



**Summit Semiconductor
Model# 444-2216 (Glenwood)**

Report #: FOCU0127



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: March 23, 2012
Summit Semiconductor
Model: Model# 444-2216 (Glenwood)

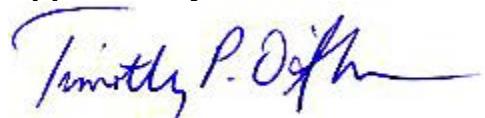
Emissions

Test Description	Specification	Test Method	Pass/Fail
Occupied Bandwidth	FCC 15.247:2012	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2012	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2012	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2012	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2012	ANSI C63.10:2009	Pass
Emission Bandwidth	FCC 15.247:2012	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2012	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2012	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:



Tim O'Shea, Operations Manager



NVLAP Lab Code: 200630-0

Test Facility

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

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

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

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

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

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



Revision 09/01/11

Revision History

Revision Number	Description	Date	Page Number
00	None		

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. The scope includes radio, ITE, and medical standards from around the world. See: <http://www.nwemc.com/accreditations/>

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.



Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy, #400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park, MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

VCCI

C-1071, R-1025, G-84,
C-2687, T-1658, R-2318

R-1943, G-85,
C-2766, T-1659, G-548

R-3125, G-86,
G-141, C-3464, T-1634

R-871, G-83,
C-3265, T-1511

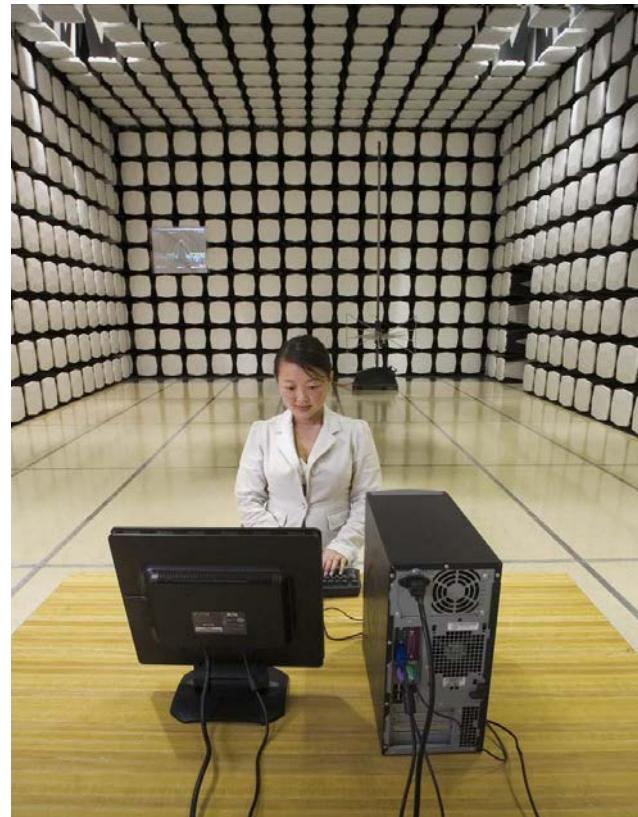
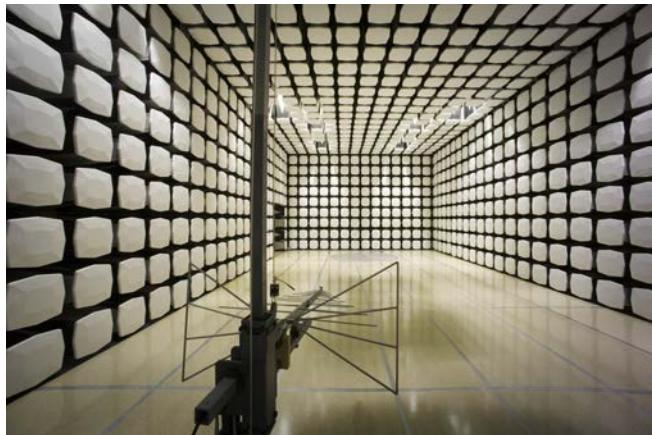
Industry Canada

2834D-1, 2834D-2

2834B-1, 2834B-2, 2834B-3

2834E-1

2834C-1



Product Description

Client and Equipment Under Test (EUT) Information

Company Name:	Summit Semiconductor
Address:	22867 NW Bennett St, Suite 200
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Ponnappa Pasura
Model:	Model# 444-2216 (Glenwood)
First Date of Test:	March 16, 2012
Last Date of Test:	March 23, 2012
Receipt Date of Samples:	March 13, 2012
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

UNII radio module

Testing Objective:

Seeking limited modular approval of the master under FCC 15.247 for operation in the 5.8 GHz band

Configurations

Configuration 1 FOCU0127

Software/Firmware Running during test	
Description	Version
Hood BIST Monitor	157

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Audio Board - Direct Connect	Summit Semiconductor	444-2216	02EA060000024

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Developer I/O Board	Summit Semiconductor	None	C0-4
RS-232 Serial Interface	Summit Semiconductor	None	None
DC Block	MCL	BLK-89-S+	15542
AC Adapter	Condor	SA-183A61V	0950

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	Latitude D820	2006-00516

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Multi-pin cable	No	0.2m	No	Wireless Audio Board - Direct Connect	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	Developer I/O Board	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	Developer I/O Board

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

Configurations

Configuration 2 FOCU0127

Software/Firmware Running during test	
Description	Version
Hood BIST Monitor	157

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Audio Board - Radiated	Summit Semiconductor	444-2216	02EA060000012

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Developer I/O Board	Summit Semiconductor	None	C0-4
DC Block	MCL	BLK-89-S+	15542

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
RS-232 Serial Interface	Summit Semiconductor	None	None
Remote PC	Dell	Latitude D820	2006-00516
DC Power Supply	Topward	6303D	743645

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Multi-pin cable	No	0.2m	No	Wireless Audio Board - Direct Connect	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	Developer I/O Board	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	Developer I/O Board

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

Configurations

Configuration 4 FOCU0127

Software/Firmware Running during test	
Description	Version
Hood BIST Monitor	157

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Audio Board - Radiated	Summit Semiconductor	444-2216	02EA060000012

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Developer I/O Board	Summit Semiconductor	None	C0-4
DC Power Supply	Topward	6303D	743645

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
RS-232 Serial Interface	Summit Semiconductor	None	None
Remote PC	Dell	Latitude D820	2006-00516

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Lead	PA	1.8m	PA	AC Adapter	Developer I/O Board
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Modifications

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	3/16/2012	Spurious Radiated 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	3/19/2012	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.
3	3/19/2012	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.
4	3/19/2012	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.
5	3/19/2012	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.
6	3/19/2012	Emission 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.
7	3/22/2012	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.
8	3/23/2012	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/12/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

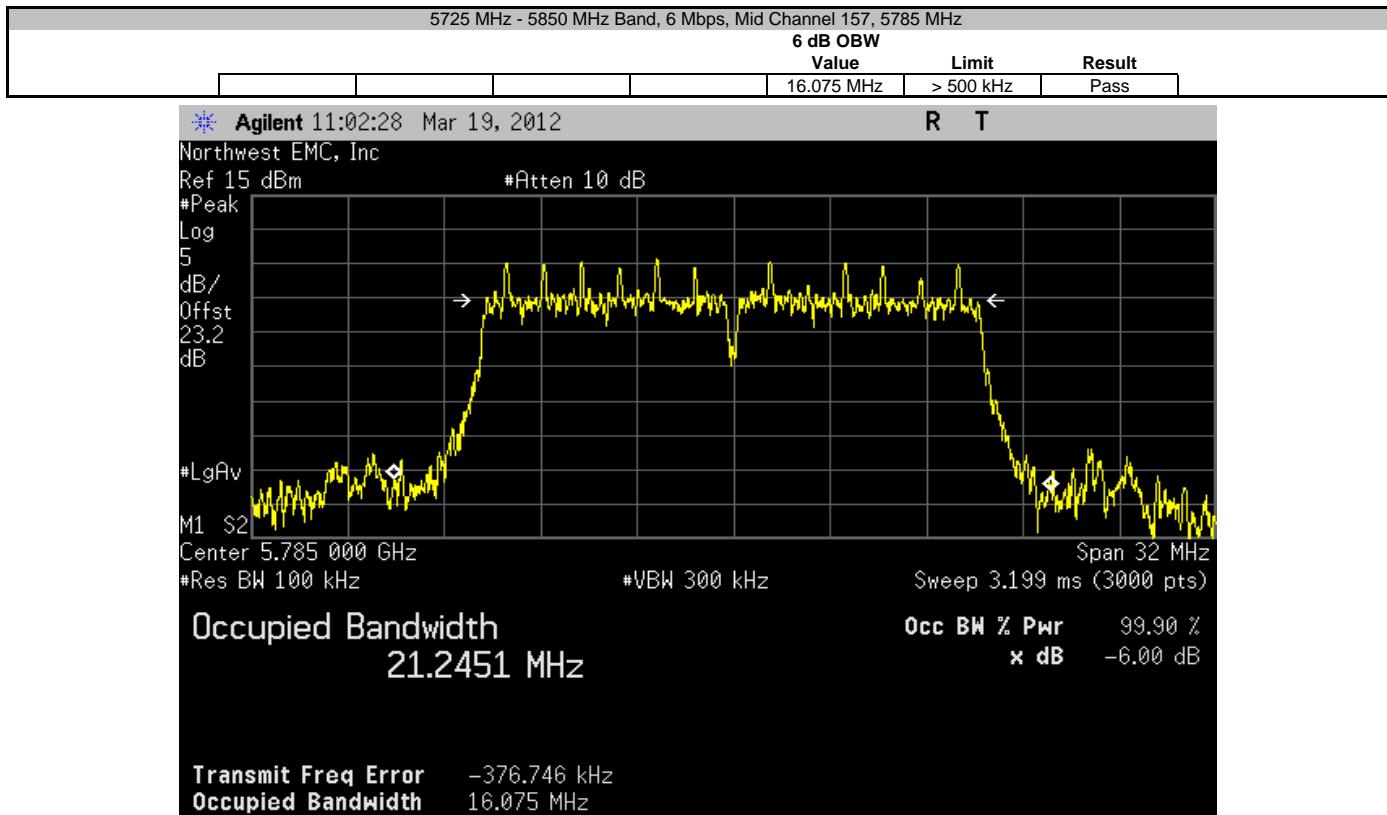
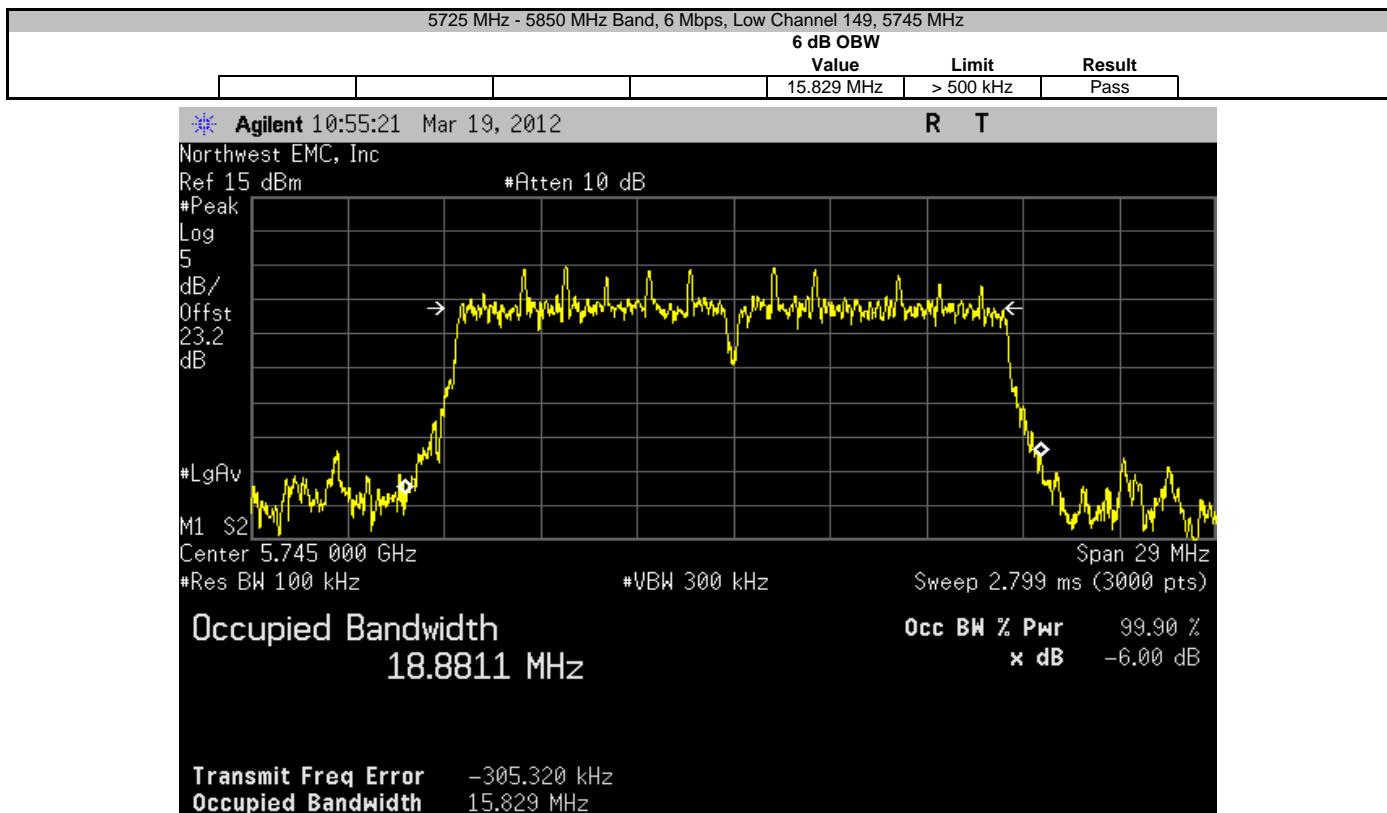
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

