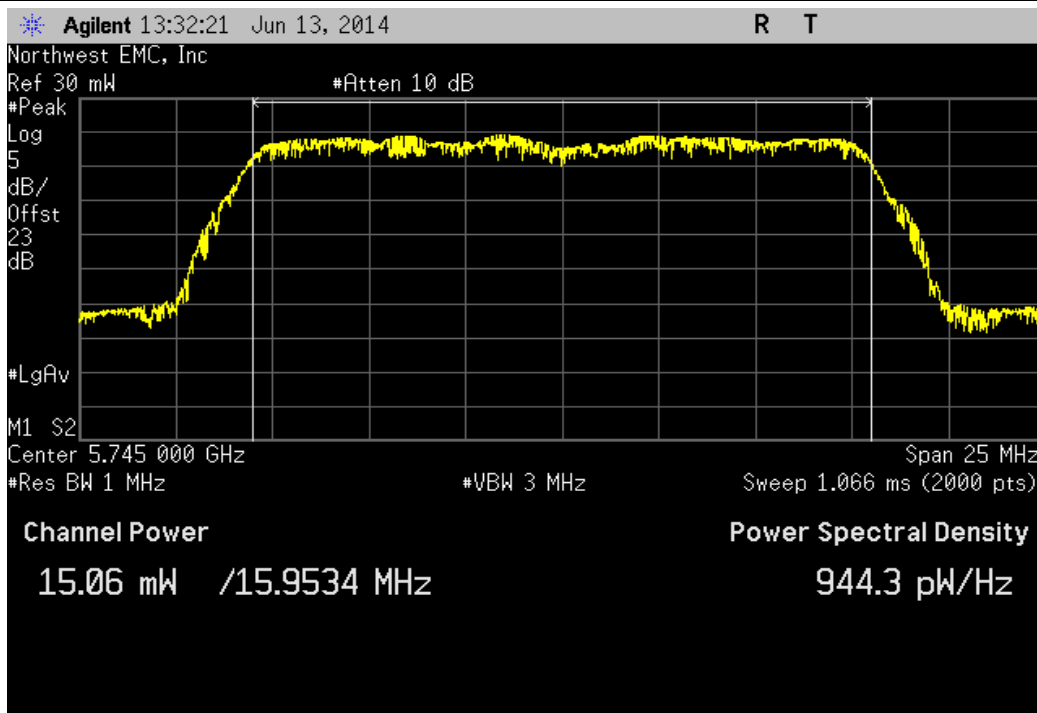
OUTPUT POWER

XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168	
Serial Number: 02EA41000011		Date: 06/13/14	
Customer: Summit Semiconductor LLC		Temperature: 22.5°C	
Attendees: None		Humidity: 43%	
Project: None		Barometric Pres.: 1019	
Tested by: Jared Ison		Power: 18 VDC	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Test was performed on the antenna port that produced the highest output power during evaluation testing.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value	Limit
Antenna Port 1			Result
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		15.065 mW	< 1 W
Mid Channel 157, 5785 MHz		15.644 mW	< 1 W
High Channel 165, 5825 MHz		13.791 mW	< 1 W
802.11(a) 18 Mbps			
Low Channel 149, 5745 MHz		11.768 mW	< 1 W
Mid Channel 157, 5785 MHz		10.889 mW	< 1 W
High Channel 165, 5825 MHz		9.427 mW	< 1 W
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		10.261 mW	< 1 W
Mid Channel 157, 5785 MHz		8.435 mW	< 1 W
High Channel 165, 5825 MHz		7.477 mW	< 1 W

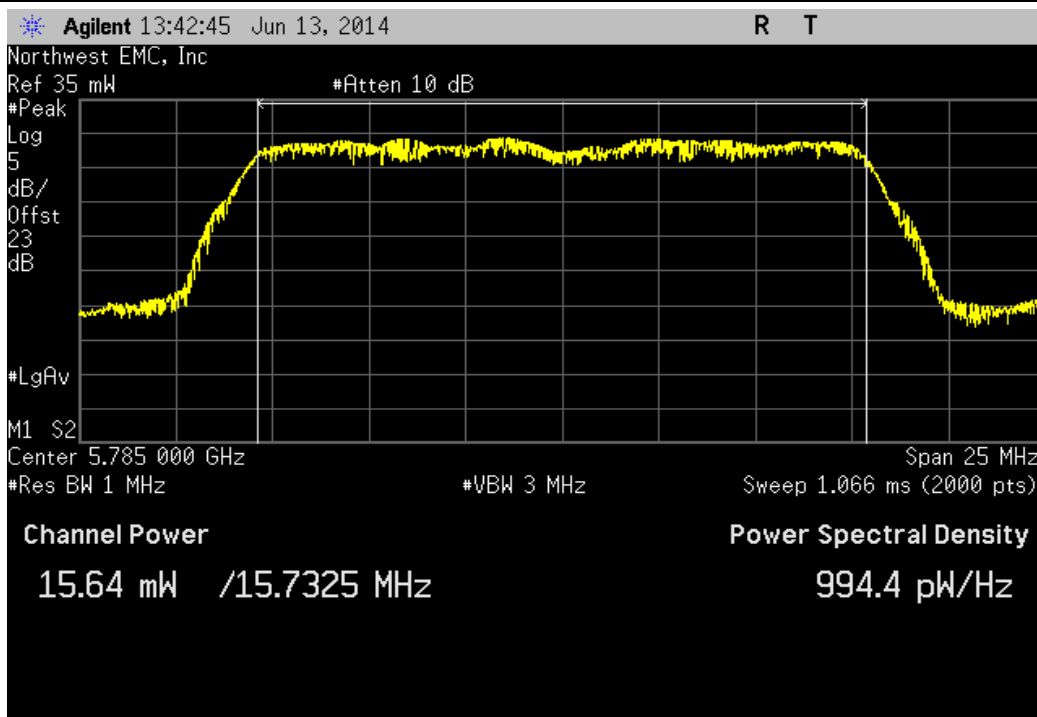
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.065 mW	< 1 W	Pass



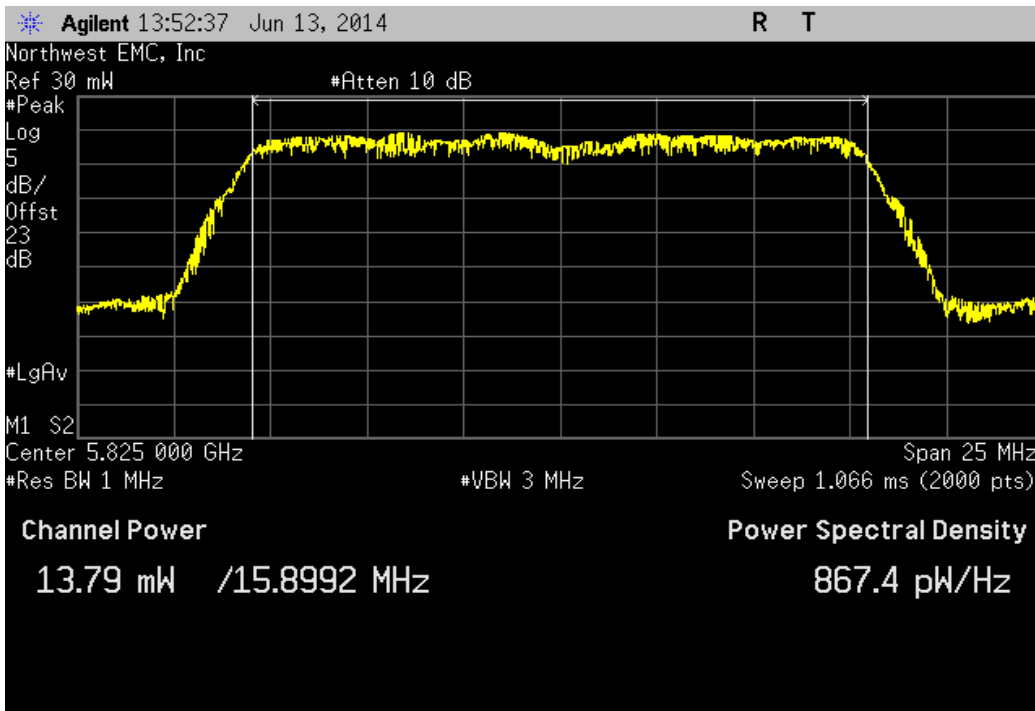
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.644 mW	< 1 W	Pass



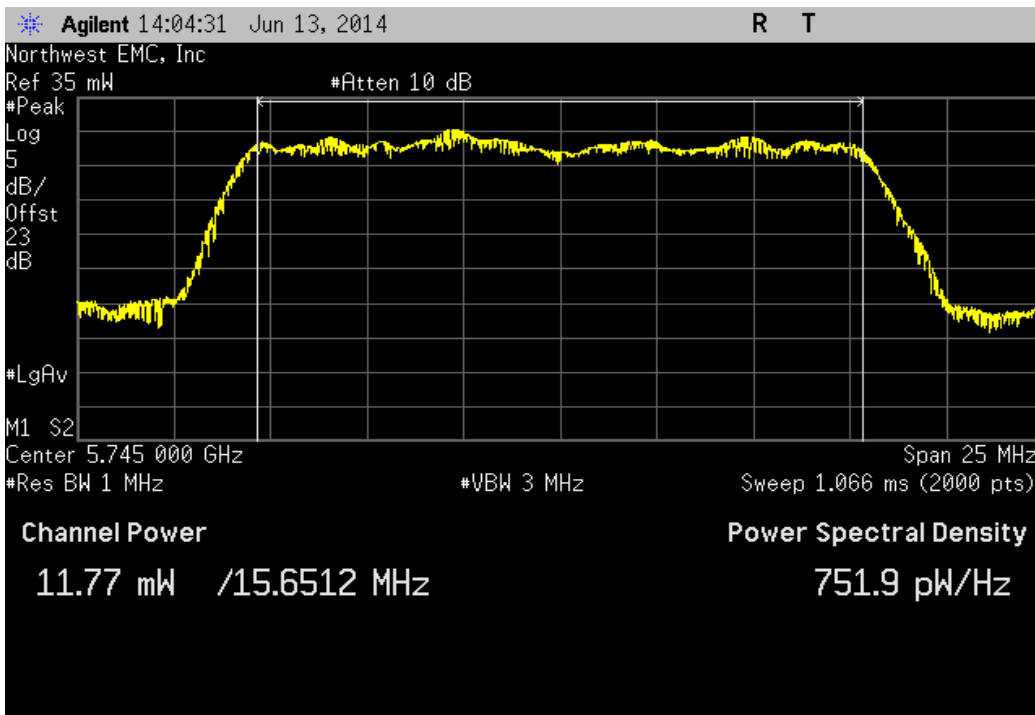
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
13.791 mW	< 1 W	Pass



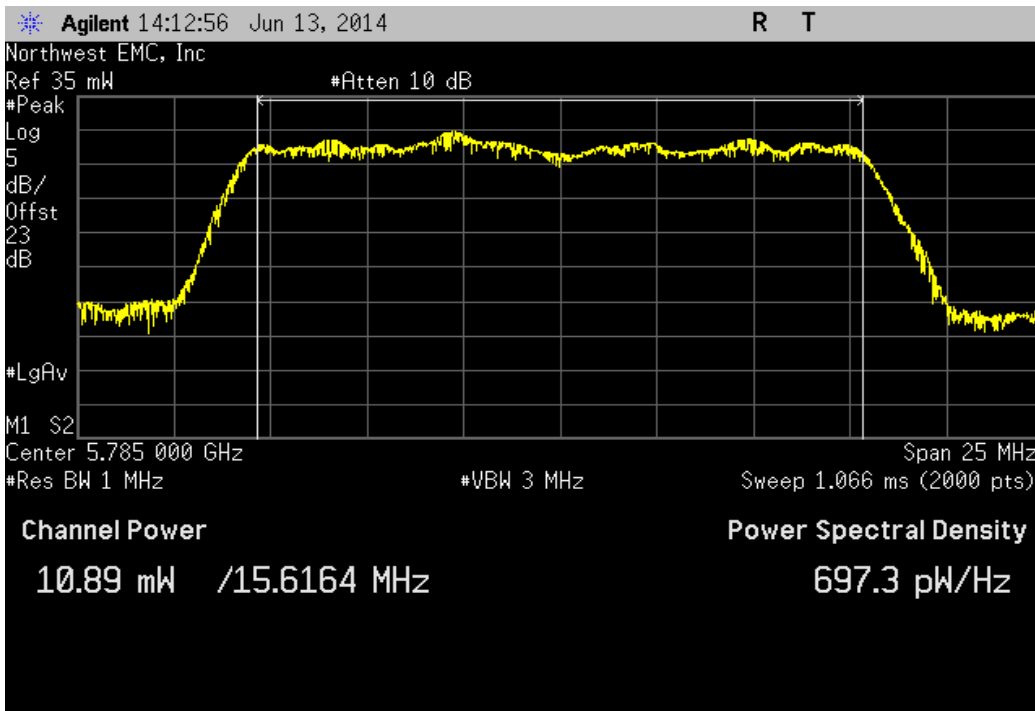
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
11.768 mW	< 1 W	Pass



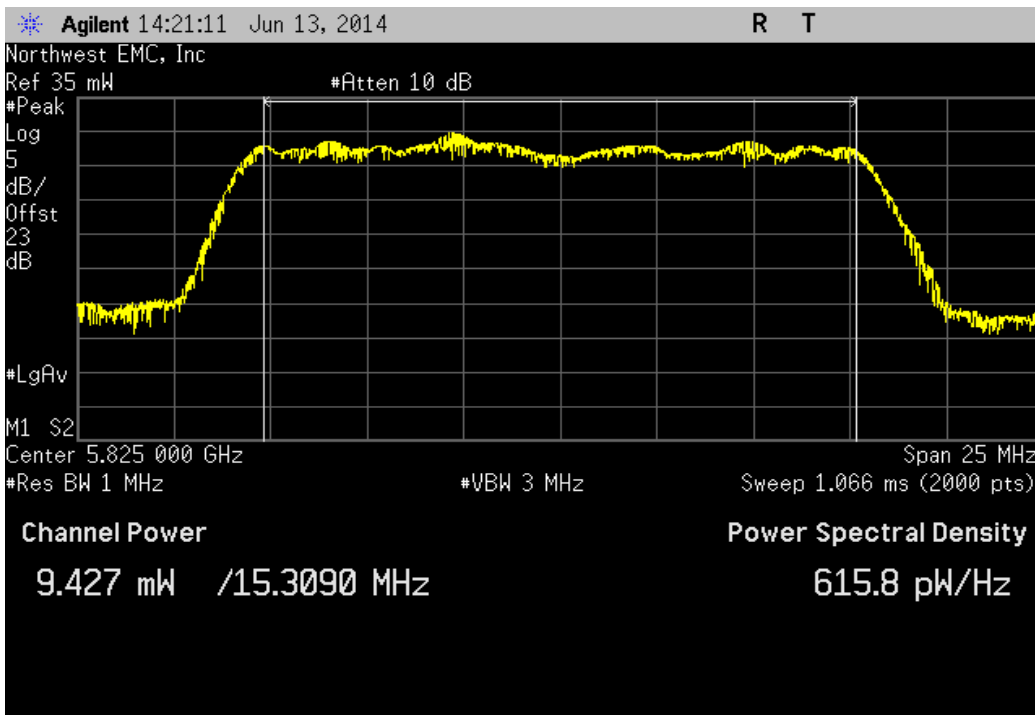
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
10.889 mW	< 1 W	Pass



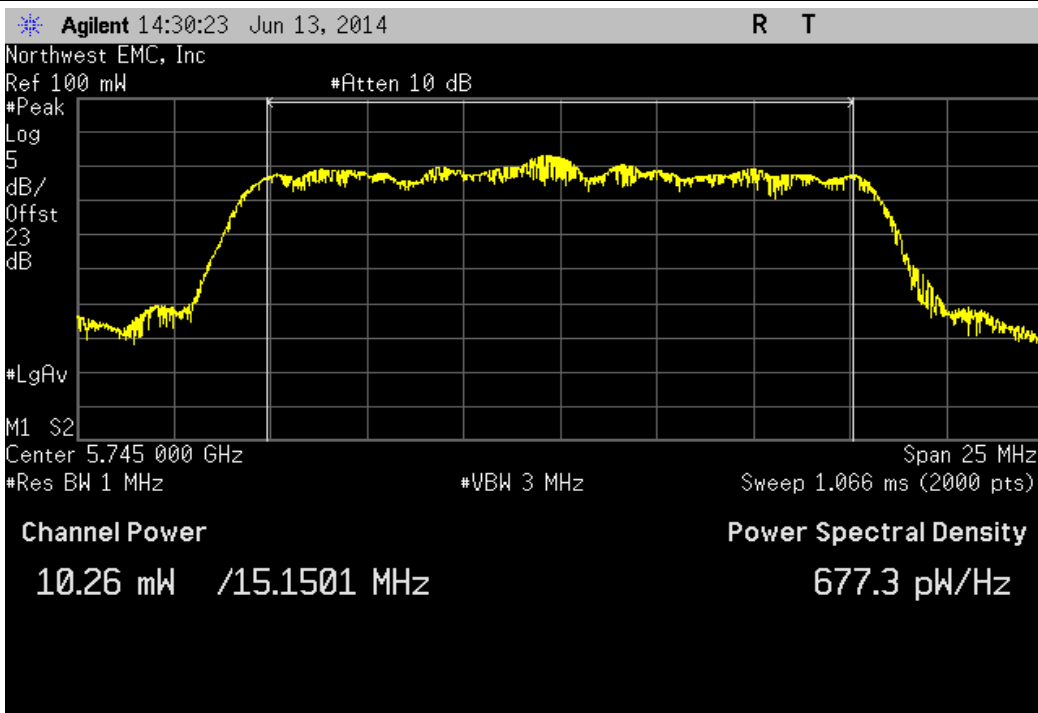
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
9.427 mW	< 1 W	Pass