To satisfy the requirements of FCC 15.247(a)(2), the 6 dB occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. In addition, the 99.9% power bandwidth was measured and used in determining the channel power integration bandwidth for maximum peak output power located elsewhere in this report. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate with the typical modulation.

Occupied Bandwidth

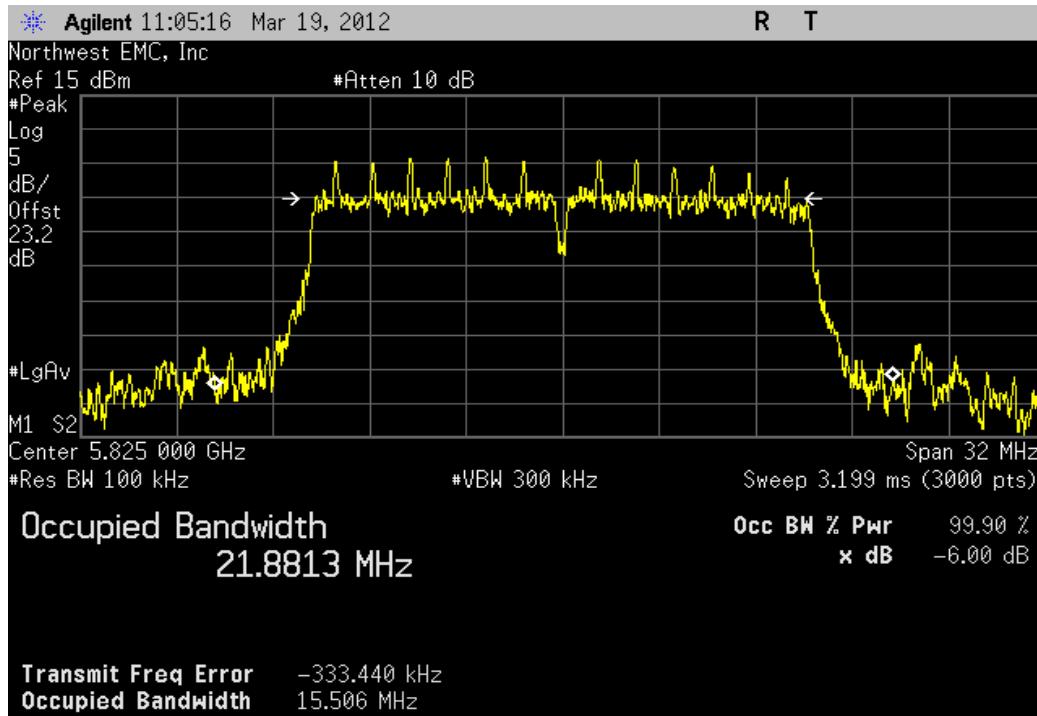
EUT: Model# 444-2216 (Glenwood)	Work Order: FOCU0127				
Serial Number: 02EA06000024	Date: 03/19/12				
Customer: Summit Semiconductor	Temperature: 21°C				
Attendees: None	Humidity: 28%				
Project: None	Barometric Pres.: 1013.5 mb				
Tested by: Rod Peloquin	Job Site: EV06				
TEST SPECIFICATIONS					
FCC 15.247:2012	Test Method: ANSI C63.10:2009				
COMMENTS					
None					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	1				
Signature					
5725 MHz - 5850 MHz Band	6 Mbps	6 dB OBW	Value	Limit	Result
Low Channel 149, 5745 MHz		15.829 MHz	> 500 kHz	Pass	
Mid Channel 157, 5785 MHz		16.075 MHz	> 500 kHz	Pass	
High Channel 165, 5825 MHz		15.506 MHz	> 500 kHz	Pass	



5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

6 dB OBW

Value	Limit	Result
15.506 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
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/12/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	5/5/2011	12

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

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

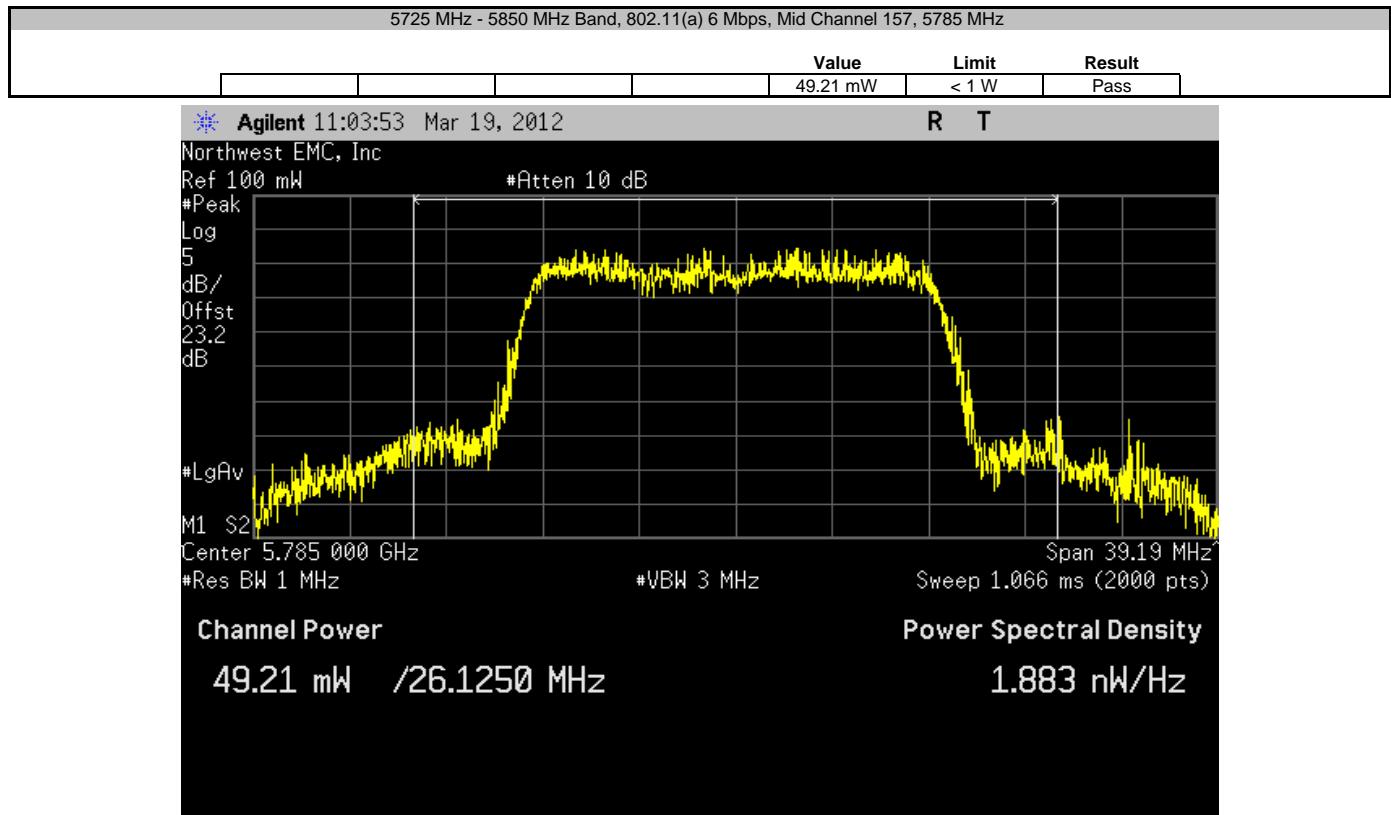
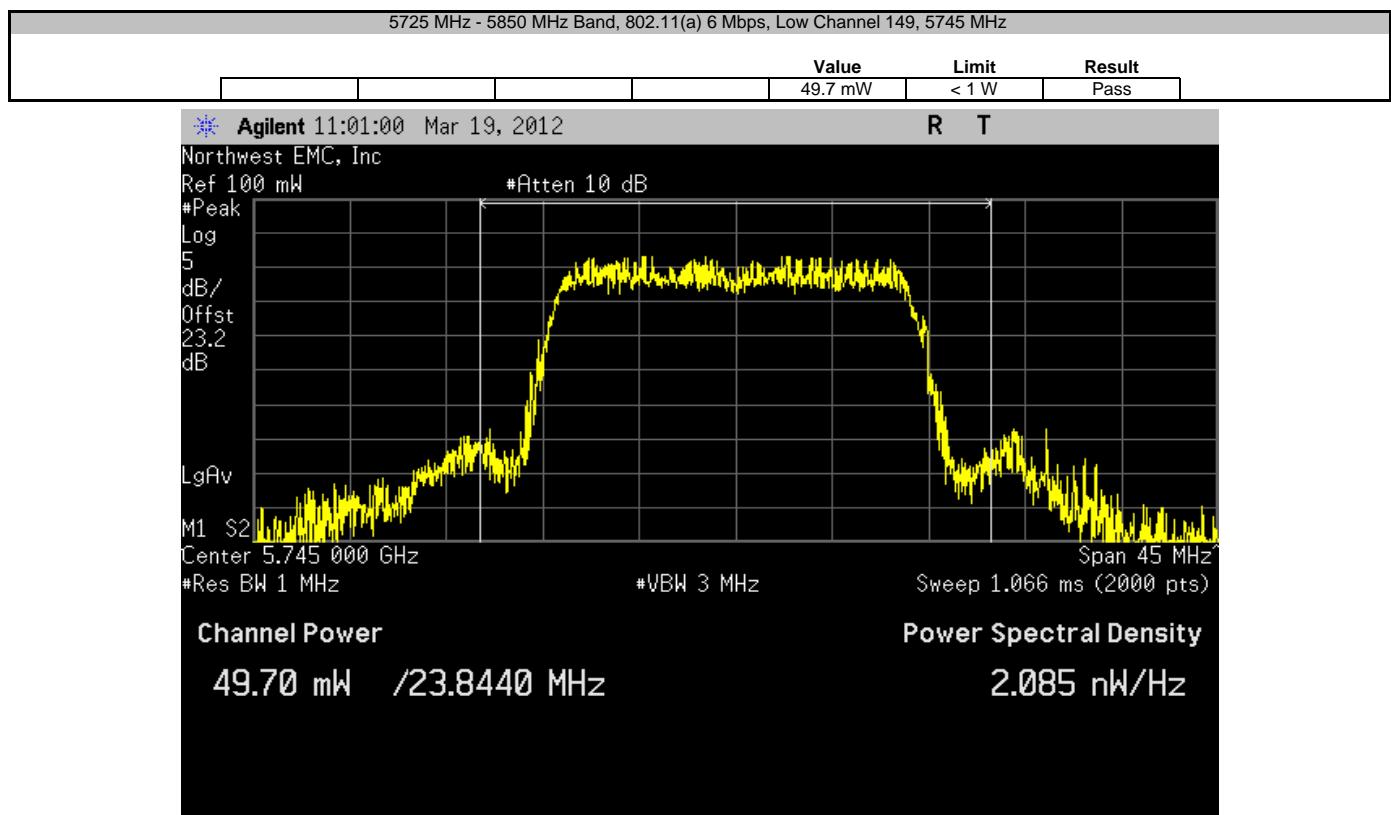
Measurement was made using the alternate method of integrated band power using the channel power measurement function of a spectrum analyzer and peak detector with sweep gating on the RF burst. The channel integration bandwidth was set to the Emission Bandwidth (EBW) of the carrier. The EBW was measured as the x -26 db bandwidth of the carrier using an RBW of between 1% - 3 %. The data is located in the Emission Bandwidth test data located elsewhere in this report.

RF Gating was used to ensure the measurement was integrated only across the high time of the transmission duration.

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

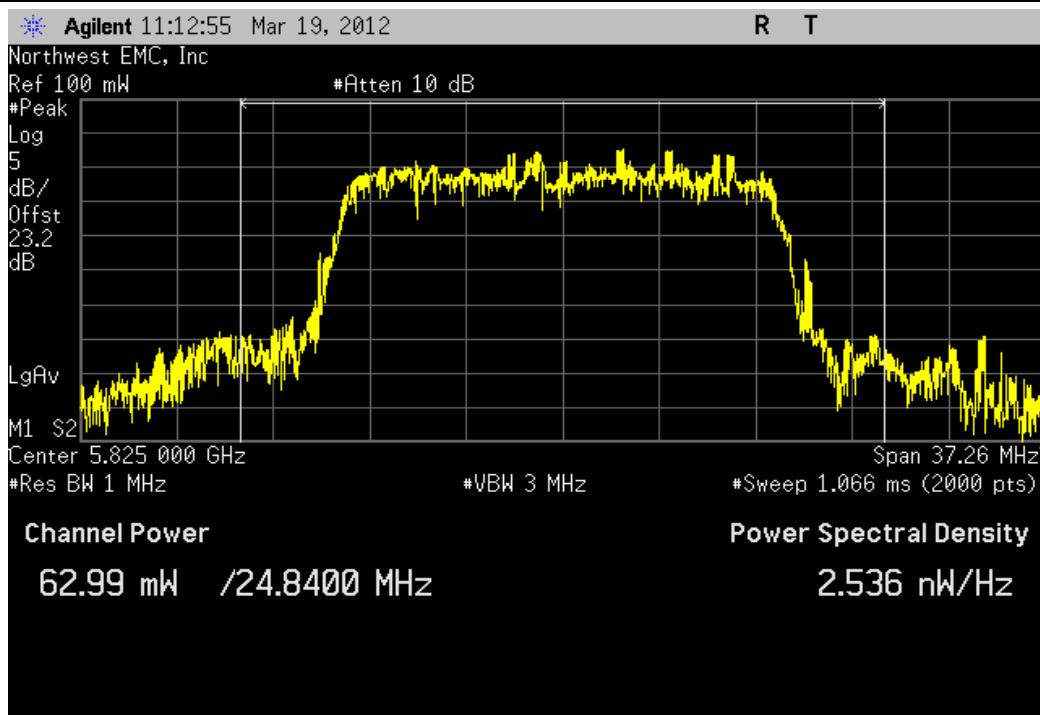
Output Power

EUT: Model# 444-2216 (Glenwood)	Work Order: FOCU0127		
Serial Number: 02EA06000024	Date: 03/19/12		
Customer: Summit Semiconductor	Temperature: 21°C		
Attendees: None	Humidity: 28%		
Project: None	Barometric Pres.: 1013.5 mb		
Tested by: Rod Peloquin	Job Site: EV06		
TEST SPECIFICATIONS			
FCC 15.247:2012	Test Method: ANSI C63.10:2009		
COMMENTS			
Sweep Gating used on RF burst			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1		
Signature 			
	Value	Limit	Result
5725 MHz - 5850 MHz Band 802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz	49.7 mW	< 1 W	Pass
Mid Channel 157, 5785 MHz	49.21 mW	< 1 W	Pass
High Channel 165, 5825 MHz	62.99 mW	< 1 W	Pass



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

	Value	Limit	Result
	62.99 mW	< 1 W	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
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/12/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

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 its lowest, middle, and maximum data rate available.

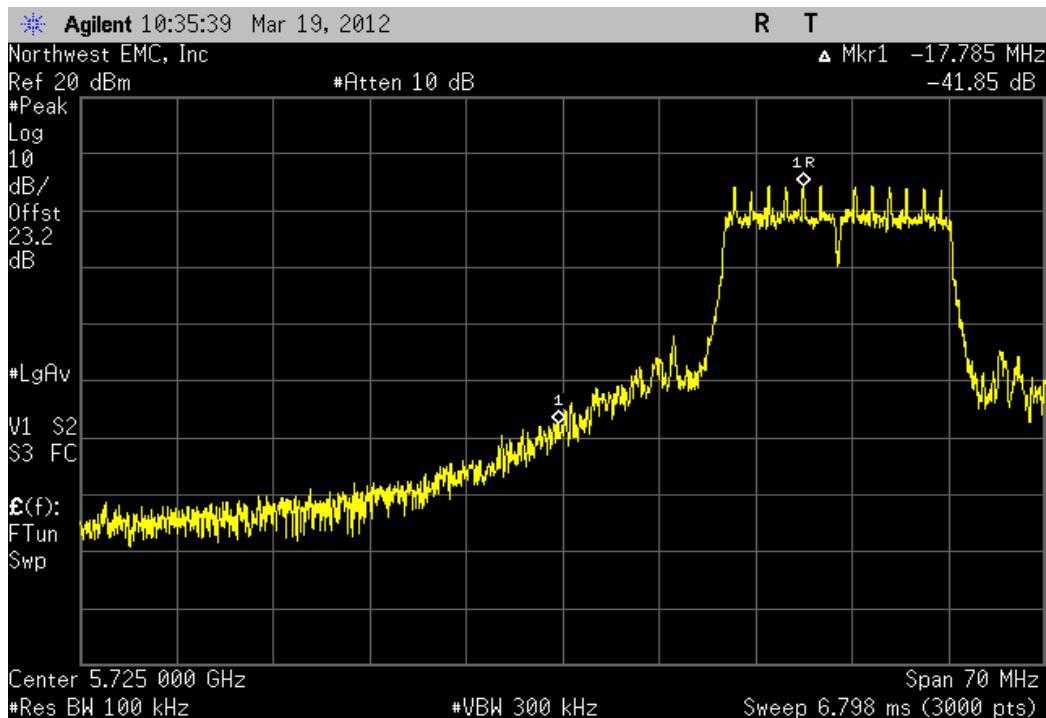
The spectrum was scanned across each band edge from at least 25 MHz below the band edge to 25 MHz above the band edge.