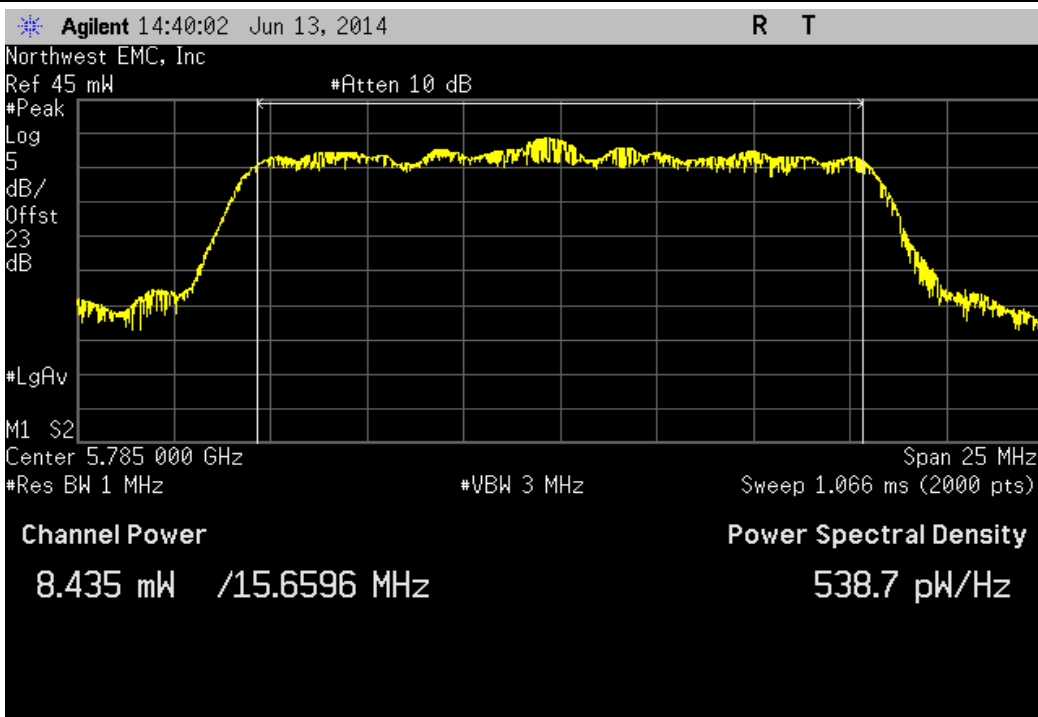
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
10.261 mW	< 1 W	Pass



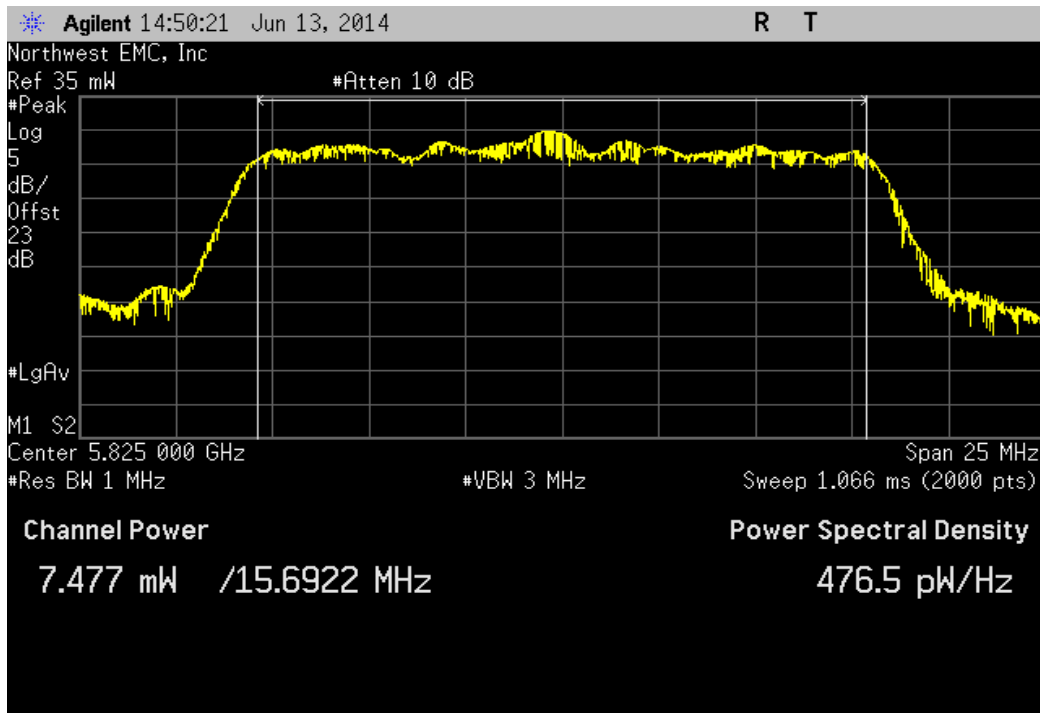
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
8.435 mW	< 1 W	Pass



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
7.477 mW	< 1 W	Pass



POWER SPECTRAL DENSITY

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 (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. 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 lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

$$BWCF = 10 \cdot \log(3 \text{ kHz} / 100 \text{ kHz}) = -15.2 \text{ dB}$$



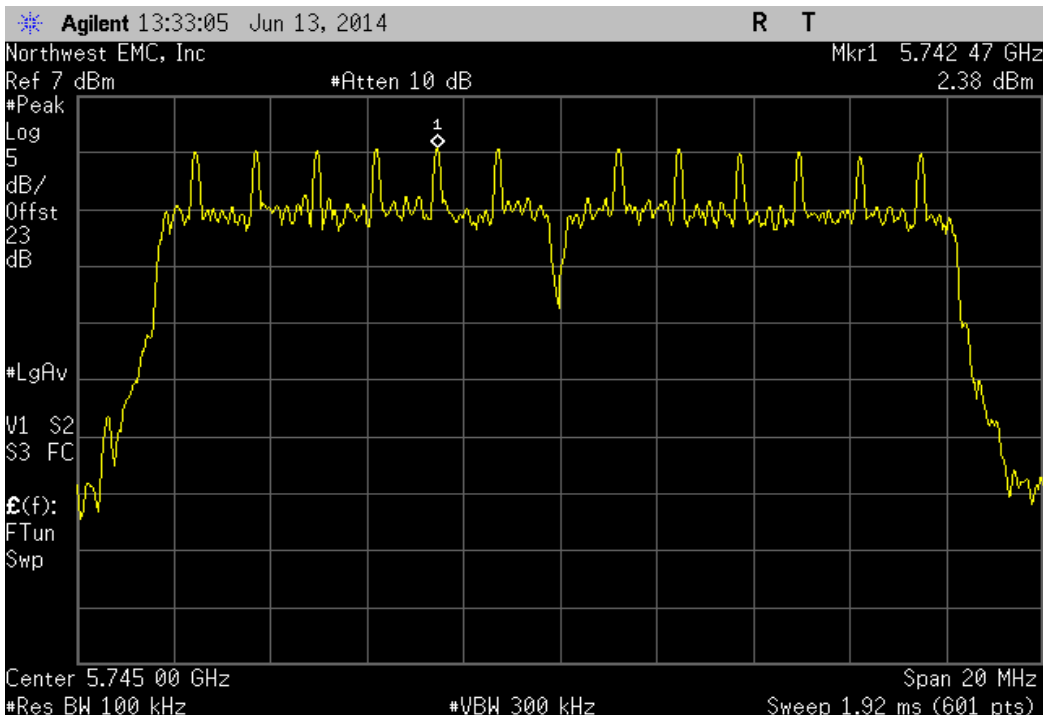
POWER SPECTRAL DENSITY

XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168				
Serial Number: 02EA41000011		Date: 06/13/14				
Customer: Summit Semiconductor LLC		Temperature: 22.5°C				
Attendees: None		Humidity: 43%				
Project: None		Barometric Pres.: 1019				
Tested by: Jared Ison		Power: 18 VDC				
Job Site: EV06						
TEST SPECIFICATIONS		Test Method				
FCC 15.247:2014		ANSI C63.10:2009				
COMMENTS						
Test was performed on the antenna port that produced the highest output power.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	2	Signature 				
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
Antenna Port 1						
5725 MHz - 5850 MHz Band						
802.11(a) 6 Mbps						
Low Channel 149, 5745 MHz		2.375	-15.2	-12.825	8	Pass
Mid Channel 157, 5785 MHz		2.846	-15.2	-12.354	8	Pass
High Channel 165, 5825 MHz		2.528	-15.2	-12.672	8	Pass
802.11(a) 18 Mbps						
Low Channel 149, 5745 MHz		3.729	-15.2	-11.471	8	Pass
Mid Channel 157, 5785 MHz		3.187	-15.2	-12.013	8	Pass
High Channel 165, 5825 MHz		3.182	-15.2	-12.018	8	Pass
802.11(a) 36 Mbps						
Low Channel 149, 5745 MHz		3.941	-15.2	-11.259	8	Pass
Mid Channel 157, 5785 MHz		3.081	-15.2	-12.119	8	Pass
High Channel 165, 5825 MHz		2.495	-15.2	-12.705	8	Pass

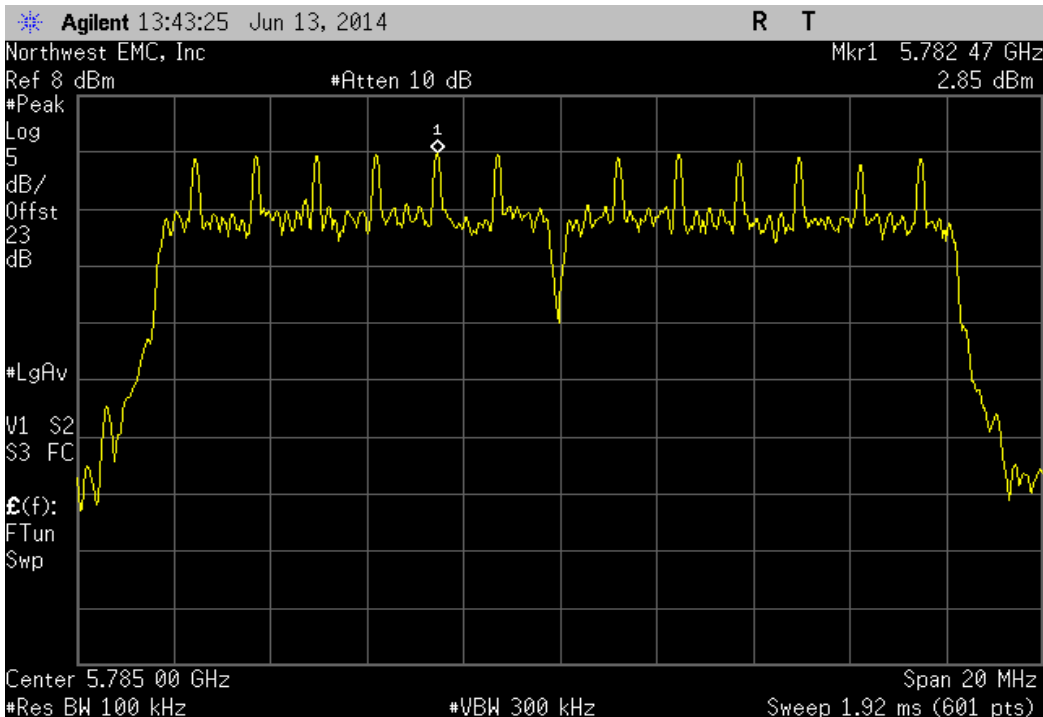
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.375	-15.2	-12.825	8	Pass



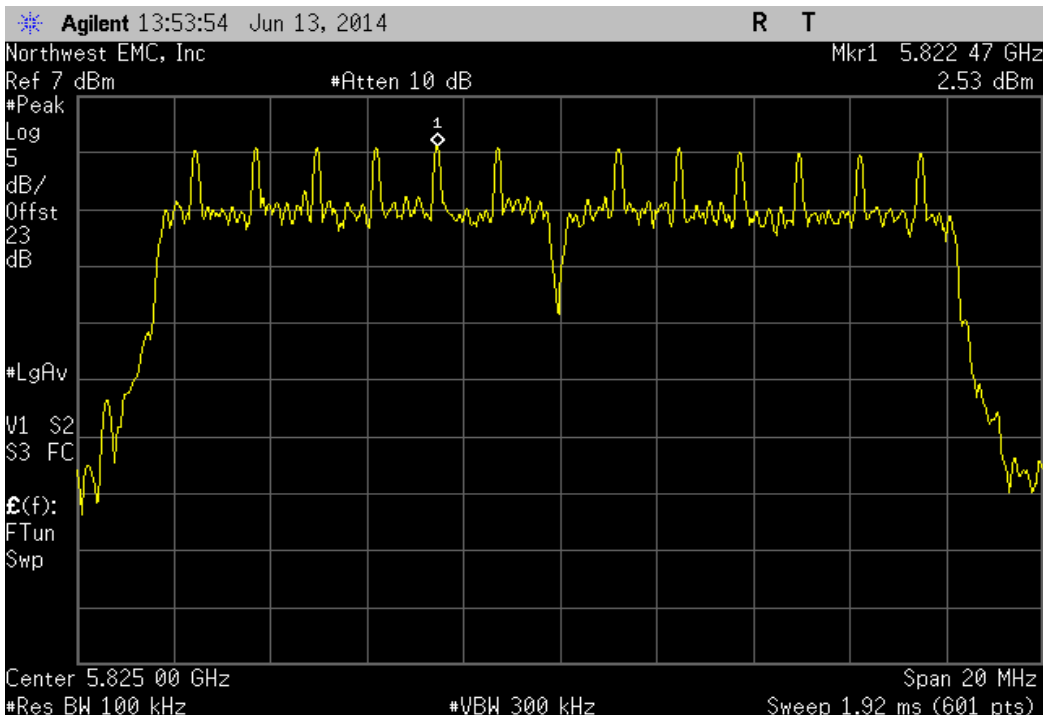
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.846	-15.2	-12.354	8	Pass



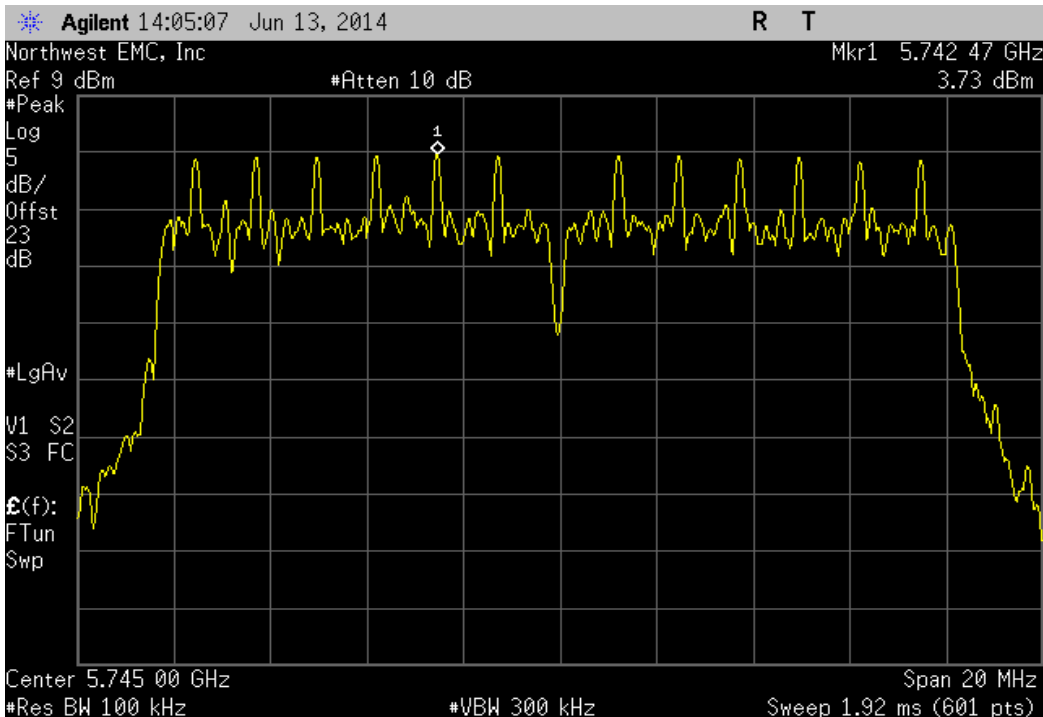
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.528	-15.2	-12.672	8	Pass