Band Edge Compliance

EUT: Model# 444-2216 (Glenwood)		Work Order: FOCU0127																
Serial Number: 02EA06000024		Date: 03/19/12																
Customer: Summit Semiconductor		Temperature: 21°C																
Attendees: None		Humidity: 28%																
Project: None		Barometric Pres.: 1013.5 mb																
Tested by: Rod Peloquin	Power: 18 VDC	Job Site: EV06																
TEST SPECIFICATIONS																		
FCC 15.247:2012		Test Method: ANSI C63.10:2009																
COMMENTS																		
None																		
DEVIATIONS FROM TEST STANDARD																		
None																		
Configuration #	1	Signature: 																
<table border="1"> <thead> <tr> <th></th> <th>Value</th> <th>Limit</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>5725 MHz - 5850 MHz Band 802.11(a) 6 Mbps</td> <td>-41.85 dBc -48.81 dBc</td> <td>≤ -20 dBc ≤ -20 dBc</td> <td>Pass Pass</td> </tr> <tr> <td>Low Channel 149, 5745 MHz</td> <td></td> <td></td> <td></td> </tr> <tr> <td>High Channel 165, 5825 MHz</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				Value	Limit	Result	5725 MHz - 5850 MHz Band 802.11(a) 6 Mbps	-41.85 dBc -48.81 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass	Low Channel 149, 5745 MHz				High Channel 165, 5825 MHz			
	Value	Limit	Result															
5725 MHz - 5850 MHz Band 802.11(a) 6 Mbps	-41.85 dBc -48.81 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass															
Low Channel 149, 5745 MHz																		
High Channel 165, 5825 MHz																		

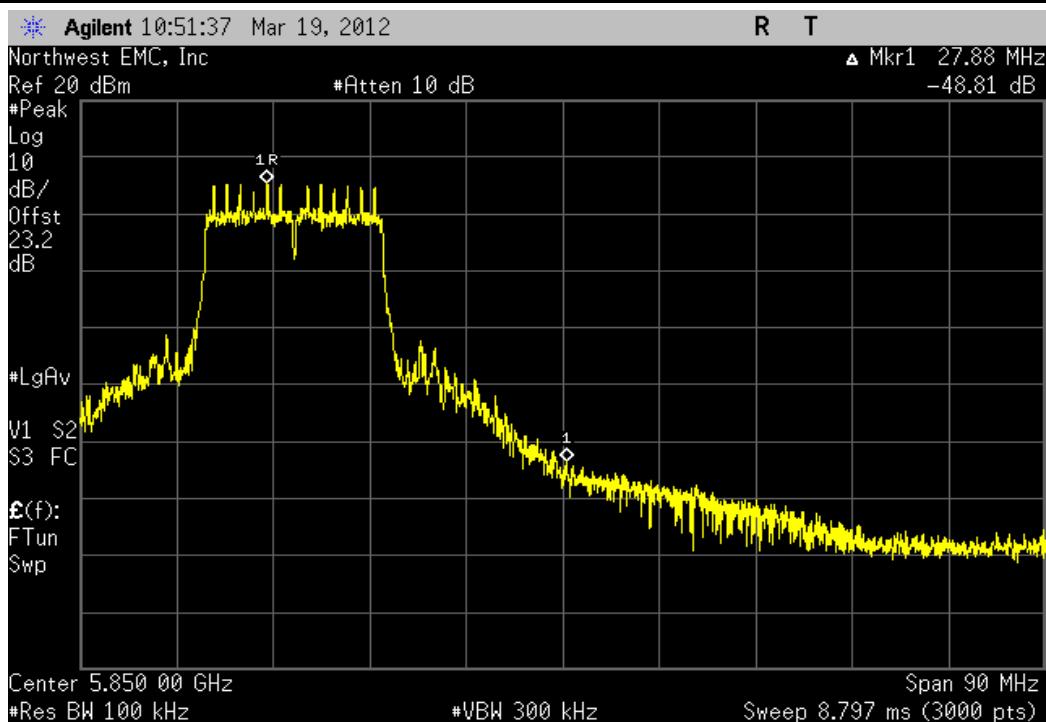
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

					Value	Limit	Result
					-41.85 dBc	≤ -20 dBc	Pass



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

				Value	Limit	Result
				-48.81 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
Spectrum Analyzer	Agilent	E4440A	AAW	4/19/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

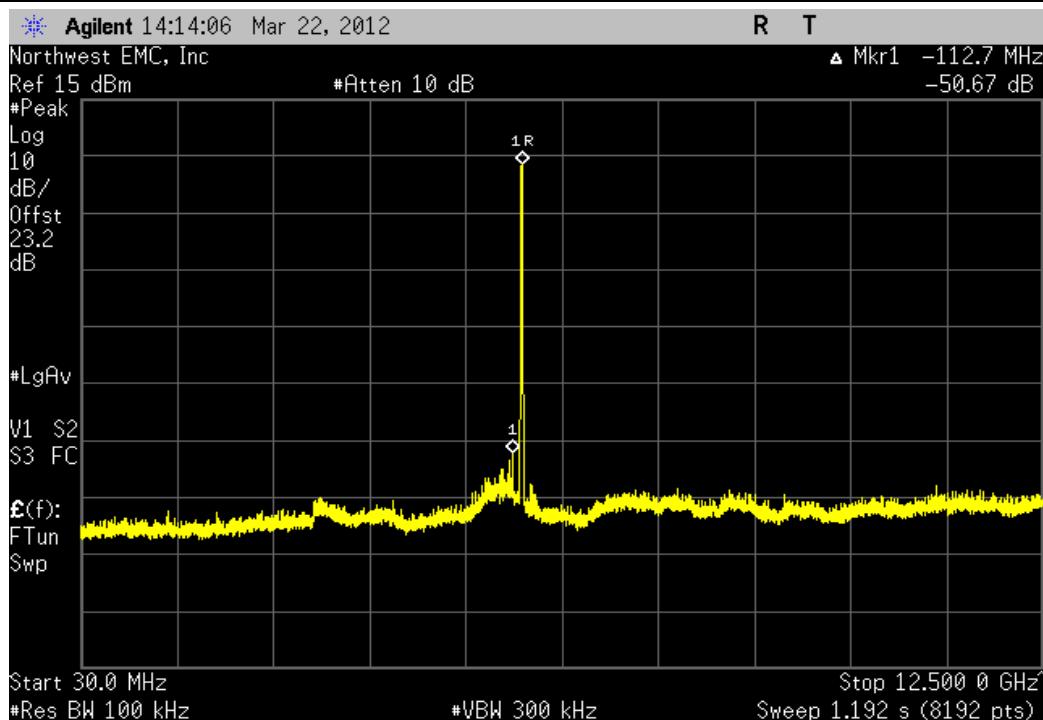
TEST DESCRIPTION

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 its maximum data rate using direct sequence modulation. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

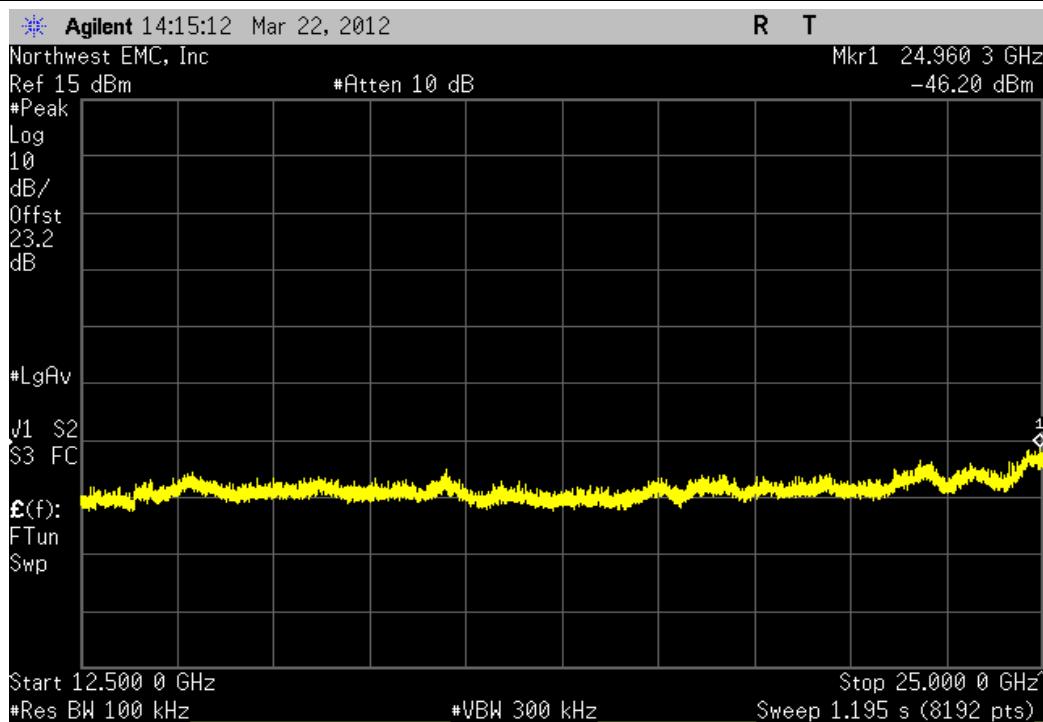
Spurious Conducted Emissions

EUT: Model# 444-2216 (Glenwood)	Work Order: FOCU0127			
Serial Number: 02EA06000024	Date: 03/22/12			
Customer: Summit Semiconductor	Temperature: 22°C			
Attendees: Ponnappa Pasura	Humidity: 29%			
Project: None	Barometric Pres.: 1011.5 mb			
Tested by: Rod Peloquin	Job Site: EV01			
TEST SPECIFICATIONS				
FCC 15.247:2012	Test Method: ANSI C63.10:2009			
COMMENTS				
None				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	1	Signature: 		
Frequency Range	Value	Limit	Result	
5725 MHz - 5850 MHz Band				
6 Mbps				
Low Channel 149 (30), 5745 MHz	30 MHz - 12.5 GHz	-50.68 dBc	≤ -20 dBc	Pass
Low Channel 149 (30), 5745 MHz	12.5 GHz - 25 GHz	-49.64 dBc	≤ -20 dBc	Pass
Low Channel 149 (30), 5745 MHz	25 GHz - 32 GHz	-49.04 dBc	≤ -20 dBc	Pass
Low Channel 149 (30), 5745 MHz	32 GHz - 40 GHz	-38.95 dBc	≤ -20 dBc	Pass
Mid Channel 157 (32), 5785 MHz	30 MHz - 12.5 GHz	-50.05 dBc	≤ -20 dBc	Pass
Mid Channel 157 (32), 5785 MHz	12.5 GHz - 25 GHz	-49.53 dBc	≤ -20 dBc	Pass
Mid Channel 157 (32), 5785 MHz	25 GHz - 32 GHz	-49.04 dBc	≤ -20 dBc	Pass
Mid Channel 157 (32), 5785 MHz	32 GHz - 40 GHz	-39.47 dBc	≤ -20 dBc	Pass
High Channel 165 (34), 5825 MHz	30 MHz - 12.5 GHz	-51.23 dBc	≤ -20 dBc	Pass
High Channel 165 (34), 5825 MHz	12.5 GHz - 25 GHz	-50.37 dBc	≤ -20 dBc	Pass
High Channel 165 (34), 5825 MHz	25 GHz - 32 GHz	-48.86 dBc	≤ -20 dBc	Pass
High Channel 165 (34), 5825 MHz	32 GHz - 40 GHz	-39.64 dBc	≤ -20 dBc	Pass