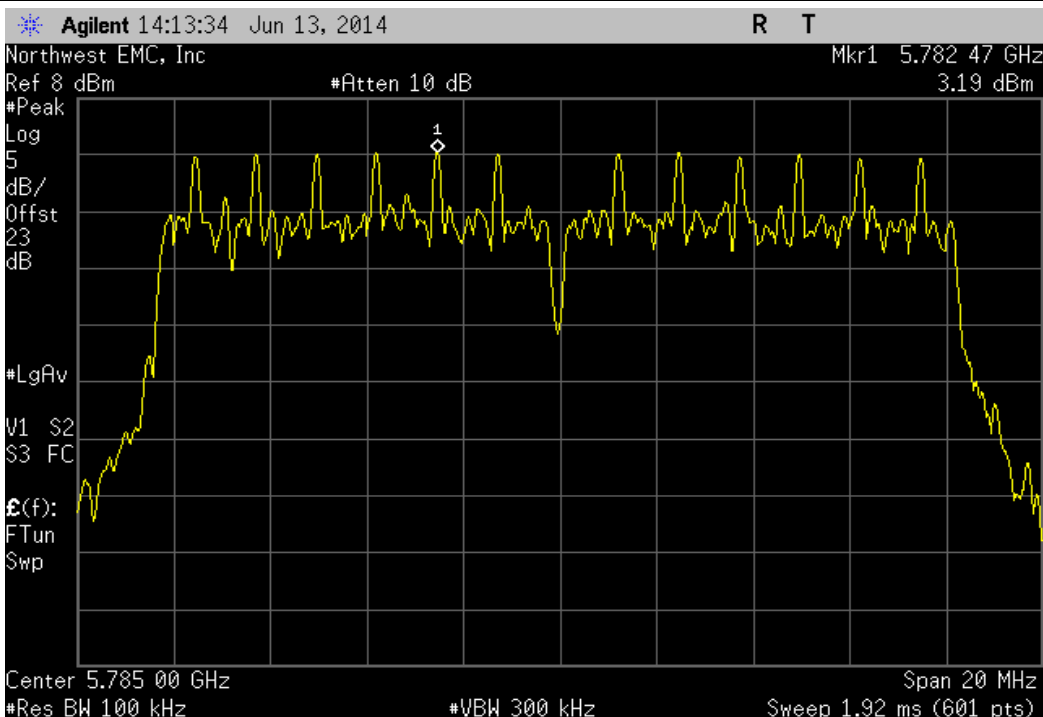
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.729	-15.2	-11.471	8	Pass



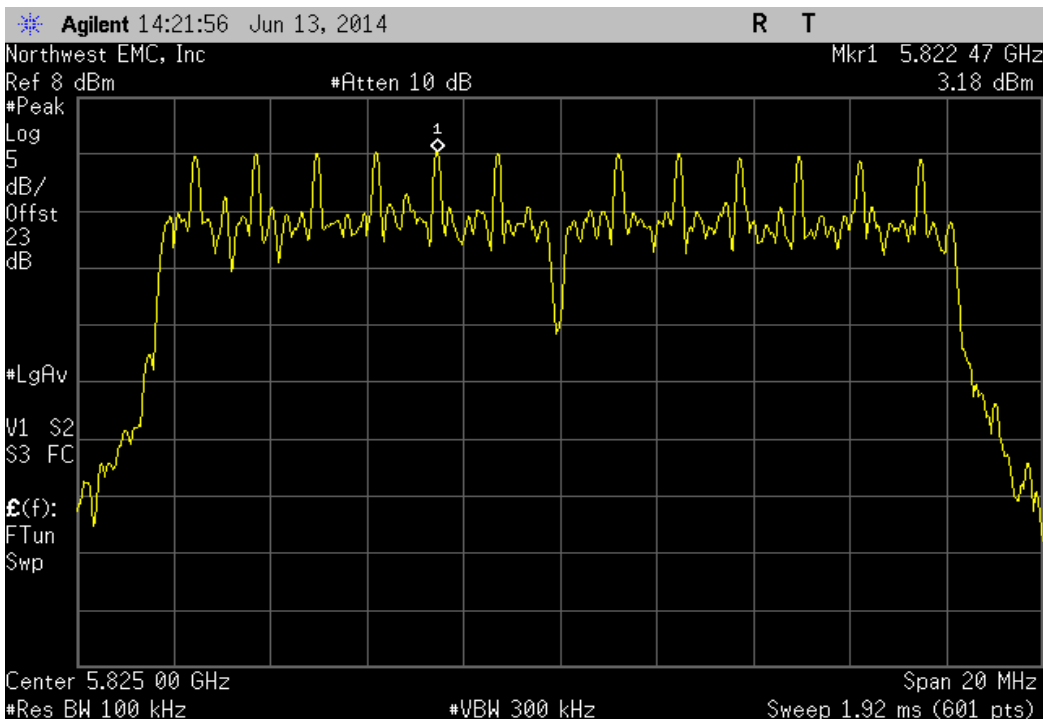
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.187	-15.2	-12.013	8	Pass



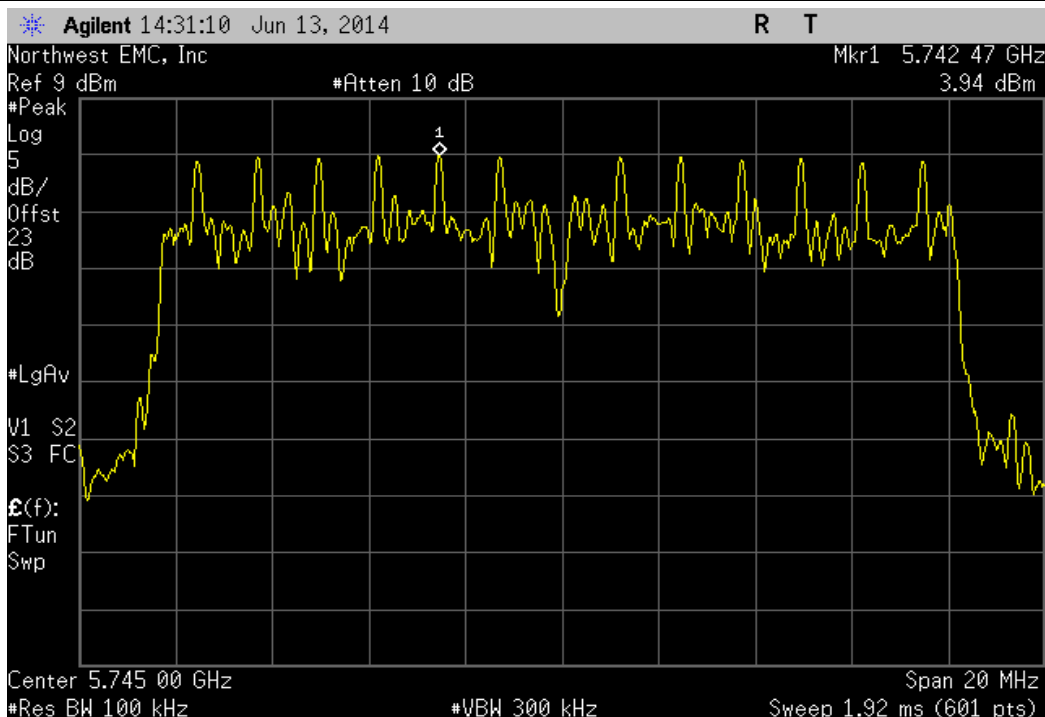
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.182	-15.2	-12.018	8	Pass



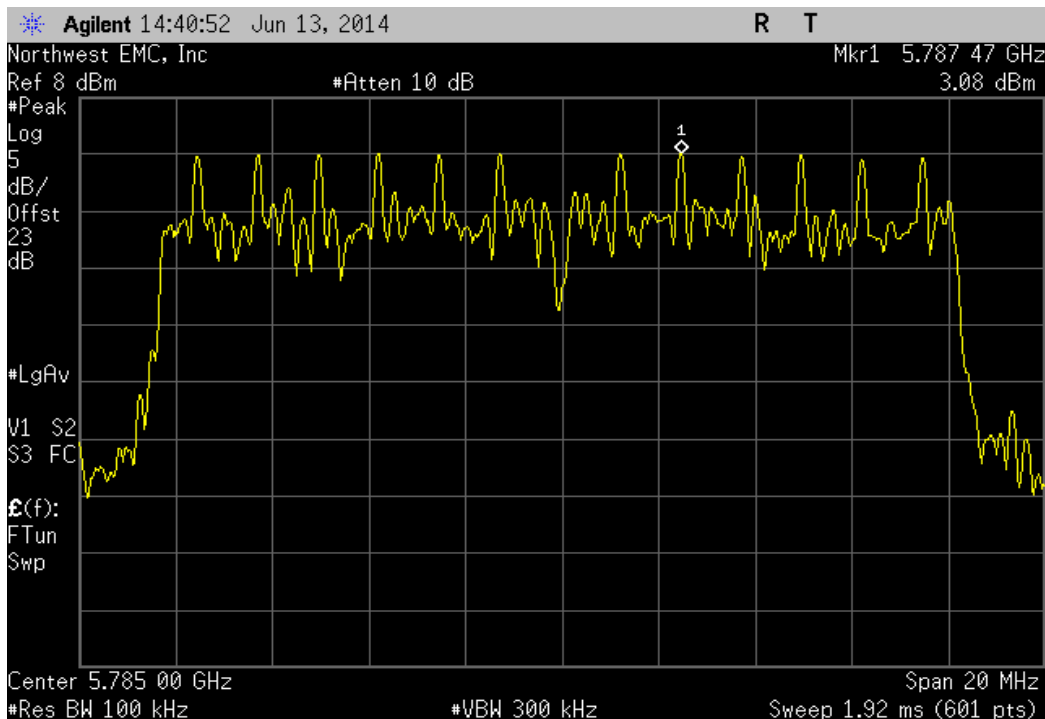
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.941	-15.2	-11.259	8	Pass



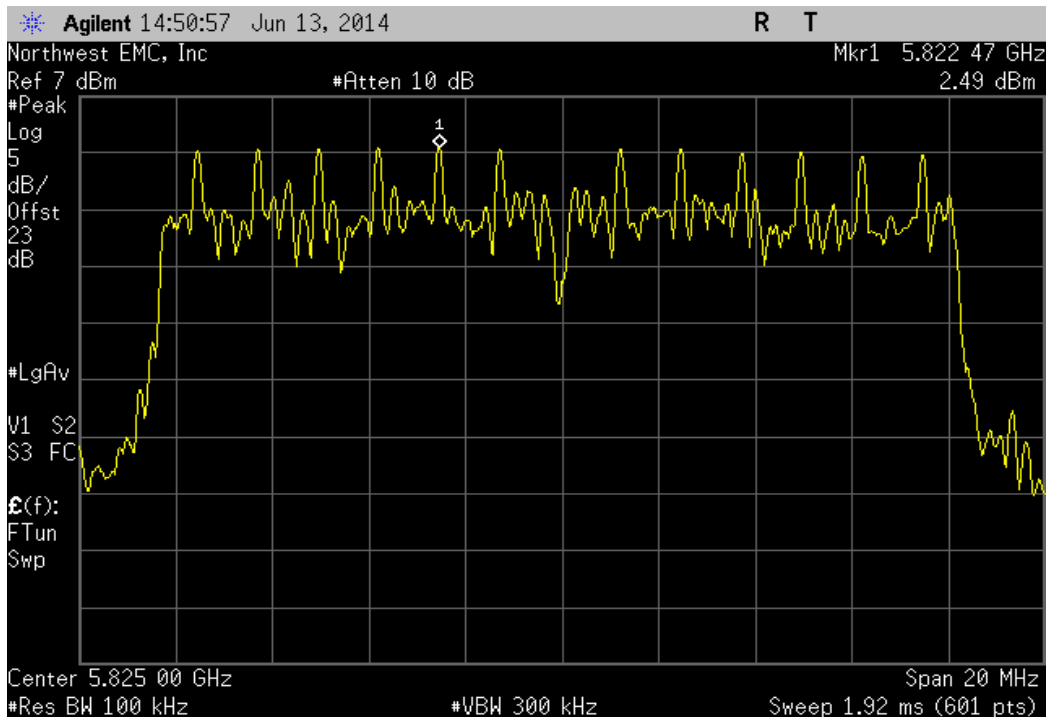
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.081	-15.2	-12.119	8	Pass



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.495	-15.2	-12.705	8	Pass



BAND EDGE COMPLIANCE

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 (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

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.



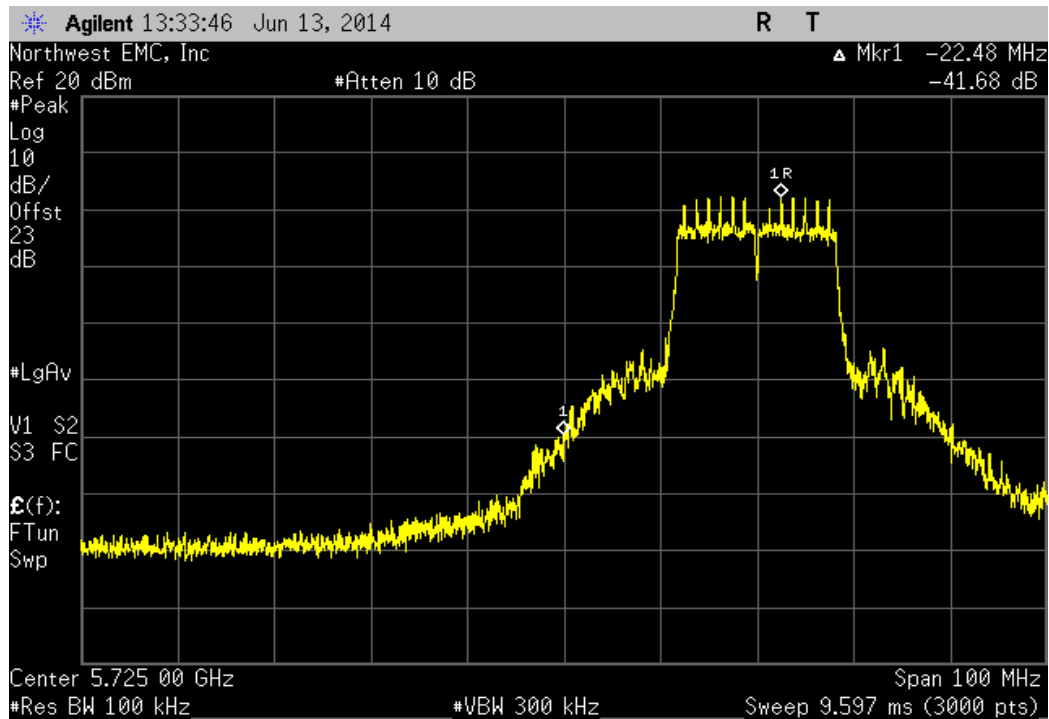
BAND EDGE COMPLIANCE

XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168	
Serial Number: 02EA41000011		Date: 06/13/14	
Customer: Summit Semiconductor LLC		Temperature: 22.5°C	
Attendees: None		Humidity: 43%	
Project: None		Barometric Pres.: 1019	
Tested by: Jared Ison		Power: 18 VDC	
Job Site: EV06			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Test was performed on the antenna port that produced the highest output power.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value	Limit
Antenna Port 1			Result
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		-41.68 dBc	≤ -20 dBc Pass
High Channel 165, 5825 MHz		-45.83 dBc	≤ -20 dBc Pass
802.11(a) 18 Mbps			
Low Channel 149, 5745 MHz		-37.24 dBc	≤ -20 dBc Pass
High Channel 165, 5825 MHz		-48.13 dBc	≤ -20 dBc Pass
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		-36.28 dBc	≤ -20 dBc Pass
High Channel 165, 5825 MHz		-45.32 dBc	≤ -20 dBc Pass

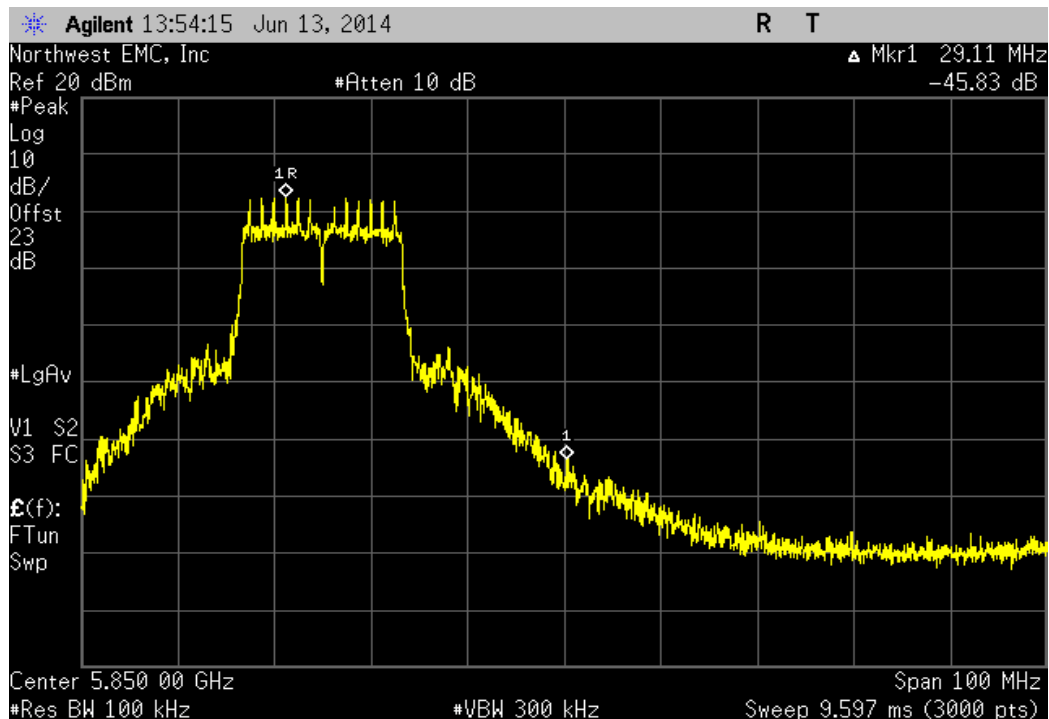
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
-41.68 dBc	≤ -20 dBc	Pass



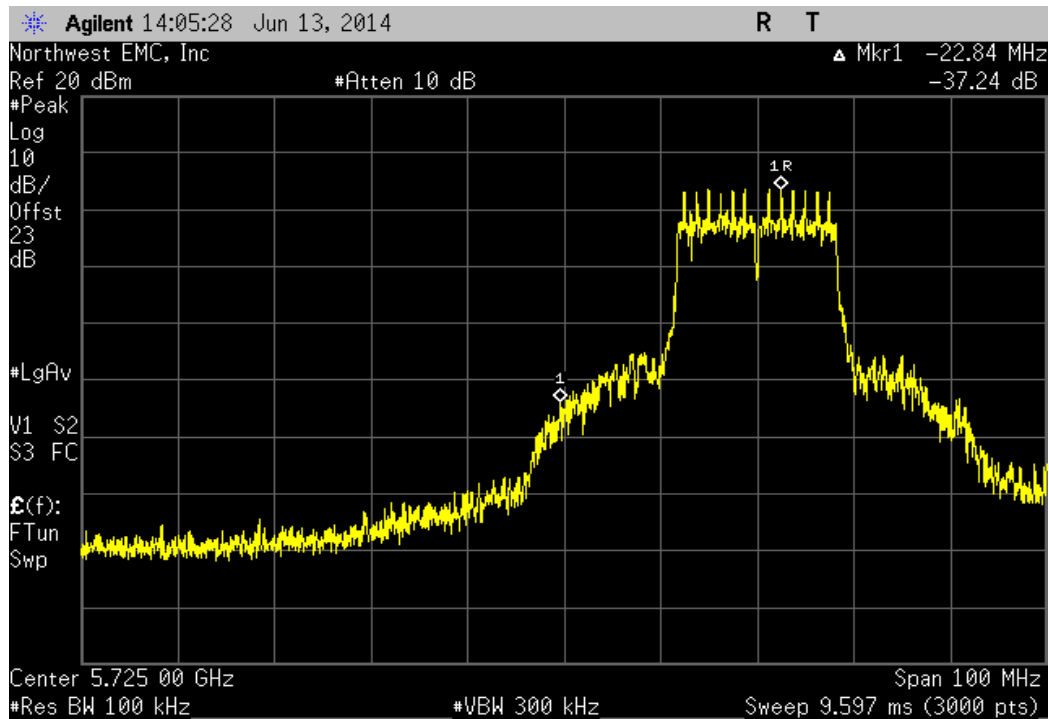
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
-45.83 dBc	≤ -20 dBc	Pass



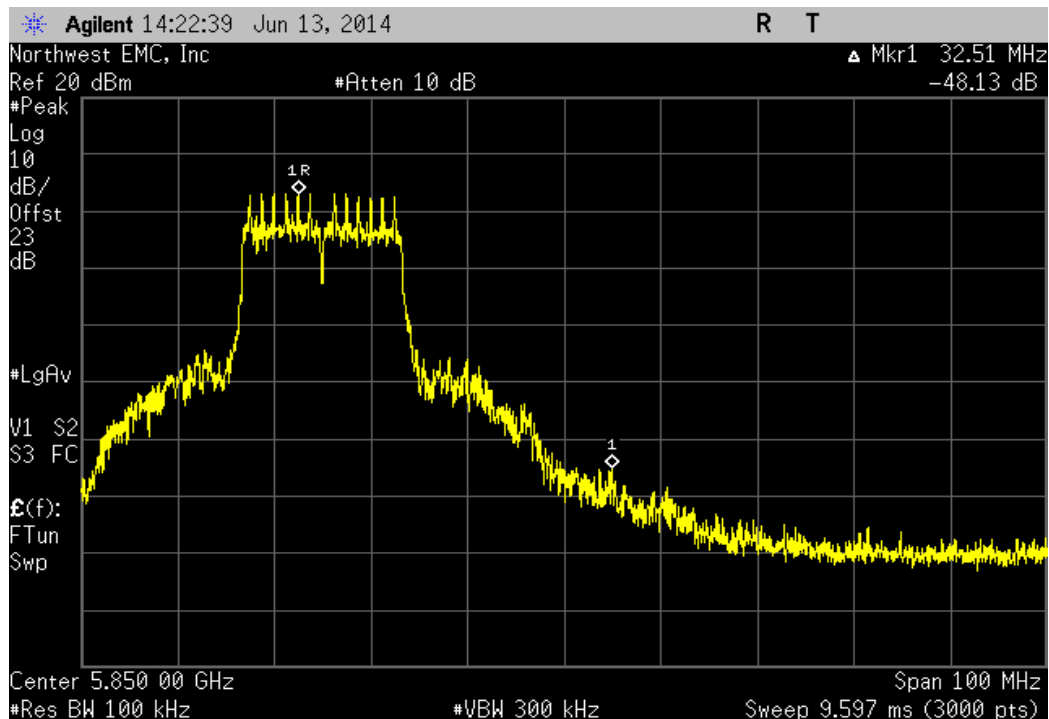
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
-37.24 dBc	≤ -20 dBc	Pass



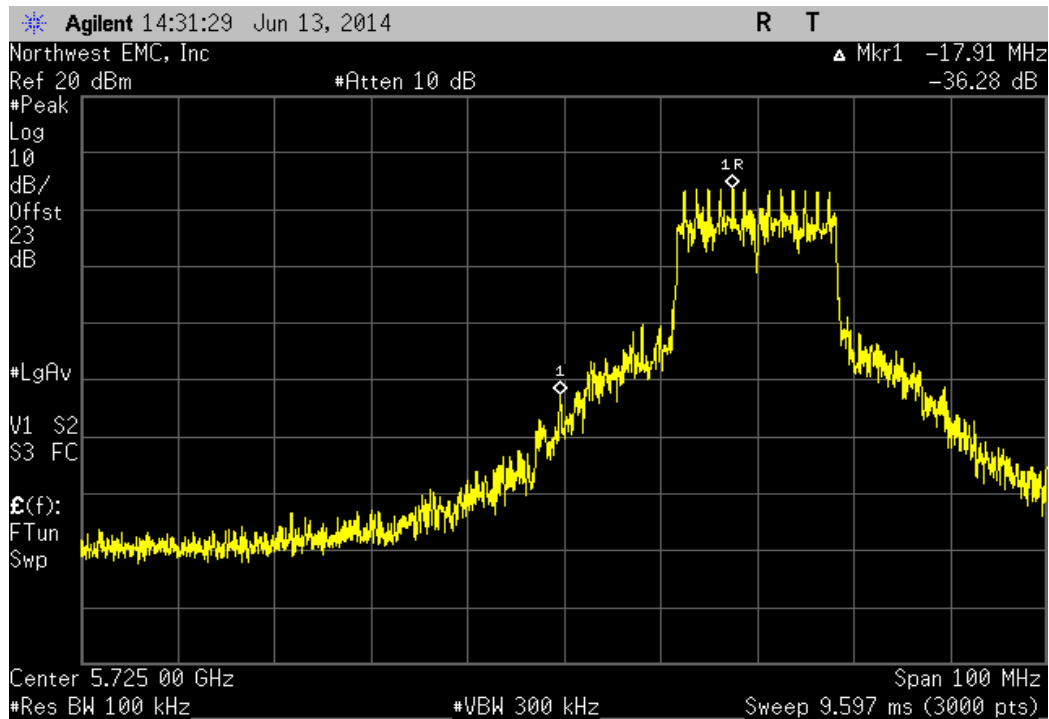
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
-48.13 dBc	≤ -20 dBc	Pass



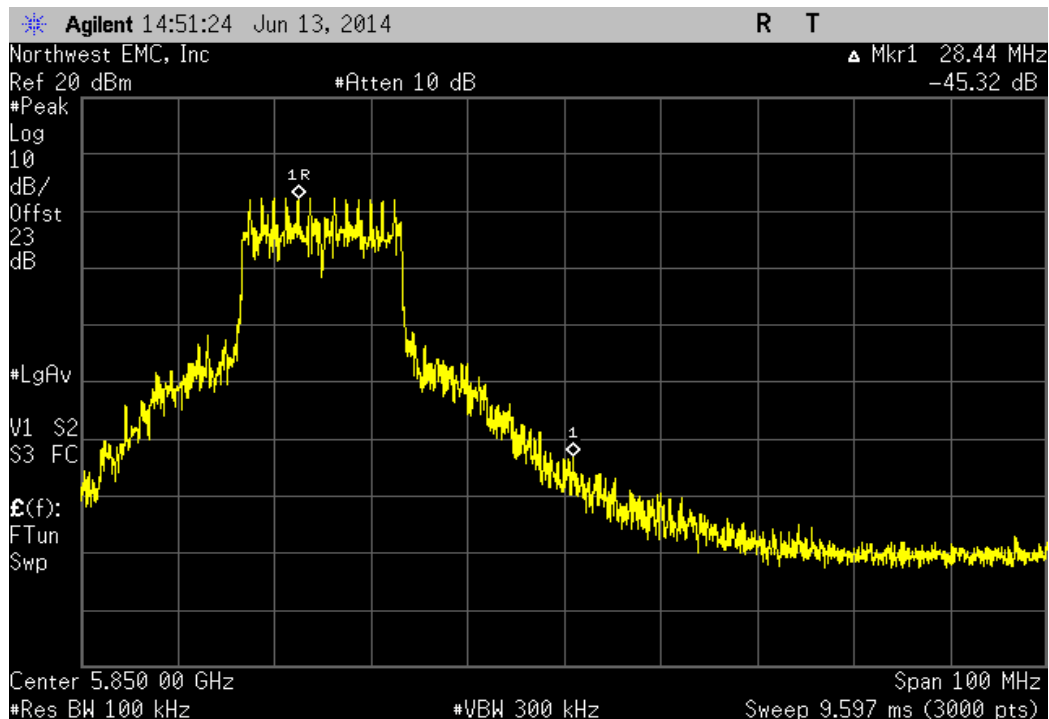
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
-36.28 dBc	≤ -20 dBc	Pass



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
-45.32 dBc	≤ -20 dBc	Pass



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	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	12/2/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36

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.

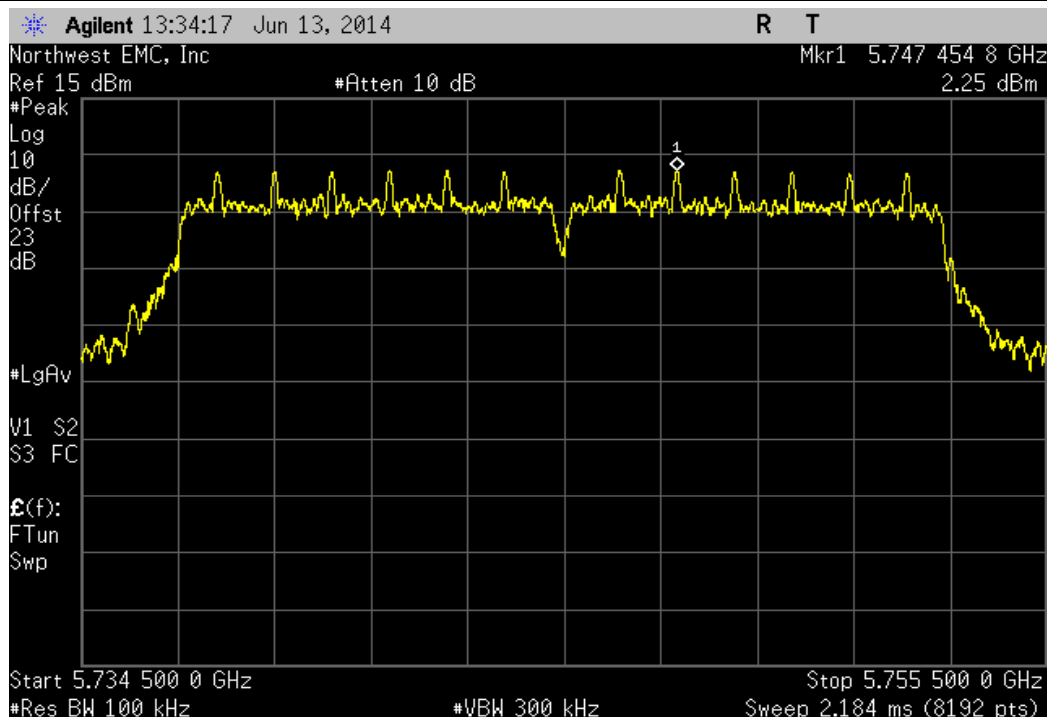


SPURIOUS CONDUCTED EMISSIONS

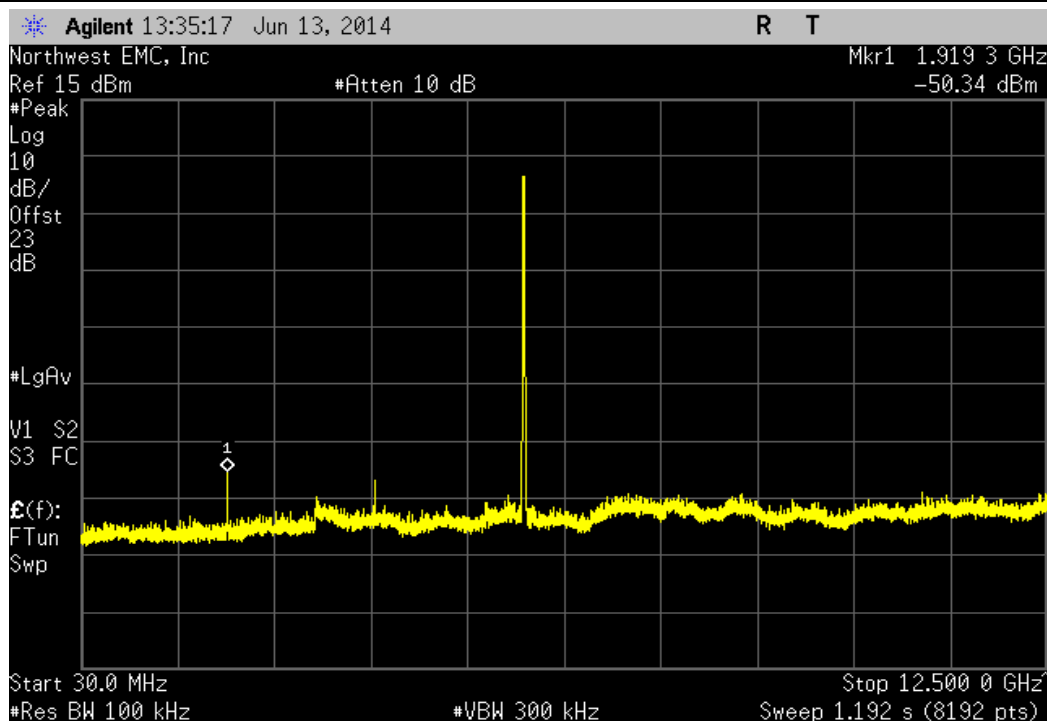
XMit 2014.02.07
PsaTx 2014.04.29

EUT: 444-2250		Work Order: FOCU0168			
Serial Number: 02EA41000011		Date: 06/13/14			
Customer: Summit Semiconductor LLC		Temperature: 22.5°C			
Attendees: None		Humidity: 43%			
Project: None		Barometric Pres.: 1019			
Tested by: Jared Ison		Power: 18 VDC			
Job Site: EV06		Test Method			
FCC 15.247:2014		ANSI C63.10:2009			
COMMENTS					
Test was performed on the antenna port that produced the highest output power.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	2	Signature 			
Antenna Port 1		Frequency Range	Value	Limit	Result
5725 MHz - 5850 MHz Band					
802.11(a) 6 Mbps					
Low Channel 149, 5745 MHz		Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz		30 MHz - 12.5 GHz	-52.59 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		12.5 GHz - 25 GHz	-49.35 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		25 GHz - 32 GHz	-46.46 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		32 GHz - 40 GHz	-38.65 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz		30 MHz - 12.5 GHz	-52.75 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		12.5 GHz - 25 GHz	-49.84 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		25 GHz - 32 GHz	-48.01 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		32 GHz - 40 GHz	-38.83 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz		30 MHz - 12.5 GHz	-52.63 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		12.5 GHz - 25 GHz	-48.95 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		25 GHz - 32 GHz	-48.29 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		32 GHz - 40 GHz	-38.81 dBc	≤ -20 dBc	Pass
802.11(a) 18 Mbps					
Low Channel 149, 5745 MHz		Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz		30 MHz - 12.5 GHz	-54.62 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		12.5 GHz - 25 GHz	-50.48 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		25 GHz - 32 GHz	-49.03 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		32 GHz - 40 GHz	-40.21 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz		30 MHz - 12.5 GHz	-52.93 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		12.5 GHz - 25 GHz	-49.31 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		25 GHz - 32 GHz	-48.77 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		32 GHz - 40 GHz	-38.41 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz		30 MHz - 12.5 GHz	-53.5 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		12.5 GHz - 25 GHz	-50.38 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		25 GHz - 32 GHz	-47.87 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		32 GHz - 40 GHz	-38.8 dBc	≤ -20 dBc	Pass
802.11(a) 36 Mbps					
Low Channel 149, 5745 MHz		Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz		30 MHz - 12.5 GHz	-53.26 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		12.5 GHz - 25 GHz	-51.12 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		25 GHz - 32 GHz	-49.13 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz		32 GHz - 40 GHz	-39.31 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz		30 MHz - 12.5 GHz	-52.42 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		12.5 GHz - 25 GHz	-50.22 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		25 GHz - 32 GHz	-48.65 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz		32 GHz - 40 GHz	-38.58 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz		30 MHz - 12.5 GHz	-53.84 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		12.5 GHz - 25 GHz	-48.67 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		25 GHz - 32 GHz	-48.52 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz		32 GHz - 40 GHz	-38.03 dBc	≤ -20 dBc	Pass