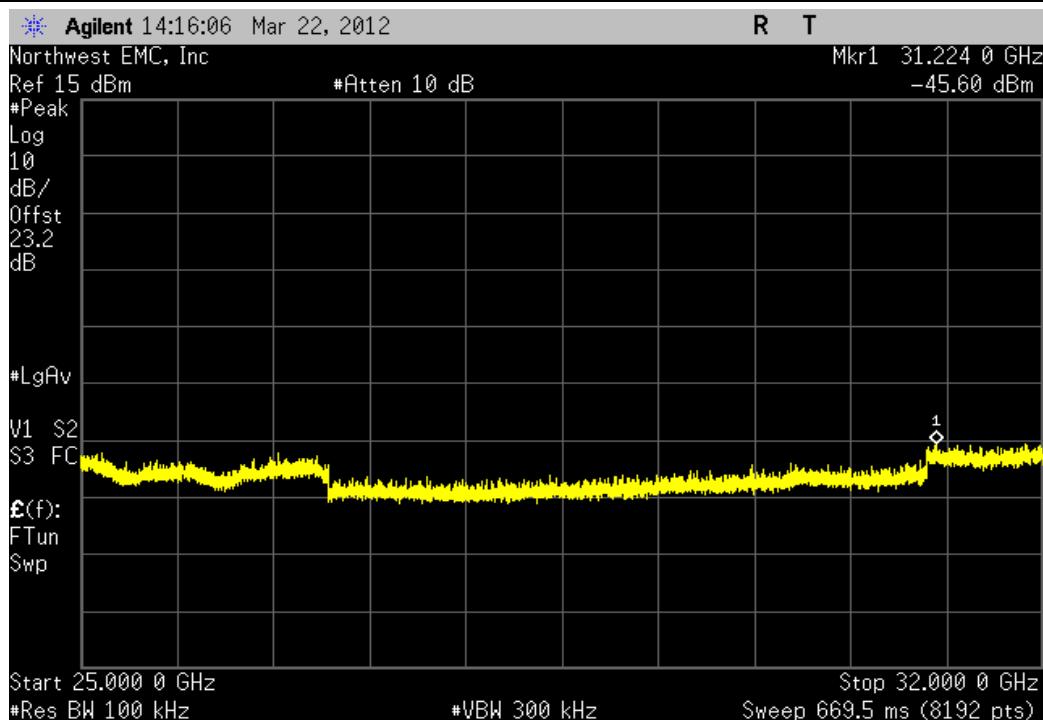
5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149 (30), 5745 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-50.68 dBc	≤ -20 dBc	Pass	



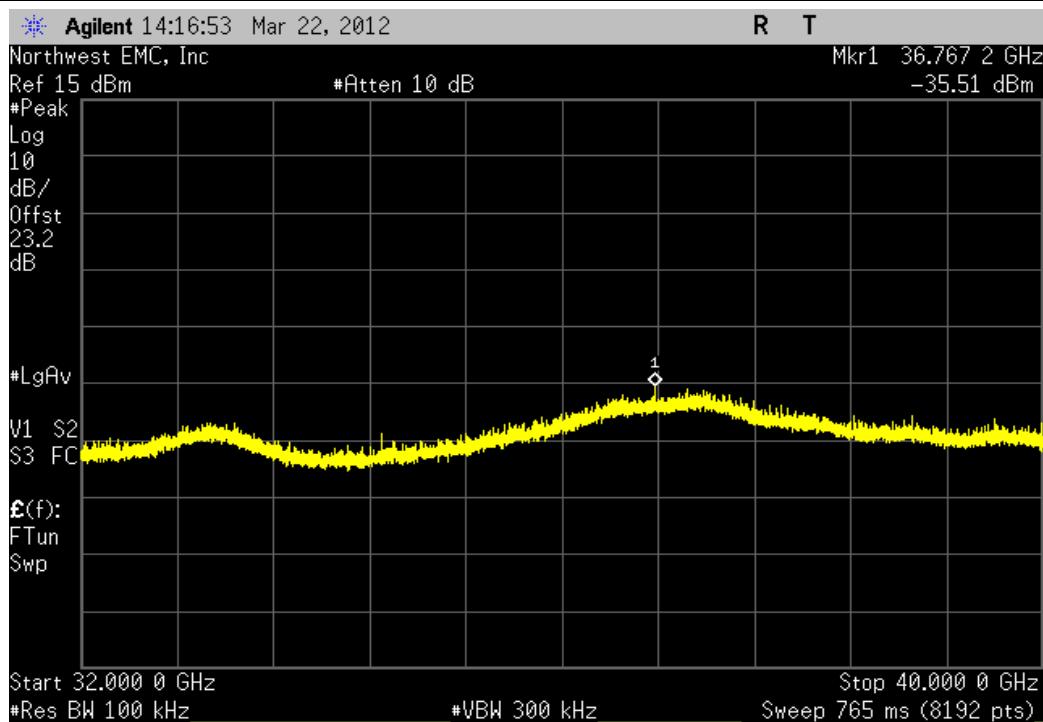
5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149 (30), 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-49.64 dBc	≤ -20 dBc	Pass	

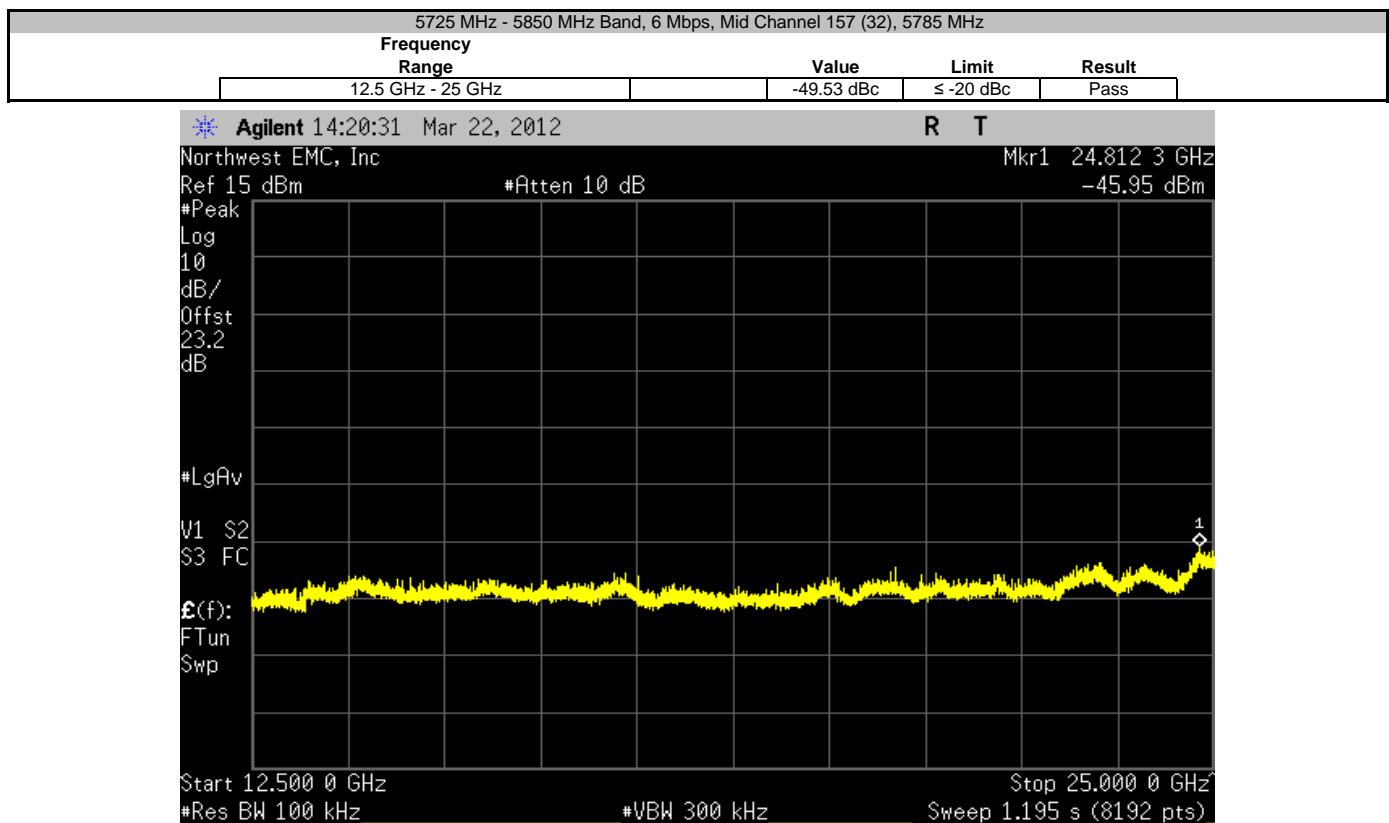
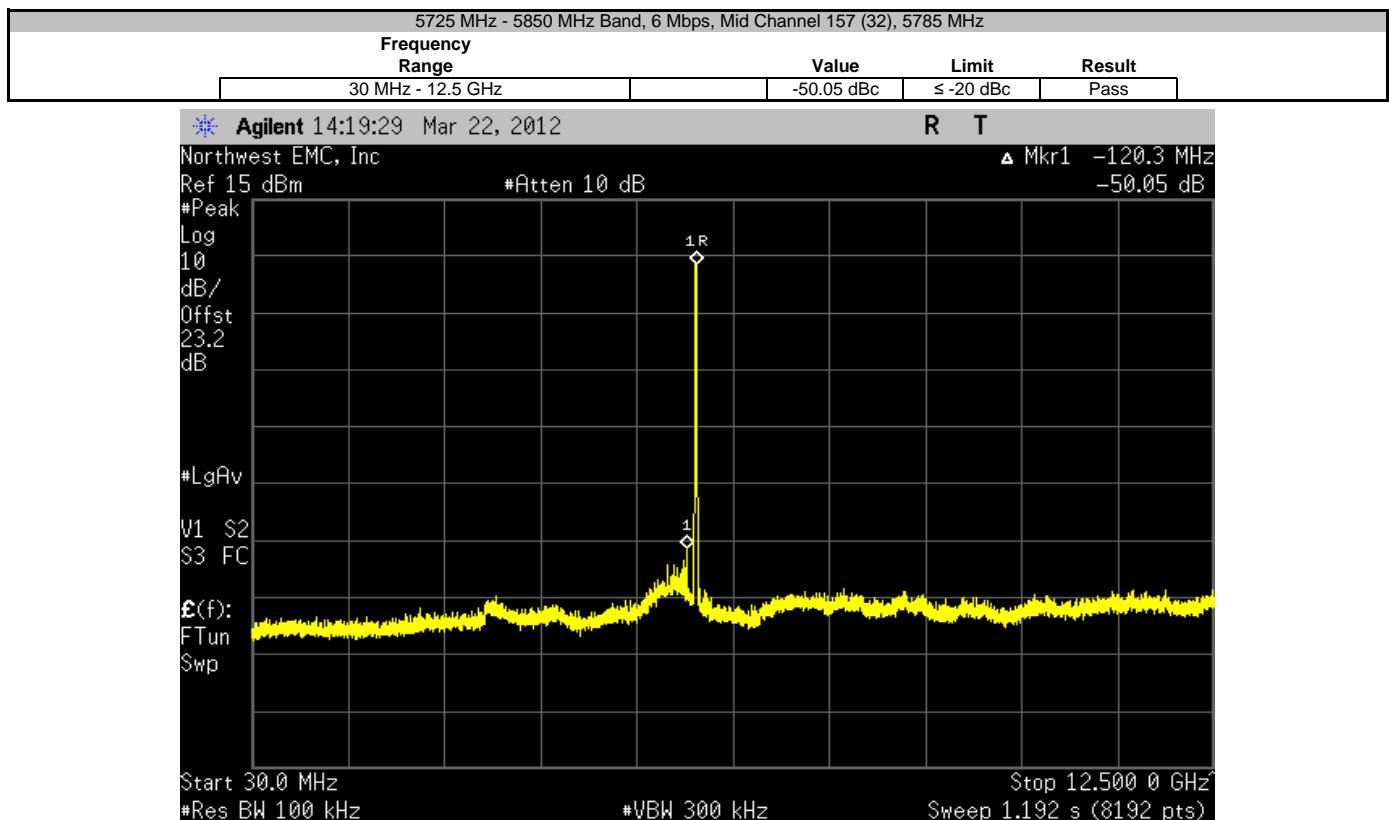