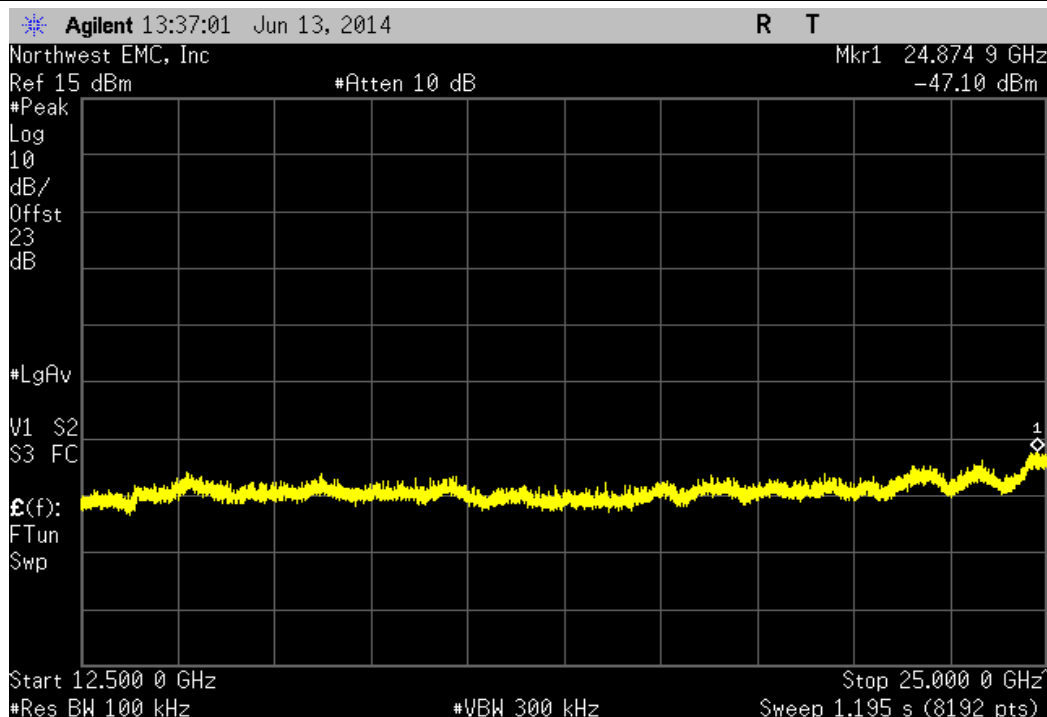
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



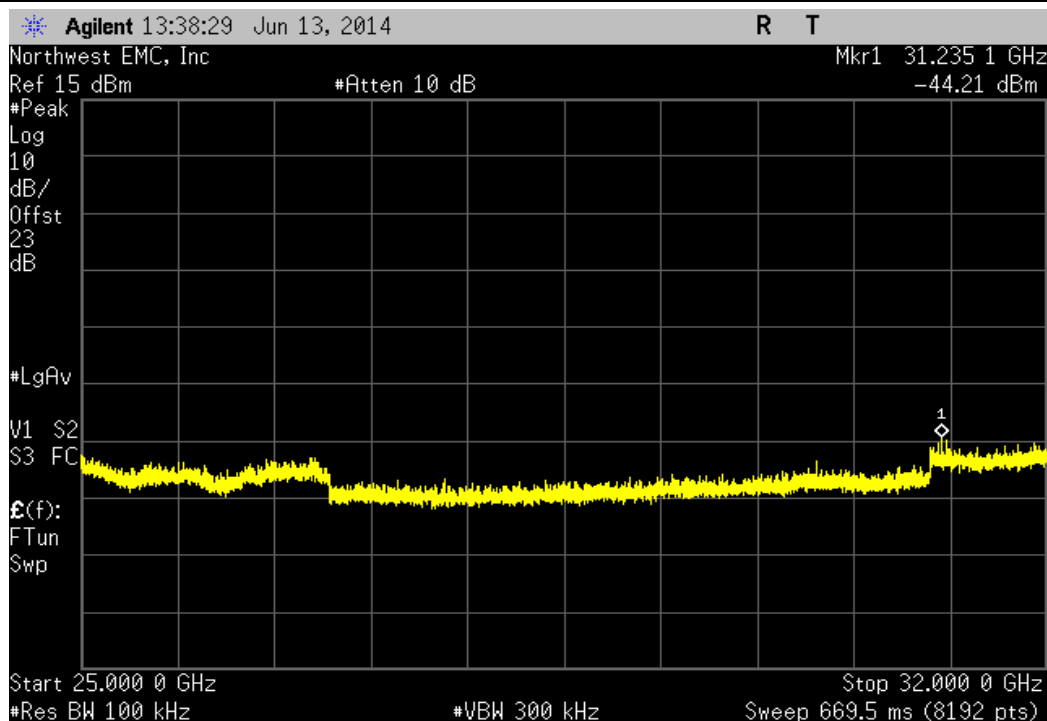
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-52.59 dBc	≤ -20 dBc	Pass



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-49.35 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-46.46 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-38.65 dBc

≤ -20 dBc

Pass

Agilent 13:39:17 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.148 1 GHz

Ref 15 dBm

#Atten 10 dB

-36.40 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 13:44:00 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.787 452 7 GHz

Ref 15 dBm

#Atten 10 dB

2.74 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.775 000 0 GHz

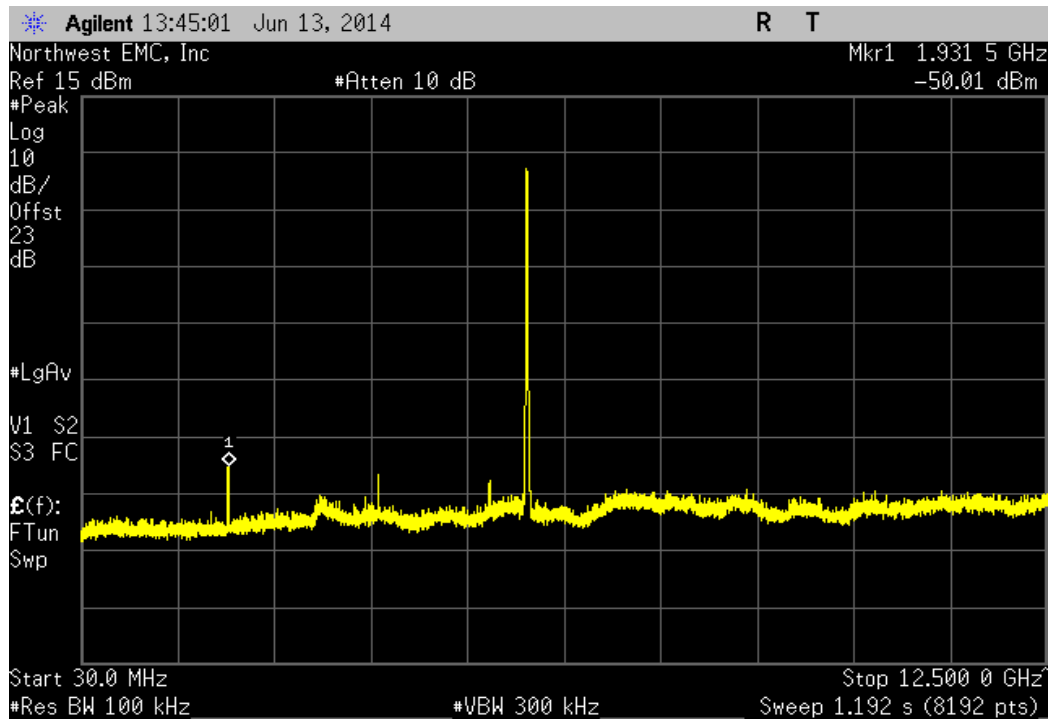
Stop 5.795 000 0 GHz

#Res BW 100 kHz

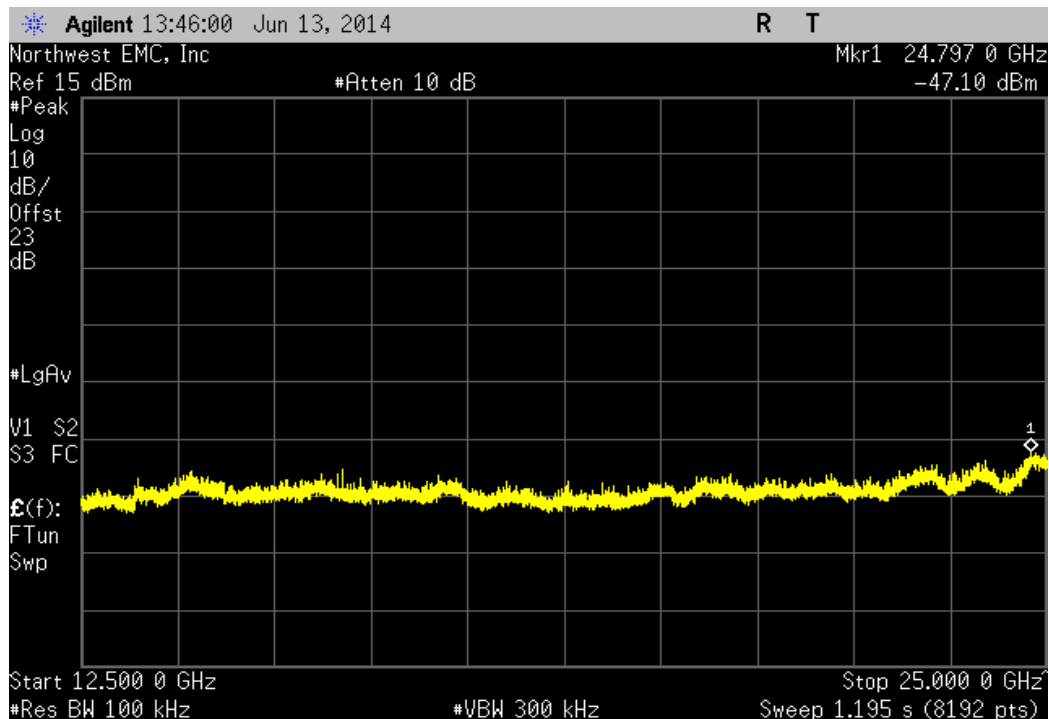
#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

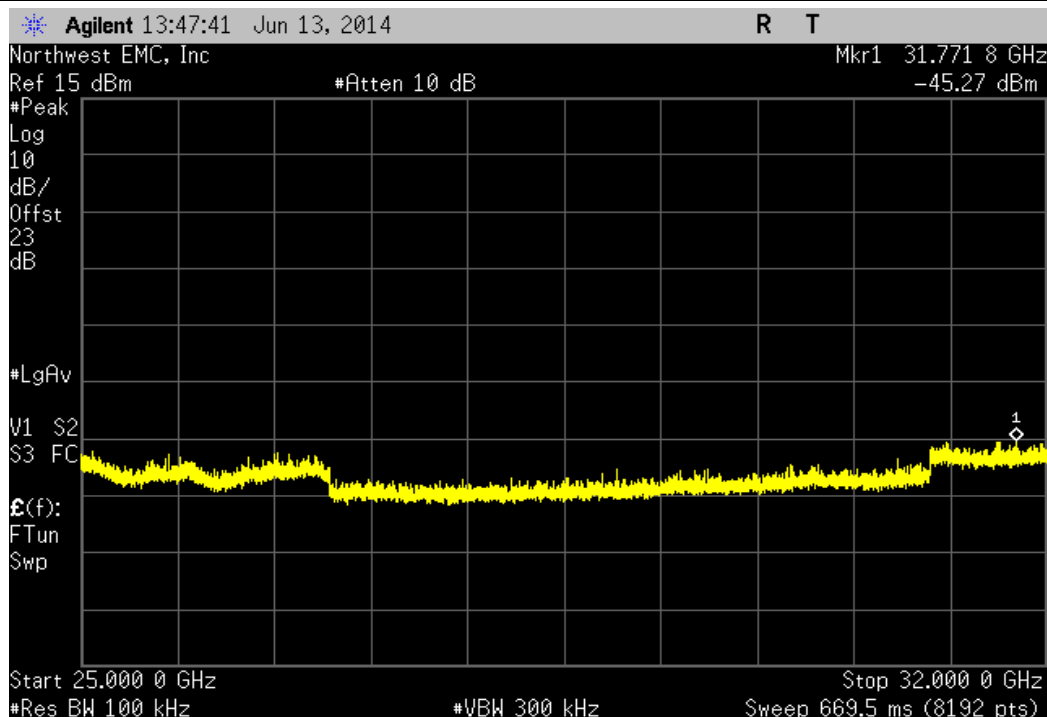
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-52.75 dBc	≤ -20 dBc	Pass	



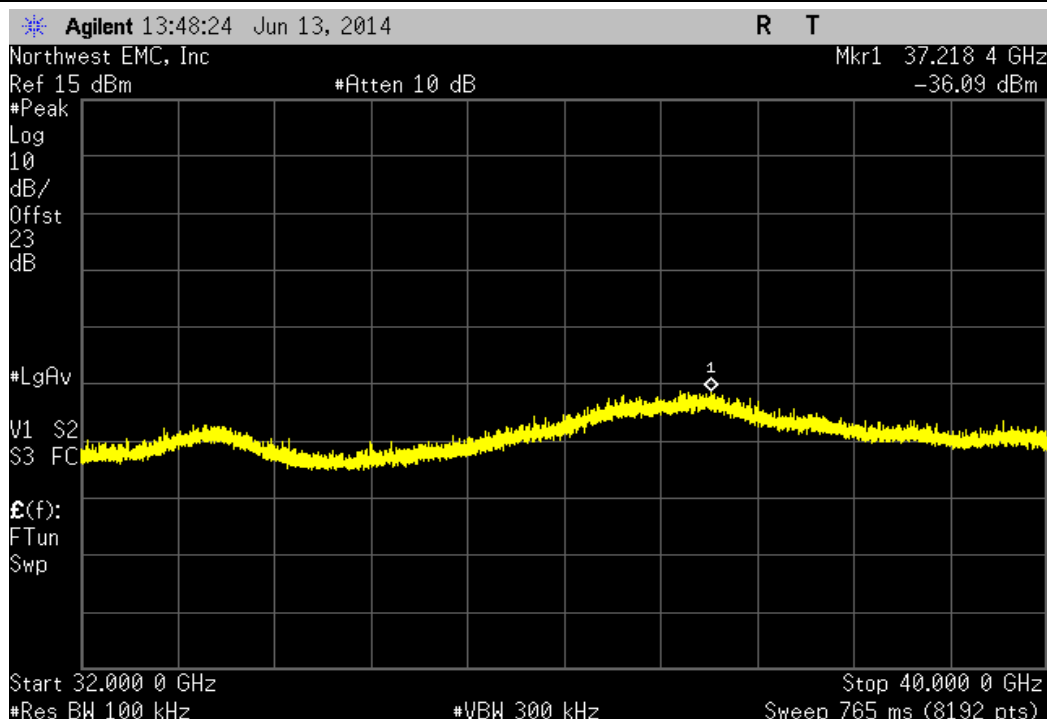
Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-49.84 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-48.01 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-38.83 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 13:55:56 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.822 455 4 GHz

Ref 15 dBm

#Atten 10 dB

2.49 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.814 500 0 GHz

Stop 5.835 500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-52.63 dBc

≤ -20 dBc

Pass

Agilent 13:56:54 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.946 7 GHz

Ref 15 dBm

#Atten 10 dB

-50.14 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-48.95 dBc

≤ -20 dBc

Pass

Agilent 13:58:17 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.826 0 GHz

Ref 15 dBm

#Atten 10 dB

-46.46 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-48.29 dBc

≤ -20 dBc

Pass

Agilent 13:59:01 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.262 5 GHz

Ref 15 dBm

#Atten 10 dB

-45.80 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-38.81 dBc

≤ -20 dBc

Pass

Agilent 13:59:47 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.351 2 GHz

Ref 15 dBm

#Atten 10 dB

-36.32 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:06:01 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.742 454 5 GHz

Ref 15 dBm

#Atten 10 dB

3.66 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.735 000 0 GHz

Stop 5.755 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-54.62 dBc

≤ -20 dBc

Pass

Agilent 14:07:01 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.919 3 GHz

Ref 15 dBm

#Atten 10 dB

-50.95 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-50.48 dBc

≤ -20 dBc

Pass

Agilent 14:08:01 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.839 8 GHz

Ref 15 dBm

#Atten 10 dB

-46.81 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-49.03 dBc

≤ -20 dBc

Pass

Agilent 14:08:43 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.207 8 GHz

Ref 15 dBm

#Atten 10 dB

-45.36 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-40.21 dBc

≤ -20 dBc

Pass

Agilent 14:09:27 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.143 2 GHz

Ref 15 dBm

#Atten 10 dB

-36.54 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:14:43 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.781 204 4 GHz

Ref 15 dBm

#Atten 10 dB

3.11 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.775 000 0 GHz

Stop 5.795 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-52.93 dBc

≤ -20 dBc

Pass

Agilent 14:15:42 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.933 0 GHz

Ref 15 dBm

#Atten 10 dB

-49.82 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-49.31 dBc

≤ -20 dBc

Pass

Agilent 14:16:40 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.816 9 GHz

Ref 15 dBm

#Atten 10 dB

-46.20 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-48.77 dBc

≤ -20 dBc

Pass

Agilent 14:17:32 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.165 1 GHz

Ref 15 dBm

#Atten 10 dB

-45.66 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-38.41 dBc

≤ -20 dBc

Pass

Agilent 14:18:33 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.204 7 GHz

Ref 15 dBm

#Atten 10 dB

-35.30 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:23:16 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.821 204 4 GHz

Ref 15 dBm

#Atten 10 dB

3.12 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.815 000 0 GHz

Stop 5.835 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-53.5 dBc

≤ -20 dBc

Pass

Agilent 14:24:31 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.936 0 GHz

Ref 15 dBm

#Atten 10 dB

-50.38 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-50.38 dBc

≤ -20 dBc

Pass

Agilent 14:25:33 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.826 0 GHz

Ref 15 dBm

#Atten 10 dB

-47.26 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-47.87 dBc

≤ -20 dBc

Pass

Agilent 14:26:23 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.200 1 GHz

Ref 15 dBm

#Atten 10 dB

-44.75 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 18 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-38.8 dBc

≤ -20 dBc

Pass

Agilent 14:27:11 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.246 7 GHz

Ref 15 dBm

#Atten 10 dB

-35.68 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:31:58 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.742 454 5 GHz

Ref 15 dBm

#Atten 10 dB

3.78 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.735 000 0 GHz

Stop 5.755 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-53.26 dBc

≤ -20 dBc

Pass

Agilent 14:32:58 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.919 3 GHz

Ref 15 dBm

#Atten 10 dB

-49.48 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

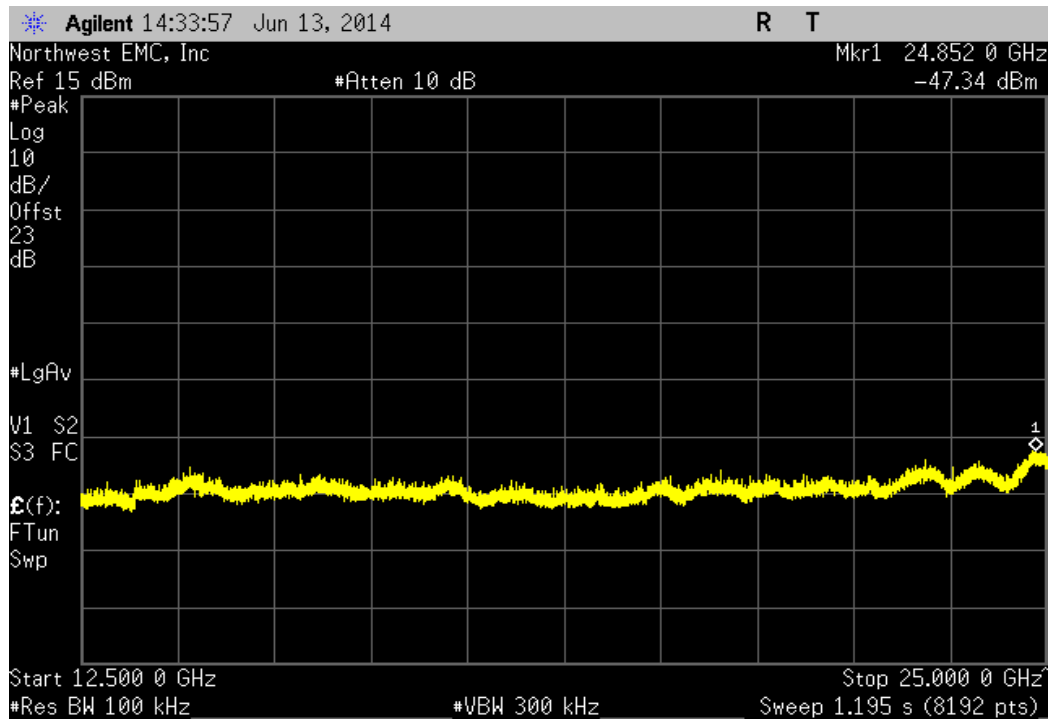
Stop 12.500 0 GHz

#Res BW 100 kHz

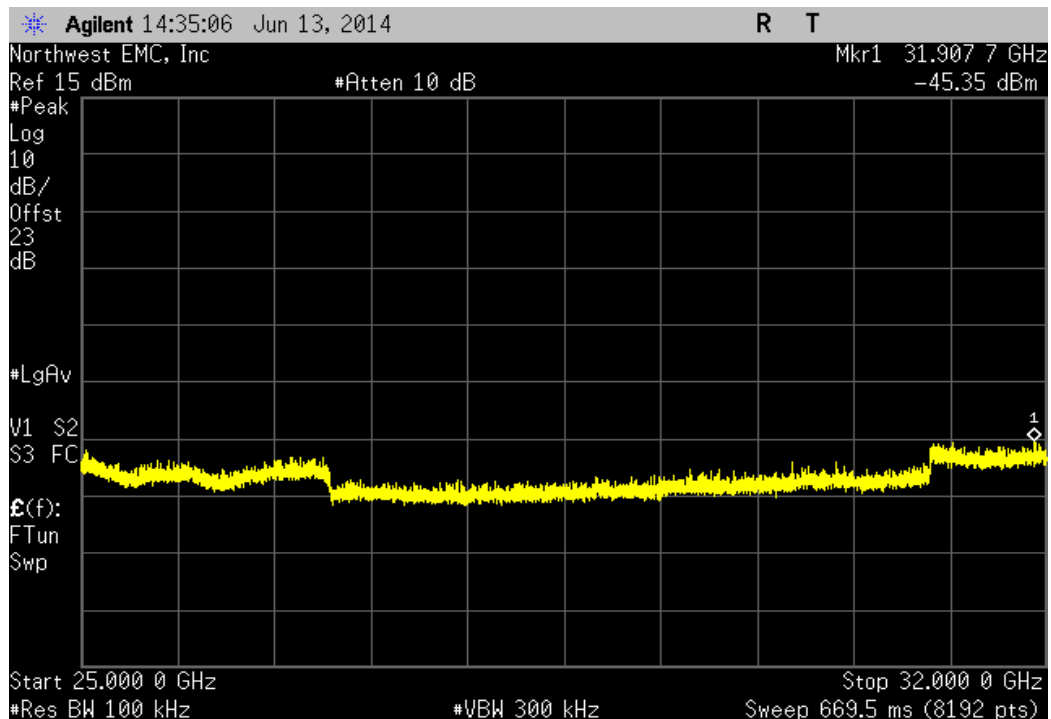
#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-51.12 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-49.13 dBc	≤ -20 dBc	Pass	



Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-39.31 dBc

≤ -20 dBc

Pass

Agilent 14:35:59 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 36.937 1 GHz

Ref 15 dBm

#Atten 10 dB

-35.53 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:41:36 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.781 204 4 GHz

Ref 15 dBm

#Atten 10 dB

3.08 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.775 000 0 GHz

Stop 5.795 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-52.42 dBc

≤ -20 dBc

Pass

Agilent 14:42:36 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.933 0 GHz

Ref 15 dBm

#Atten 10 dB

-49.34 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-50.22 dBc

≤ -20 dBc

Pass

Agilent 14:43:37 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.850 4 GHz

Ref 15 dBm

#Atten 10 dB

-47.14 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-48.65 dBc

≤ -20 dBc

Pass

Agilent 14:44:25 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.625 7 GHz

Ref 15 dBm

#Atten 10 dB

-45.57 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Frequency

Range

Value

Limit

Result

32 GHz - 40 GHz

-38.58 dBc

≤ -20 dBc

Pass

Agilent 14:46:00 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 37.194 0 GHz

Ref 15 dBm

#Atten 10 dB

-35.50 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 32.000 0 GHz

Stop 40.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 765 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

Fundamental

N/A

N/A

N/A

Agilent 14:51:53 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 5.822 454 5 GHz

Ref 15 dBm

#Atten 10 dB

2.43 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 5.815 000 0 GHz

Stop 5.835 000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.184 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

30 MHz - 12.5 GHz

-53.84 dBc

≤ -20 dBc

Pass

Agilent 14:52:58 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 1.946 7 GHz

Ref 15 dBm

#Atten 10 dB

-51.41 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 30.0 MHz

Stop 12.500 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.192 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

12.5 GHz - 25 GHz

-48.67 dBc

≤ -20 dBc

Pass

Agilent 14:54:18 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 24.859 6 GHz

Ref 15 dBm

#Atten 10 dB

-46.24 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 12.500 0 GHz

Stop 25.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.195 s (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Frequency

Range

Value

Limit

Result

25 GHz - 32 GHz

-48.52 dBc

≤ -20 dBc

Pass

Agilent 14:55:03 Jun 13, 2014

R T

Northwest EMC, Inc

Mkr1 31.389 0 GHz

Ref 15 dBm

#Atten 10 dB

-46.09 dBm

#Peak

Log

10

dB/

Offst

23

dB

#LgAv

V1 S2

S3 FC

£(f):

FTun

Swp

Start 25.000 0 GHz

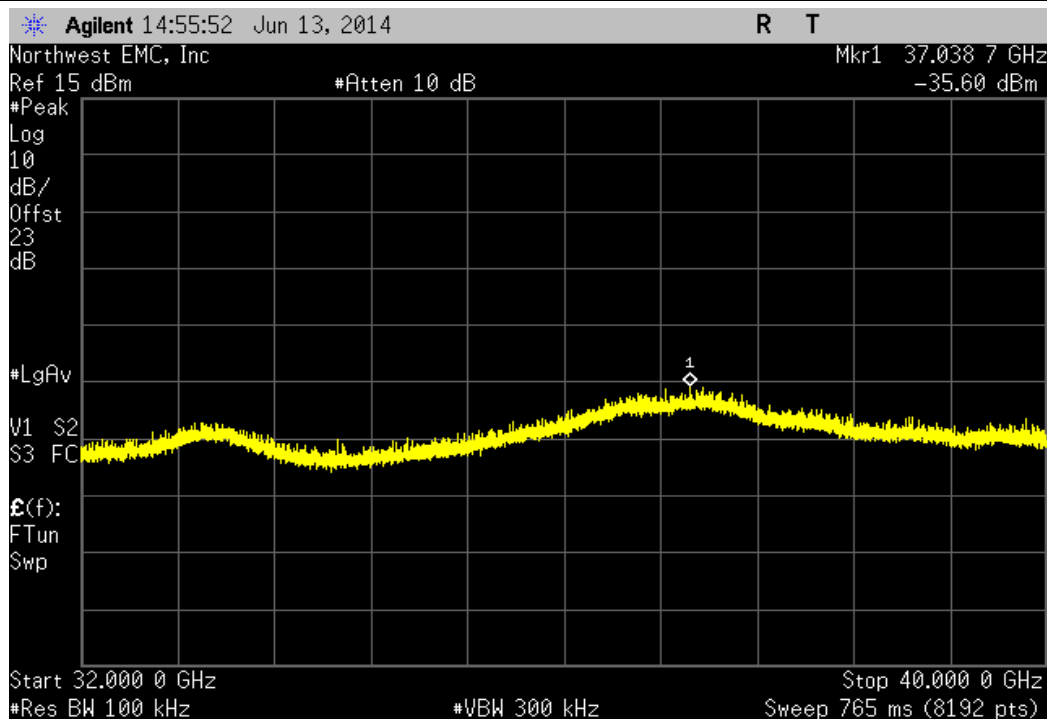
Stop 32.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 669.5 ms (8192 pts)

Antenna Port 1, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency		Value	Limit	Result
Range				
32 GHz - 40 GHz		-38.03 dBc	≤ -20 dBc	Pass



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

Ch. 149, 5745 MHz

Ch. 157, 5785 MHz

Ch. 165, 5825 MHz

MODES OF OPERATION

6 Mbps

18 Mbps

36 Mbps

POWER SETTINGS INVESTIGATED

18 VDC

CONFIGURATIONS INVESTIGATED

FOCU0168 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40000 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

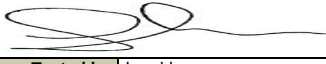
Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna, Horn	EMCO	3115	AHF	10/6/2011	36 mo
EV01 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	ECC	8/26/2013	12 mo
OC Cable	ESM Cable Corp.	KMKM-72	OCV	6/24/2013	12 mo
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/24/2013	12 mo
Cable	ESM Cable Corp.	KMKM-72	EYV	9/10/2013	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/10/2013	12 mo
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0 mo
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/18/2014	12 mo
Antenna, Horn	ETS	3160-08	AHV	NCR	0 mo
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2/18/2014	12 mo
Antenna, Horn	ETS	3160-07	AHU	NCR	0 mo
BP Filter	Micro-Tronics	BRC50703	HHJ	6/20/2013	36 mo
5.725-5.875 Notch Filter	Micro-Tronics	BRC50705	HGJ	2/18/2014	24 mo
5.47-5.725 Notch Filter	Micro-Tronics	BRC50704	HGI	10/4/2012	24 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	2/18/2014	12 mo
Antenna, Horn	ETS	3115	AIZ	1/24/2014	24 mo
LP Filter	Micro-Tronics	LPM50004	LFD	7/6/2012	24 mo
EV01 Cables	N/A	Bilog Cables	EVA	2/18/2014	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/18/2014	12 mo
Antenna, Biconilog	EMCO	3141	AXG	4/10/2012	36 mo
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	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

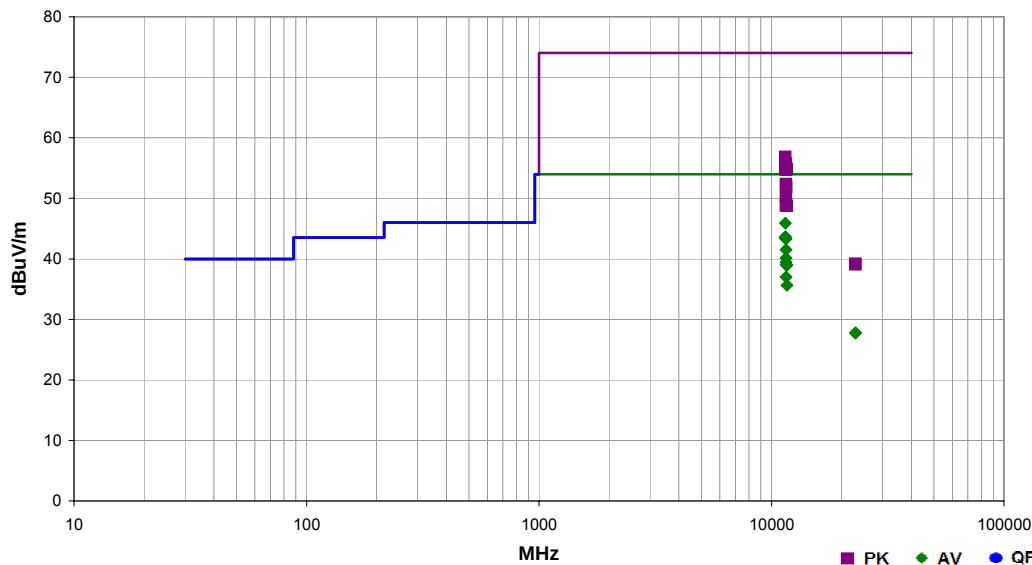
TEST DESCRIPTION

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.

Work Order:	FOCU0168	Date:	06/18/14	
Project:	None	Temperature:	22.2 °C	
Job Site:	EV01	Humidity:	39.7% RH	
Serial Number:	02EA310000BA	Barometric Pres.:	1020.3 mbar	
EUT:	444-2250	Tested by:	Jared Ison	
Configuration:	1			
Customer:	Summit Semiconductor LLC			
Attendees:	None			
EUT Power:	18 VDC			
Operating Mode:	Continous Transmit			
Deviations:	None			
Comments:	Reference data comments for EUT channel, frequency, data rate and orientation.			

Test Specifications	Test Method
FCC 15.247:2014	ANSI C63.10:2009

Run #	55	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
11488.630	50.0	-4.1	1.1	17.0	3.0	0.0	Vert	AV	0.0	45.9	54.0	-8.1	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
11488.600	47.7	-4.1	1.0	270.0	3.0	0.0	Horz	AV	0.0	43.6	54.0	-10.4	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
11488.530	43.6	0.0	1.0	110.0	3.0	0.0	Horz	AV	0.0	43.6	54.0	-10.4	Ch. 149(5745MHz), 6Mbps, Ant 4, EUT Vert
11488.560	43.4	0.0	1.0	332.0	3.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	Ch. 149(5745MHz), 6Mbps, Ant 4, EUT Horz
11568.630	47.0	-3.7	1.1	6.0	3.0	0.0	Vert	AV	0.0	43.3	54.0	-10.7	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Vert
11568.610	45.2	-3.7	1.2	335.0	3.0	0.0	Vert	AV	0.0	41.5	54.0	-12.5	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT On Side
11568.680	43.8	-3.7	1.0	276.0	3.0	0.0	Horz	AV	0.0	40.1	54.0	-13.9	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Vert
11568.640	43.1	-3.7	1.4	163.0	3.0	0.0	Horz	AV	0.0	39.4	54.0	-14.6	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Horz
11568.680	42.7	-3.7	1.0	347.0	3.0	0.0	Horz	AV	0.0	39.0	54.0	-15.0	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT On Side
11648.540	42.3	-3.3	1.2	3.0	3.0	0.0	Vert	AV	0.0	39.0	54.0	-15.0	Ch. 165(5825MHz), 6Mbps, Ant 1, EUT Vert
11568.540	40.7	-3.7	1.4	39.0	3.0	0.0	Vert	AV	0.0	37.0	54.0	-17.0	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Horz
11488.760	60.9	-4.1	1.1	17.0	3.0	0.0	Vert	PK	0.0	56.8	74.0	-17.2	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
11568.140	59.4	-3.7	1.1	6.0	3.0	0.0	Vert	PK	0.0	55.7	74.0	-18.3	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Vert
11648.740	39.0	-3.3	1.0	235.0	3.0	0.0	Horz	AV	0.0	35.7	54.0	-18.3	Ch. 165(5825MHz), 6Mbps, Ant 1, EUT Vert
11488.400	59.7	-4.1	1.0	270.0	3.0	0.0	Horz	PK	0.0	55.6	74.0	-18.4	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
11488.740	55.2	0.0	1.0	332.0	3.0	0.0	Vert	PK	0.0	55.2	74.0	-18.8	Ch. 149(5745MHz), 6Mbps, Ant 4, EUT Horz
11489.680	54.9	0.0	1.0	110.0	3.0	0.0	Horz	PK	0.0	54.9	74.0	-19.1	Ch. 149(5745MHz), 6Mbps, Ant 4, EUT Vert
11648.130	58.2	-3.3	1.2	3.0	3.0	0.0	Vert	PK	0.0	54.9	74.0	-19.1	Ch. 165(5825MHz), 6Mbps, Ant 1, EUT Vert
11568.370	58.4	-3.7	1.0	276.0	3.0	0.0	Horz	PK	0.0	54.7	74.0	-19.3	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Vert
11568.940	56.0	-3.7	1.2	335.0	3.0	0.0	Vert	PK	0.0	52.3	74.0	-21.7	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT On Side
11570.650	55.5	-3.7	1.0	347.0	3.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT On Side
11568.960	54.0	-3.7	1.4	163.0	3.0	0.0	Horz	PK	0.0	50.3	74.0	-23.7	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Horz
11568.860	52.5	-3.7	1.4	39.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	Ch. 157(5785MHz), 6Mbps, Ant 1, EUT Horz
11647.860	52.1	-3.4	1.0	235.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3	Ch. 165(5825MHz), 6Mbps, Ant 1, EUT Vert
22981.010	27.4	0.4	1.1	7.0	3.0	0.0	Horz	AV	0.0	27.8	54.0	-26.2	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
22981.400	27.4	0.4	1.1	33.0	3.0	0.0	Vert	AV	0.0	27.8	54.0	-26.2	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
22981.350	38.8	0.4	1.1	33.0	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert
22979.740	38.7	0.4	1.1	7.0	3.0	0.0	Horz	PK	0.0	39.1	74.0	-34.9	Ch. 149(5745MHz), 6Mbps, Ant 1, EUT Vert

AC POWERLINE CONDUCTED EMISSIONS

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. 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 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50 Ω .