5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149 (30), 5745 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-49.04 dBc	≤ -20 dBc	Pass

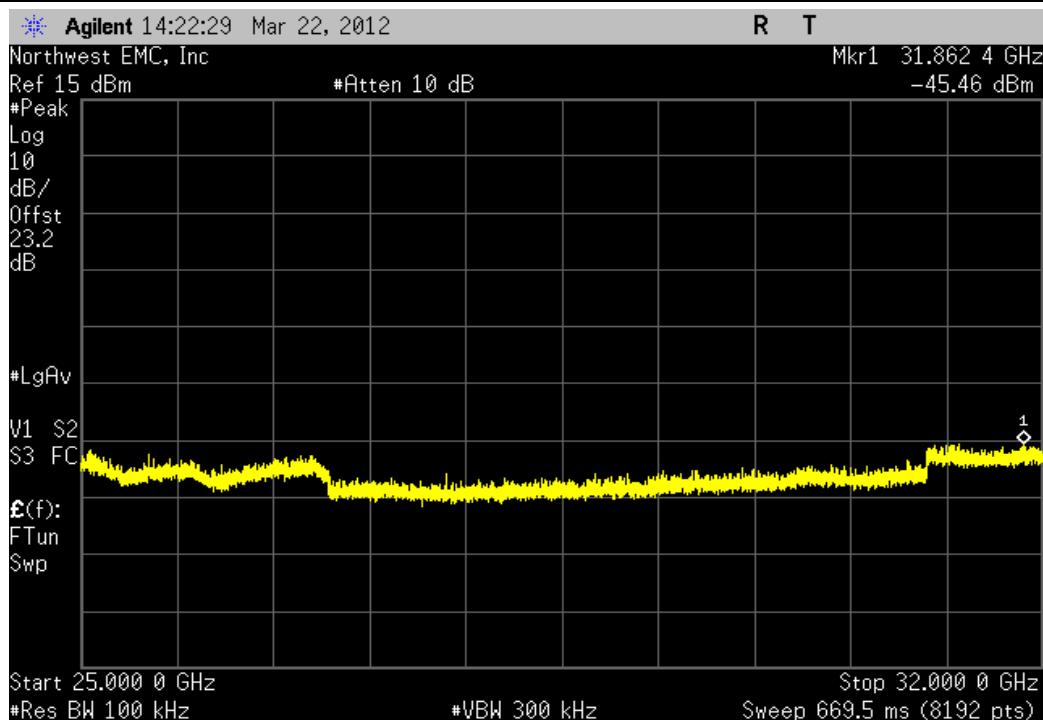


5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149 (30), 5745 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-38.95 dBc	≤ -20 dBc	Pass

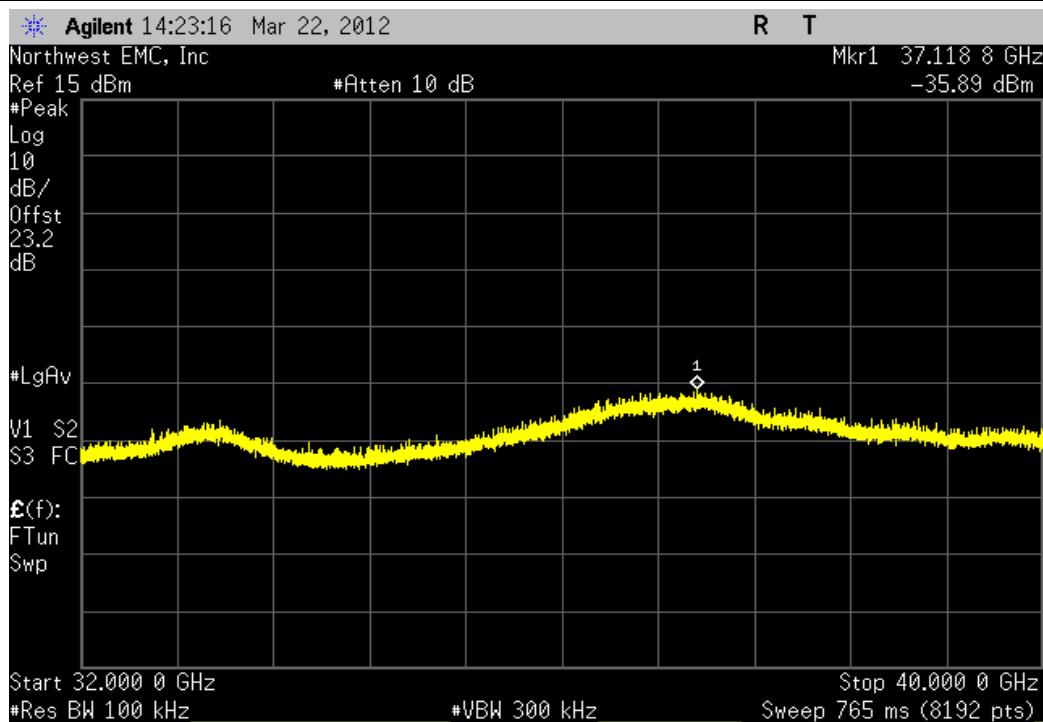




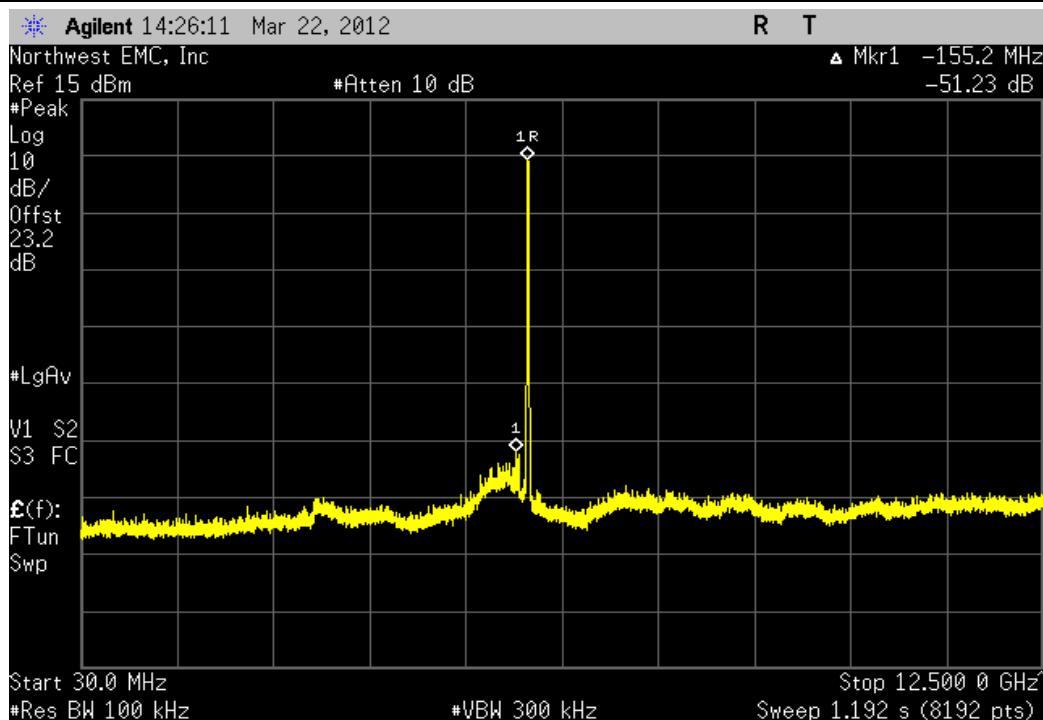
5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157 (32), 5785 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-49.04 dBc	≤ -20 dBc	Pass