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
EV07 Cables	N/A	Conducted Cables	EVG	03/07/2014	12 mo
Attenuator	Fairview Microwave	SA6B10W-20	RKA	10/24/2013	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHD	01/22/2014	12 mo
Receiver	Rohde & Schwarz	ESCI	ARH	02/05/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIR	10/09/2013	12 mo

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.94 dB	-2.94 dB

CONFIGURATIONS INVESTIGATED

FOCU0168-3

MODES INVESTIGATED

Continuous Transmit, Ch. 149 5745 MHz, 6Mbps, Ant 1
Continuous Transmit, Ch. 157 5785 MHz, 6Mbps, Ant 1
Continuous Transmit, Ch. 165 5825 MHz, 6Mbps, Ant 1

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	17	Line:	High Line	Ext. Attenuation (dB):	20
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COMMENTS

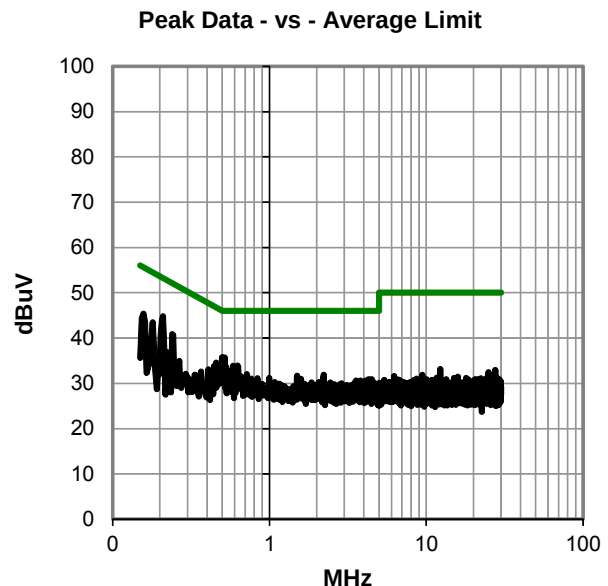
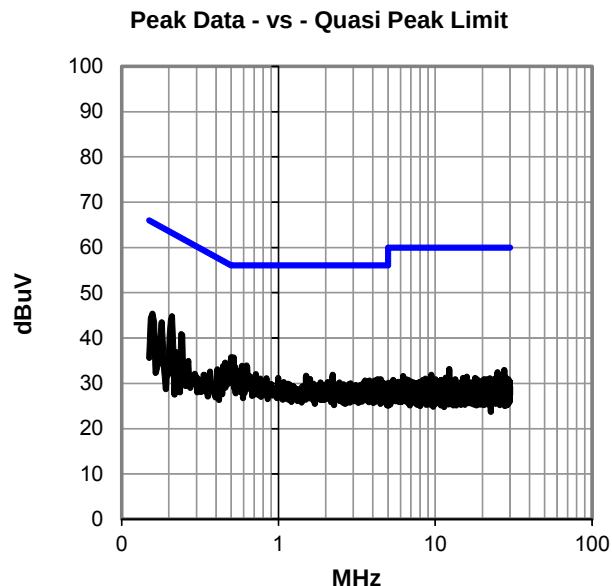
None

EUT OPERATING MODES

Continuous Transmit, Ch. 149 5745 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #17

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.210	25.1	19.7	44.8	63.2	-18.4
0.157	25.7	19.7	45.4	65.6	-20.2
0.501	16.0	19.8	35.8	56.0	-20.2
0.519	15.9	19.8	35.7	56.0	-20.3
0.180	23.7	19.7	43.4	64.5	-21.0
0.240	21.1	19.7	40.8	62.1	-21.3
0.628	14.2	19.8	34.0	56.0	-22.0
0.587	14.1	19.8	33.9	56.0	-22.1
0.456	14.8	19.8	34.6	56.8	-22.2
0.527	13.8	19.8	33.6	56.0	-22.4
0.445	14.1	19.8	33.9	57.0	-23.1
0.467	13.6	19.8	33.4	56.6	-23.2
0.560	12.9	19.8	32.7	56.0	-23.3
0.717	12.3	19.8	32.1	56.0	-23.9
0.538	12.2	19.8	32.0	56.0	-24.0
2.217	12.3	19.6	31.9	56.0	-24.1
1.501	12.0	19.7	31.7	56.0	-24.3
0.407	13.3	19.8	33.1	57.7	-24.6
0.997	11.5	19.7	31.2	56.0	-24.8
0.687	11.4	19.8	31.2	56.0	-24.8
0.836	11.4	19.7	31.1	56.0	-24.9
0.762	11.3	19.7	31.0	56.0	-25.0
1.586	11.3	19.6	30.9	56.0	-25.1
4.295	11.3	19.6	30.9	56.0	-25.1
4.500	11.3	19.6	30.9	56.0	-25.1
4.433	11.1	19.6	30.7	56.0	-25.3

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.210	25.1	19.7	44.8	53.2	-8.4
0.157	25.7	19.7	45.4	55.6	-10.2
0.501	16.0	19.8	35.8	46.0	-10.2
0.519	15.9	19.8	35.7	46.0	-10.3
0.180	23.7	19.7	43.4	54.5	-11.0
0.240	21.1	19.7	40.8	52.1	-11.3
0.628	14.2	19.8	34.0	46.0	-12.0
0.587	14.1	19.8	33.9	46.0	-12.1
0.456	14.8	19.8	34.6	46.8	-12.2
0.527	13.8	19.8	33.6	46.0	-12.4
0.445	14.1	19.8	33.9	47.0	-13.1
0.467	13.6	19.8	33.4	46.6	-13.2
0.560	12.9	19.8	32.7	46.0	-13.3
0.717	12.3	19.8	32.1	46.0	-13.9
0.538	12.2	19.8	32.0	46.0	-14.0
2.217	12.3	19.6	31.9	46.0	-14.1
1.501	12.0	19.7	31.7	46.0	-14.3
0.407	13.3	19.8	33.1	47.7	-14.6
0.997	11.5	19.7	31.2	46.0	-14.8
0.687	11.4	19.8	31.2	46.0	-14.8
0.836	11.4	19.7	31.1	46.0	-14.9
0.762	11.3	19.7	31.0	46.0	-15.0
1.586	11.3	19.6	30.9	46.0	-15.1
4.295	11.3	19.6	30.9	46.0	-15.1
4.500	11.3	19.6	30.9	46.0	-15.1
4.433	11.1	19.6	30.7	46.0	-15.3

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	18	Line:	Neutral	Ext. Attenuation (dB):	20
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COMMENTS

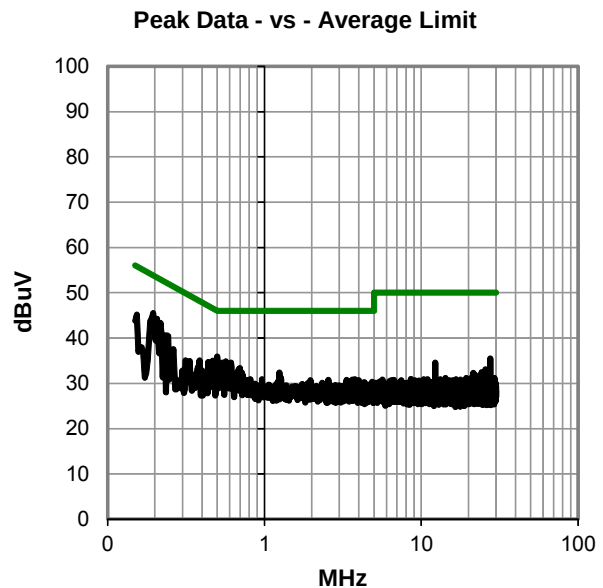
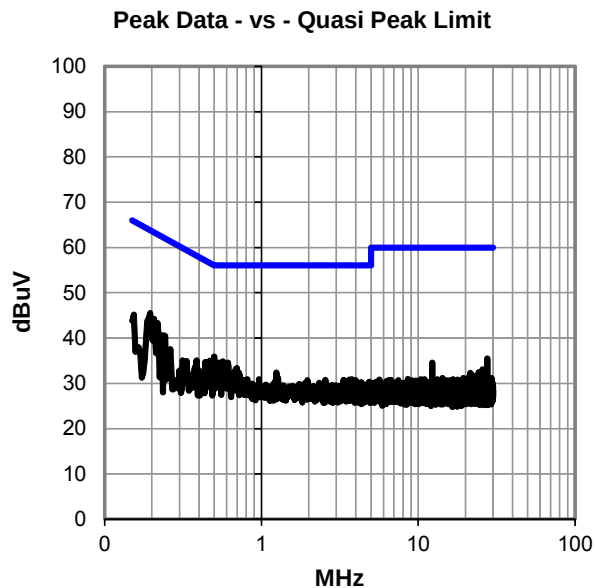
None

EUT OPERATING MODES

Continuous Transmit, Ch. 149 5745 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #18

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.195	25.8	19.7	45.5	63.8	-18.3
0.206	24.5	19.7	44.2	63.4	-19.1
0.217	23.6	19.7	43.3	62.9	-19.6
0.501	16.1	19.8	35.9	56.0	-20.1
0.154	25.5	19.7	45.2	65.8	-20.6
0.568	15.1	19.8	34.9	56.0	-21.1
0.538	14.8	19.8	34.6	56.0	-21.4
0.613	14.8	19.8	34.6	56.0	-21.4
0.240	20.8	19.7	40.5	62.1	-21.6
0.467	15.2	19.8	35.0	56.6	-21.6
0.512	14.4	19.8	34.2	56.0	-21.8
0.232	20.8	19.7	40.5	62.4	-21.8
0.437	14.9	19.8	34.7	57.1	-22.4
0.698	13.6	19.8	33.4	56.0	-22.6
0.684	13.3	19.8	33.1	56.0	-22.9
0.385	15.3	19.8	35.1	58.2	-23.1
1.243	12.7	19.7	32.4	56.0	-23.6
0.717	12.6	19.8	32.4	56.0	-23.6
0.262	17.8	19.8	37.6	61.4	-23.8
0.631	12.3	19.8	32.1	56.0	-23.9
0.728	12.1	19.8	31.9	56.0	-24.1
0.333	15.1	19.8	34.9	59.4	-24.5
27.646	15.8	19.7	35.5	60.0	-24.5
1.277	11.6	19.7	31.3	56.0	-24.7
0.314	15.3	19.8	35.1	59.9	-24.8
0.430	12.5	19.8	32.3	57.3	-25.0

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.195	25.8	19.7	45.5	53.8	-8.3
0.206	24.5	19.7	44.2	53.4	-9.1
0.217	23.6	19.7	43.3	52.9	-9.6
0.501	16.1	19.8	35.9	46.0	-10.1
0.154	25.5	19.7	45.2	55.8	-10.6
0.568	15.1	19.8	34.9	46.0	-11.1
0.538	14.8	19.8	34.6	46.0	-11.4
0.613	14.8	19.8	34.6	46.0	-11.4
0.240	20.8	19.7	40.5	52.1	-11.6
0.467	15.2	19.8	35.0	46.6	-11.6
0.512	14.4	19.8	34.2	46.0	-11.8
0.232	20.8	19.7	40.5	52.4	-11.8
0.437	14.9	19.8	34.7	47.1	-12.4
0.698	13.6	19.8	33.4	46.0	-12.6
0.684	13.3	19.8	33.1	46.0	-12.9
0.385	15.3	19.8	35.1	48.2	-13.1
1.243	12.7	19.7	32.4	46.0	-13.6
0.717	12.6	19.8	32.4	46.0	-13.6
0.262	17.8	19.8	37.6	51.4	-13.8
0.631	12.3	19.8	32.1	46.0	-13.9
0.728	12.1	19.8	31.9	46.0	-14.1
0.333	15.1	19.8	34.9	49.4	-14.5
27.646	15.8	19.7	35.5	50.0	-14.5
1.277	11.6	19.7	31.3	46.0	-14.7
0.314	15.3	19.8	35.1	49.9	-14.8
0.430	12.5	19.8	32.3	47.3	-15.0

CONCLUSION

Pass


Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	19	Line:	Neutral	Ext. Attenuation (dB):	20
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COMMENTS

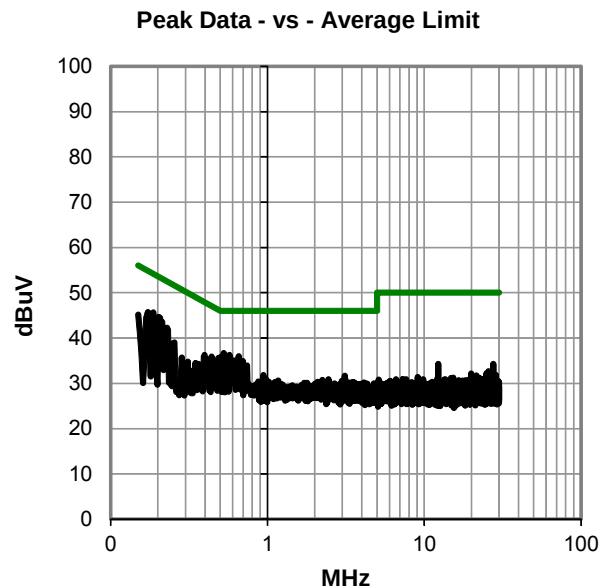
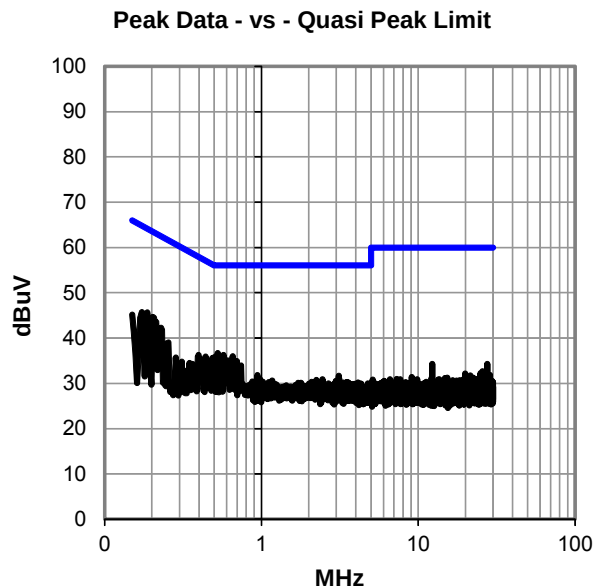
None

EUT OPERATING MODES

Continuous Transmit, Ch. 157 5785 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #19

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.187	25.9	19.7	45.6	64.2	-18.5
0.202	24.9	19.7	44.6	63.5	-18.9
0.172	26.0	19.7	45.7	64.8	-19.1
0.527	16.9	19.8	36.7	56.0	-19.3
0.572	16.5	19.8	36.3	56.0	-19.7
0.657	16.2	19.8	36.0	56.0	-20.0
0.501	16.0	19.8	35.8	56.0	-20.2
0.228	22.5	19.7	42.2	62.5	-20.3
0.553	15.7	19.8	35.5	56.0	-20.5
0.150	25.5	19.6	45.1	66.0	-20.9
0.609	15.3	19.8	35.1	56.0	-20.9
0.695	15.2	19.8	35.0	56.0	-21.0
0.441	16.1	19.8	35.9	57.0	-21.1
0.665	14.7	19.8	34.5	56.0	-21.5
0.396	16.5	19.8	36.3	57.9	-21.6
0.463	15.0	19.8	34.8	56.6	-21.8
0.743	14.2	19.8	34.0	56.0	-22.0
0.587	14.0	19.8	33.8	56.0	-22.2
0.254	19.3	19.8	39.1	61.6	-22.6
0.646	13.3	19.8	33.1	56.0	-22.9
0.941	12.1	19.7	31.8	56.0	-24.2
3.116	12.1	19.5	31.6	56.0	-24.4
0.363	14.5	19.8	34.3	58.7	-24.4
0.348	14.7	19.8	34.5	59.0	-24.5
0.710	11.7	19.8	31.5	56.0	-24.5
3.131	11.6	19.5	31.1	56.0	-24.9

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.187	25.9	19.7	45.6	54.2	-8.5
0.202	24.9	19.7	44.6	53.5	-8.9
0.172	26.0	19.7	45.7	54.8	-9.1
0.527	16.9	19.8	36.7	46.0	-9.3
0.572	16.5	19.8	36.3	46.0	-9.7
0.657	16.2	19.8	36.0	46.0	-10.0
0.501	16.0	19.8	35.8	46.0	-10.2
0.228	22.5	19.7	42.2	52.5	-10.3
0.553	15.7	19.8	35.5	46.0	-10.5
0.150	25.5	19.6	45.1	56.0	-10.9
0.609	15.3	19.8	35.1	46.0	-10.9
0.695	15.2	19.8	35.0	46.0	-11.0
0.441	16.1	19.8	35.9	47.0	-11.1
0.665	14.7	19.8	34.5	46.0	-11.5
0.396	16.5	19.8	36.3	47.9	-11.6
0.463	15.0	19.8	34.8	46.6	-11.8
0.743	14.2	19.8	34.0	46.0	-12.0
0.587	14.0	19.8	33.8	46.0	-12.2
0.254	19.3	19.8	39.1	51.5	-12.6
0.646	13.3	19.8	33.1	46.0	-12.9
0.941	12.1	19.7	31.8	46.0	-14.2
3.116	12.1	19.5	31.6	46.0	-14.4
0.363	14.5	19.8	34.3	48.7	-14.4
0.348	14.7	19.8	34.5	49.0	-14.5
0.710	11.7	19.8	31.5	46.0	-14.5
3.131	11.6	19.5	31.1	46.0	-14.9

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

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

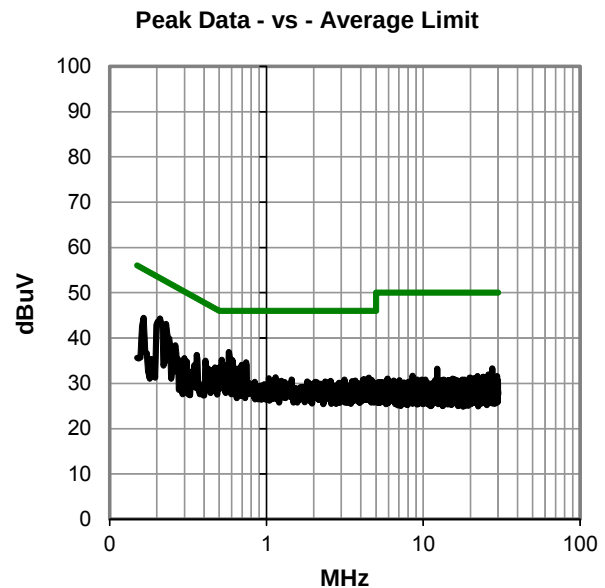
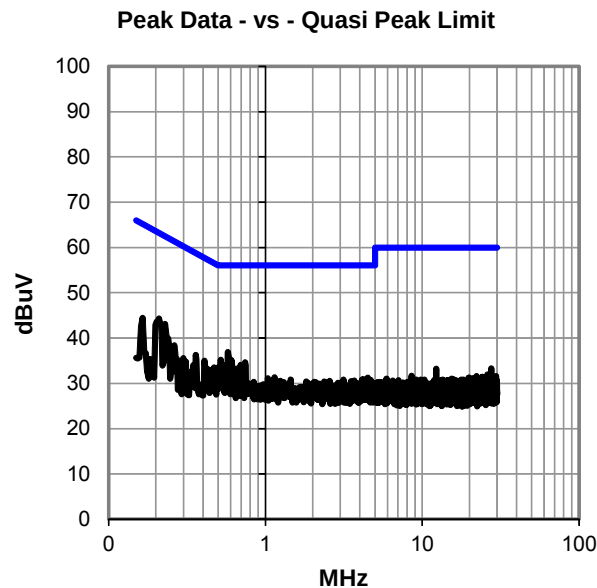
None

EUT OPERATING MODES

Continuous Transmit, Ch. 157 5785 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #20

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.210	24.6	19.7	44.3	63.2	-18.9
0.575	17.1	19.8	36.9	56.0	-19.1
0.228	23.4	19.7	43.1	62.5	-19.4
0.165	24.7	19.7	44.4	65.2	-20.8
0.519	15.4	19.8	35.2	56.0	-20.8
0.605	15.4	19.8	35.2	56.0	-20.8
0.743	14.9	19.8	34.7	56.0	-21.3
0.695	14.3	19.8	34.1	56.0	-21.9
0.359	16.5	19.8	36.3	58.8	-22.5
0.501	13.7	19.8	33.5	56.0	-22.5
0.676	13.6	19.8	33.4	56.0	-22.6
0.407	15.2	19.8	35.0	57.7	-22.7
0.650	13.5	19.8	33.3	56.0	-22.7
0.471	13.7	19.8	33.5	56.5	-23.0
0.262	18.6	19.8	38.4	61.4	-23.0
0.463	13.4	19.8	33.2	56.6	-23.4
0.426	13.4	19.8	33.2	57.3	-24.1
0.478	12.1	19.8	31.9	56.4	-24.5
0.299	15.8	19.8	35.6	60.3	-24.7
1.142	11.6	19.7	31.3	56.0	-24.7
4.500	11.7	19.6	31.3	56.0	-24.7
1.038	11.4	19.7	31.1	56.0	-24.9
0.348	14.3	19.8	34.1	59.0	-24.9
4.202	11.3	19.6	30.9	56.0	-25.1
1.448	11.2	19.7	30.9	56.0	-25.1
3.142	11.3	19.5	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.210	24.6	19.7	44.3	53.2	-8.9
0.575	17.1	19.8	36.9	46.0	-9.1
0.228	23.4	19.7	43.1	52.5	-9.4
0.165	24.7	19.7	44.4	55.2	-10.8
0.519	15.4	19.8	35.2	46.0	-10.8
0.605	15.4	19.8	35.2	46.0	-10.8
0.743	14.9	19.8	34.7	46.0	-11.3
0.695	14.3	19.8	34.1	46.0	-11.9
0.359	16.5	19.8	36.3	48.8	-12.5
0.501	13.7	19.8	33.5	46.0	-12.5
0.676	13.6	19.8	33.4	46.0	-12.6
0.407	15.2	19.8	35.0	47.7	-12.7
0.650	13.5	19.8	33.3	46.0	-12.7
0.471	13.7	19.8	33.5	46.5	-13.0
0.262	18.6	19.8	38.4	51.4	-13.0
0.463	13.4	19.8	33.2	46.6	-13.4
0.426	13.4	19.8	33.2	47.3	-14.1
0.478	12.1	19.8	31.9	46.4	-14.5
0.299	15.8	19.8	35.6	50.3	-14.7
1.142	11.6	19.7	31.3	46.0	-14.7
4.500	11.7	19.6	31.3	46.0	-14.7
1.038	11.4	19.7	31.1	46.0	-14.9
0.348	14.3	19.8	34.1	49.0	-14.9
4.202	11.3	19.6	30.9	46.0	-15.1
1.448	11.2	19.7	30.9	46.0	-15.1
3.142	11.3	19.5	30.8	46.0	-15.2

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	21	Line:	High Line	Ext. Attenuation (dB):	20
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COMMENTS

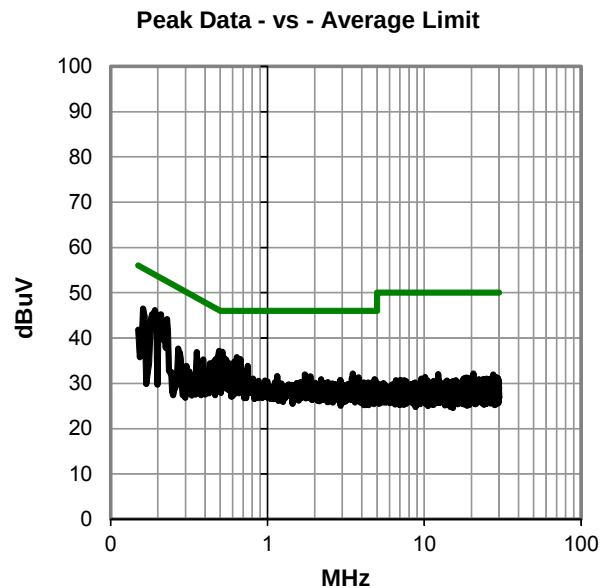
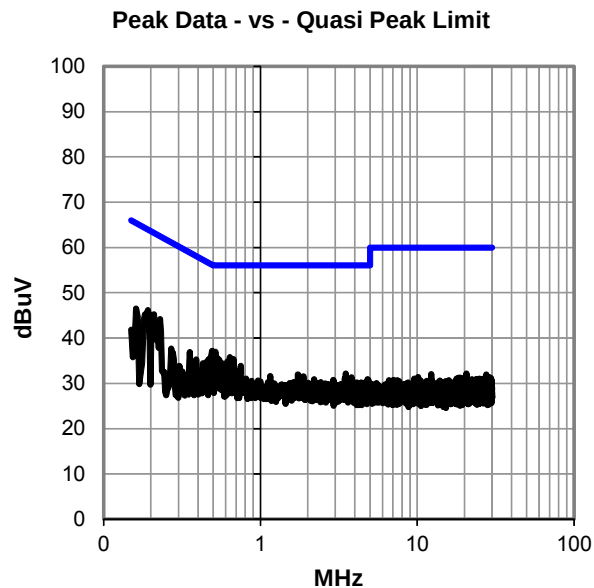
None

EUT OPERATING MODES

Continuous Transmit, Ch. 165 5825 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #21

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.191	26.4	19.7	46.1	64.0	-17.9
0.210	25.5	19.7	45.2	63.2	-18.0
0.228	24.4	19.7	44.1	62.5	-18.4
0.161	26.8	19.7	46.5	65.4	-18.9
0.493	17.4	19.8	37.2	56.1	-18.9
0.516	17.2	19.8	37.0	56.0	-19.0
0.221	23.3	19.7	43.0	62.8	-19.7
0.639	16.0	19.8	35.8	56.0	-20.2
0.672	15.6	19.8	35.4	56.0	-20.6
0.545	15.4	19.8	35.2	56.0	-20.8
0.471	15.6	19.8	35.4	56.5	-21.1
0.616	15.1	19.8	34.9	56.0	-21.1
0.579	14.6	19.8	34.4	56.0	-21.6
0.460	15.2	19.8	35.0	56.7	-21.7
0.355	17.1	19.8	36.9	58.8	-21.9
0.747	14.1	19.7	33.8	56.0	-22.2
0.389	15.5	19.8	35.3	58.1	-22.8
0.430	14.6	19.8	34.4	57.3	-22.9
0.713	13.0	19.8	32.8	56.0	-23.2
0.269	17.9	19.8	37.7	61.1	-23.5
3.504	12.6	19.6	32.2	56.0	-23.8
1.732	12.3	19.6	31.9	56.0	-24.1
0.150	22.2	19.6	41.8	66.0	-24.2
1.154	11.9	19.7	31.6	56.0	-24.4
1.877	11.9	19.6	31.5	56.0	-24.5
3.802	11.7	19.6	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.191	26.4	19.7	46.1	54.0	-7.9
0.210	25.5	19.7	45.2	53.2	-8.0
0.228	24.4	19.7	44.1	52.5	-8.4
0.161	26.8	19.7	46.5	55.4	-8.9
0.493	17.4	19.8	37.2	46.1	-8.9
0.516	17.2	19.8	37.0	46.0	-9.0
0.221	23.3	19.7	43.0	52.8	-9.7
0.639	16.0	19.8	35.8	46.0	-10.2
0.672	15.6	19.8	35.4	46.0	-10.6
0.545	15.4	19.8	35.2	46.0	-10.8
0.471	15.6	19.8	35.4	46.5	-11.1
0.616	15.1	19.8	34.9	46.0	-11.1
0.579	14.6	19.8	34.4	46.0	-11.6
0.460	15.2	19.8	35.0	46.7	-11.7
0.355	17.1	19.8	36.9	48.8	-11.9
0.747	14.1	19.7	33.8	46.0	-12.2
0.389	15.5	19.8	35.3	48.1	-12.8
0.430	14.6	19.8	34.4	47.3	-12.9
0.713	13.0	19.8	32.8	46.0	-13.2
0.269	17.9	19.8	37.7	51.1	-13.5
3.504	12.6	19.6	32.2	46.0	-13.8
1.732	12.3	19.6	31.9	46.0	-14.1
0.150	22.2	19.6	41.8	56.0	-14.2
1.154	11.9	19.7	31.6	46.0	-14.4
1.877	11.9	19.6	31.5	46.0	-14.5
3.802	11.7	19.6	31.3	46.0	-14.7

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	444-2250	Work Order:	FOCU0168
Serial Number:	02EA310000BA	Date:	06/13/2014
Customer:	Summit Semiconductor LLC	Temperature:	22°C
Attendees:	None	Relative Humidity:	45%
Customer Project:	None	Bar. Pressure:	1012 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	16 VDC	Configuration:	FOCU0168-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

TEST PARAMETERS

Run #:	22	Line:	Neutral	Ext. Attenuation (dB):	20
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COMMENTS

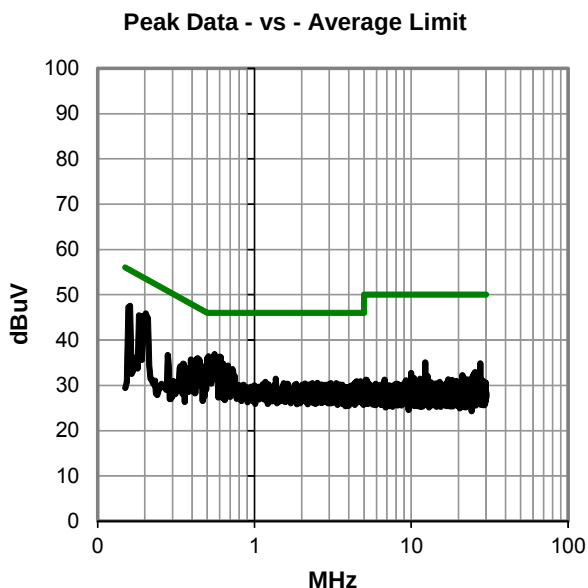
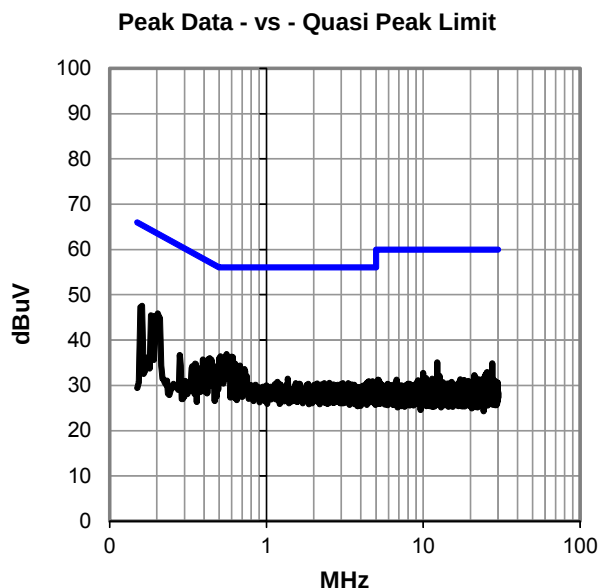
None

EUT OPERATING MODES

Continuous Transmit, Ch. 165 5825 MHz, 6Mbps, Ant 1

DEVIATIONS FROM TEST STANDARD

None



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #22

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.202	26.1	19.7	45.8	63.5	-17.7
0.161	27.8	19.7	47.5	65.4	-17.9
0.184	25.7	19.7	45.4	64.3	-18.9
0.557	17.1	19.8	36.9	56.0	-19.1
0.508	16.6	19.8	36.4	56.0	-19.6
0.601	16.6	19.8	36.4	56.0	-19.6
0.583	16.4	19.8	36.2	56.0	-19.8
0.613	16.4	19.8	36.2	56.0	-19.8
0.501	16.2	19.8	36.0	56.0	-20.0
0.434	16.2	19.8	36.0	57.2	-21.2
0.631	15.0	19.8	34.8	56.0	-21.2
0.445	15.9	19.8	35.7	57.0	-21.3
0.680	14.6	19.8	34.4	56.0	-21.6
0.486	14.4	19.8	34.2	56.2	-22.0
0.415	15.5	19.8	35.3	57.5	-22.2
0.393	15.9	19.8	35.7	58.0	-22.3
0.475	14.3	19.8	34.1	56.4	-22.3
0.725	13.8	19.8	33.6	56.0	-22.4
0.747	12.3	19.7	32.0	56.0	-24.0
0.351	15.0	19.8	34.8	58.9	-24.1
0.281	16.9	19.8	36.7	60.8	-24.1
1.370	11.8	19.7	31.5	56.0	-24.5
0.366	14.0	19.8	33.8	58.6	-24.8
12.286	15.6	19.5	35.1	60.0	-24.9
0.337	14.4	19.8	34.2	59.3	-25.1
4.496	11.3	19.6	30.9	56.0	-25.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.202	26.1	19.7	45.8	53.5	-7.7
0.161	27.8	19.7	47.5	55.4	-7.9
0.184	25.7	19.7	45.4	54.3	-8.9
0.557	17.1	19.8	36.9	46.0	-9.1
0.508	16.6	19.8	36.4	46.0	-9.6
0.601	16.6	19.8	36.4	46.0	-9.6
0.583	16.4	19.8	36.2	46.0	-9.8
0.613	16.4	19.8	36.2	46.0	-9.8
0.501	16.2	19.8	36.0	46.0	-10.0
0.434	16.2	19.8	36.0	47.2	-11.2
0.631	15.0	19.8	34.8	46.0	-11.2
0.445	15.9	19.8	35.7	47.0	-11.3
0.680	14.6	19.8	34.4	46.0	-11.6
0.486	14.4	19.8	34.2	46.2	-12.0
0.415	15.5	19.8	35.3	47.5	-12.2
0.393	15.9	19.8	35.7	48.0	-12.3
0.475	14.3	19.8	34.1	46.4	-12.3
0.725	13.8	19.8	33.6	46.0	-12.4
0.747	12.3	19.7	32.0	46.0	-14.0
0.351	15.0	19.8	34.8	48.9	-14.1
0.281	16.9	19.8	36.7	50.8	-14.1
1.370	11.8	19.7	31.5	46.0	-14.5
0.366	14.0	19.8	33.8	48.6	-14.8
12.286	15.6	19.5	35.1	50.0	-14.9
0.337	14.4	19.8	34.2	49.3	-15.1
4.496	11.3	19.6	30.9	46.0	-15.1

CONCLUSION

Pass



Tested By