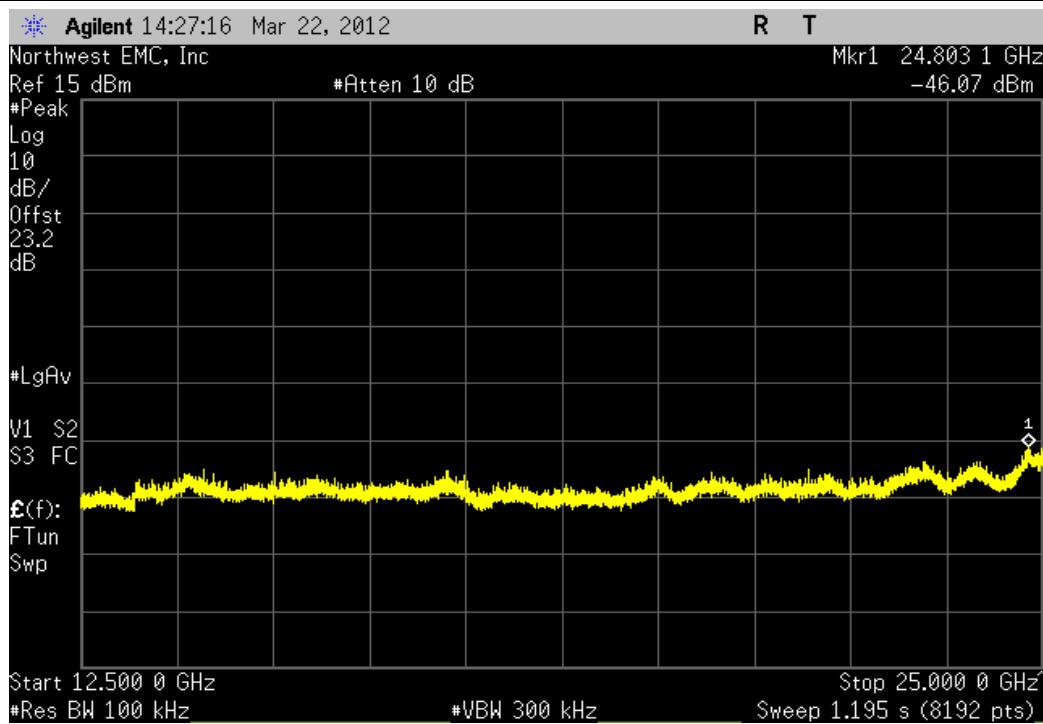
5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157 (32), 5785 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-39.47 dBc	≤ -20 dBc	Pass



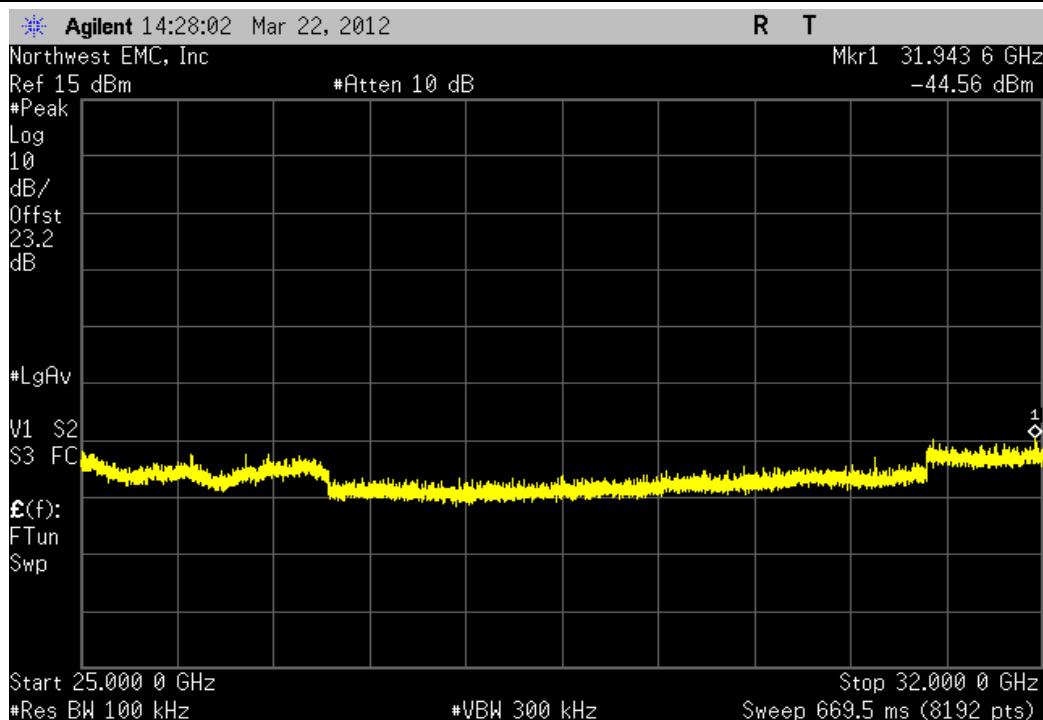
5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165 (34), 5825 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-51.23 dBc	≤ -20 dBc	Pass	



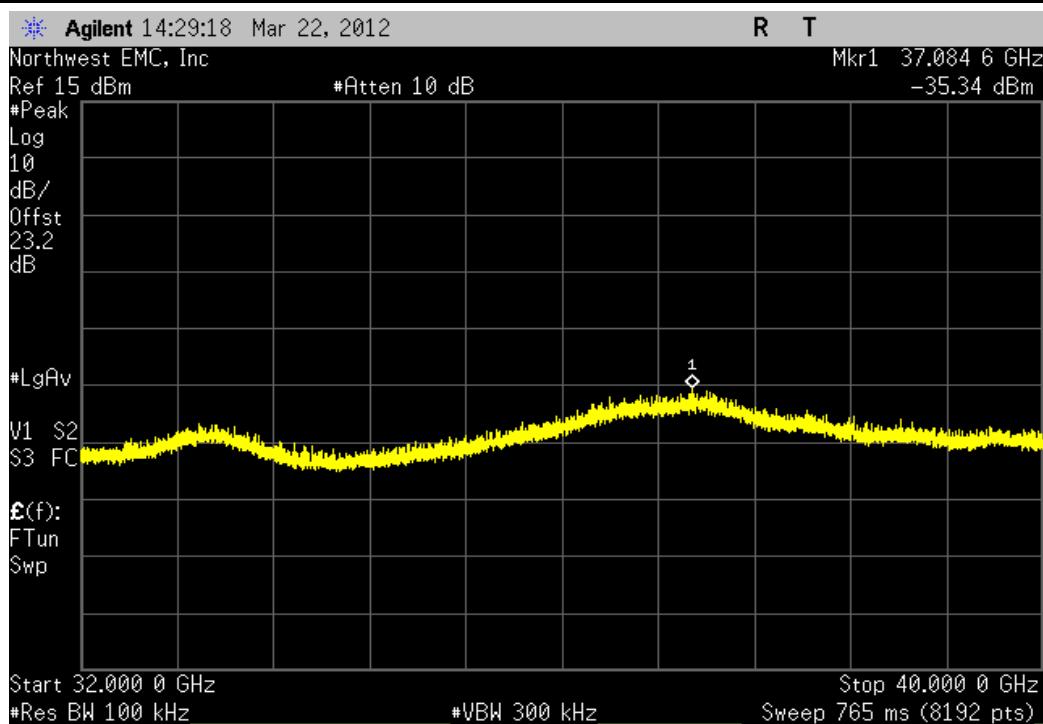
5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165 (34), 5825 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-50.37 dBc	≤ -20 dBc	Pass	



5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165 (34), 5825 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-48.86 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165 (34), 5825 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-39.64 dBc	≤ -20 dBc	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
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/12/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	5/5/2011	12

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

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, 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

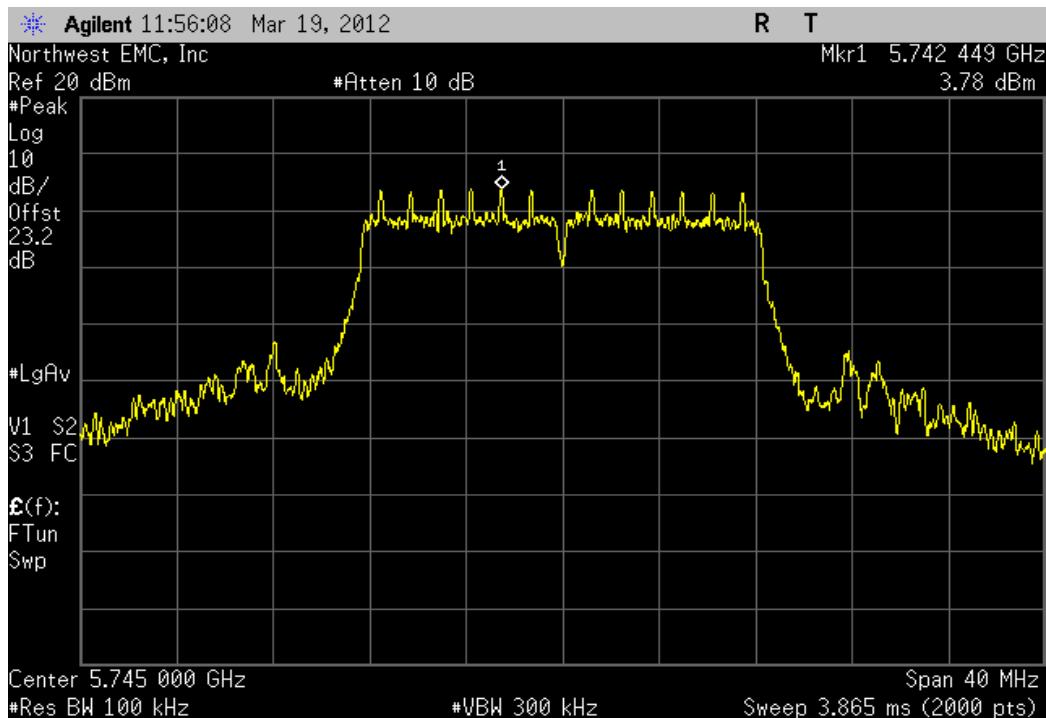
The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

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

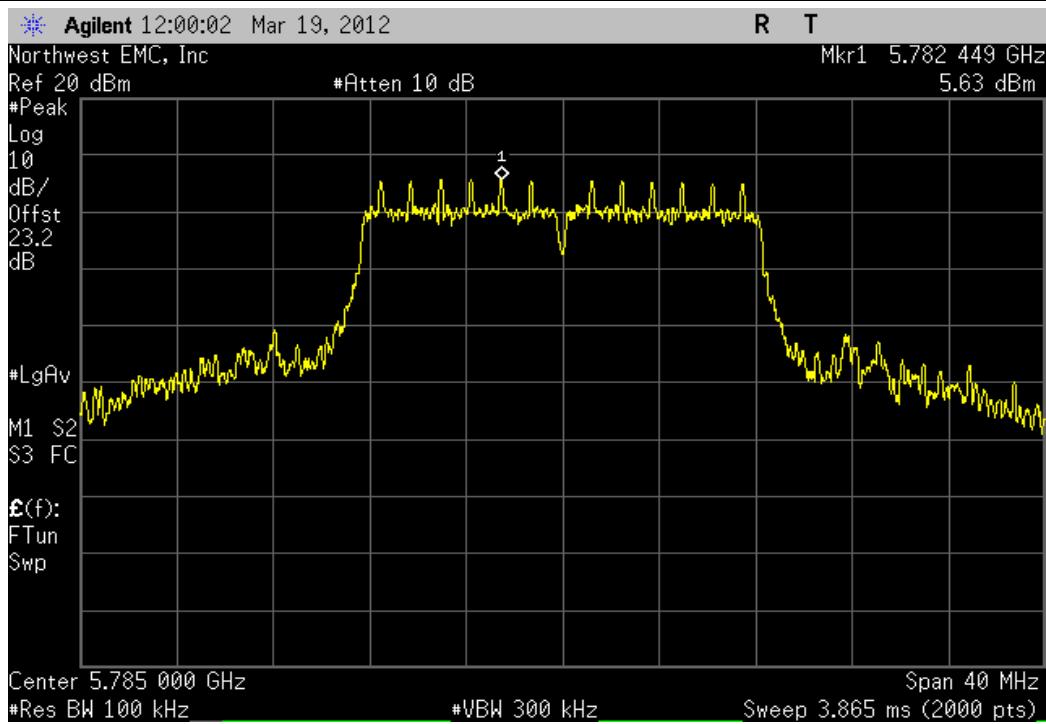
POWER SPECTRAL DENSITY

EUT: Model# 444-2216 (Glenwood)		Work Order: FOCU0127																				
Serial Number: 02EA06000024		Date: 03/19/12																				
Customer: Summit Semiconductor		Temperature: 21°C																				
Attendees: None		Humidity: 28%																				
Project: None		Barometric Pres.: 1013.5 mb																				
Tested by: Rod Peloquin	Power: 18 VDC	Job Site: EV06																				
TEST SPECIFICATIONS																						
FCC 15.247:2012		Test Method: ANSI C63.10:2009																				
COMMENTS																						
None																						
DEVIATIONS FROM TEST STANDARD																						
None																						
Configuration #	1	Signature: 																				
<table border="1"> <thead> <tr> <th>Peak Reading dBm</th> <th>BWCF dB</th> <th>Value dBm / 3 kHz</th> <th>Limit</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>3.78</td> <td>-15.2</td> <td>-11.42</td> <td>8 dBm / 3 kHz</td> <td>Pass</td> </tr> <tr> <td>5.63</td> <td>-15.2</td> <td>-9.57</td> <td>8 dBm / 3 kHz</td> <td>Pass</td> </tr> <tr> <td>5.98</td> <td>-15.2</td> <td>-9.22</td> <td>8 dBm / 3 kHz</td> <td>Pass</td> </tr> </tbody> </table>			Peak Reading dBm	BWCF dB	Value dBm / 3 kHz	Limit	Result	3.78	-15.2	-11.42	8 dBm / 3 kHz	Pass	5.63	-15.2	-9.57	8 dBm / 3 kHz	Pass	5.98	-15.2	-9.22	8 dBm / 3 kHz	Pass
Peak Reading dBm	BWCF dB	Value dBm / 3 kHz	Limit	Result																		
3.78	-15.2	-11.42	8 dBm / 3 kHz	Pass																		
5.63	-15.2	-9.57	8 dBm / 3 kHz	Pass																		
5.98	-15.2	-9.22	8 dBm / 3 kHz	Pass																		
6 Mbps																						
Low Channel 149, 5745 MHz																						
Mid Channel 157, 5785 MHz																						
High Channel 165, 5825 MHz																						

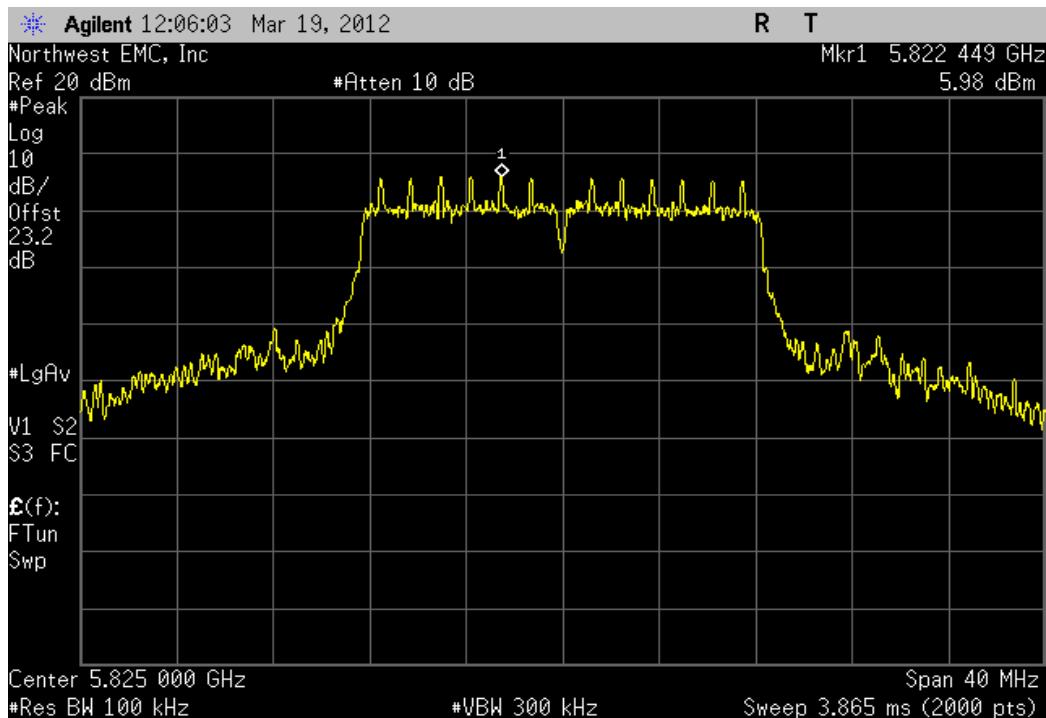
6 Mbps, Low Channel 149, 5745 MHz					
Peak Reading	BWCF	Value	Limit	Result	
dBm	dB	dBm / 3 kHz			
3.78	-15.2	-11.42	8 dBm / 3 kHz	Pass	



6 Mbps, Mid Channel 157, 5785 MHz					
Peak Reading	BWCF	Value	Limit	Result	
dBm	dB	dBm / 3 kHz			
5.63	-15.2	-9.57	8 dBm / 3 kHz	Pass	



6 Mbps, High Channel 165, 5825 MHz					
Peak Reading	BWCF	Value	Limit	Result	
dBm	dB	dBm / 3 kHz			
5.98	-15.2	-9.22	8 dBm / 3 kHz	Pass	



Emission 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
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/12/2011	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/2/2011	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

FCC KDB 558074 D01 V01, 1/18/2012 was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured if available. 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.

The spectrum analyzer settings were as follows:

Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.

RBW = Approx. 1% of the emission bandwidth (B).

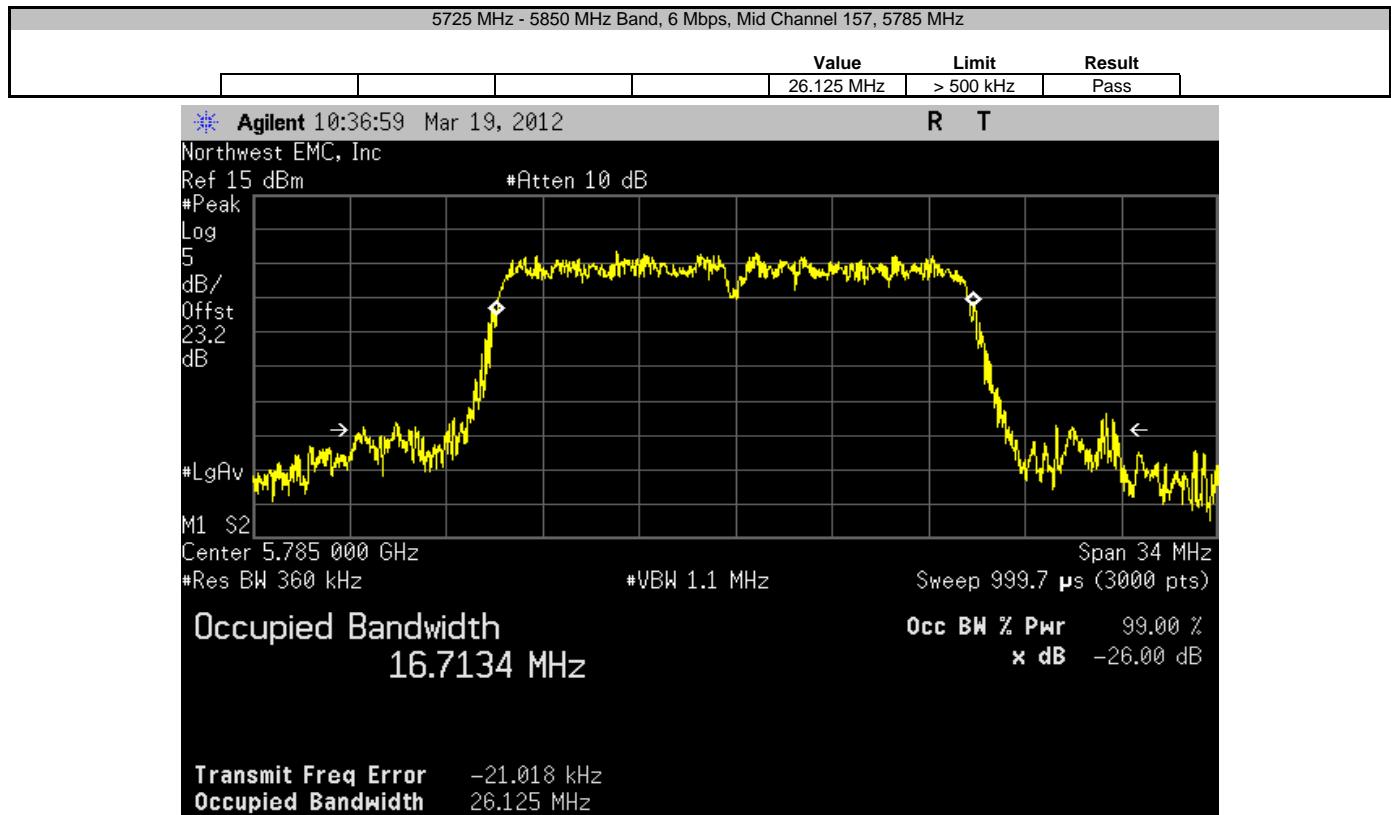
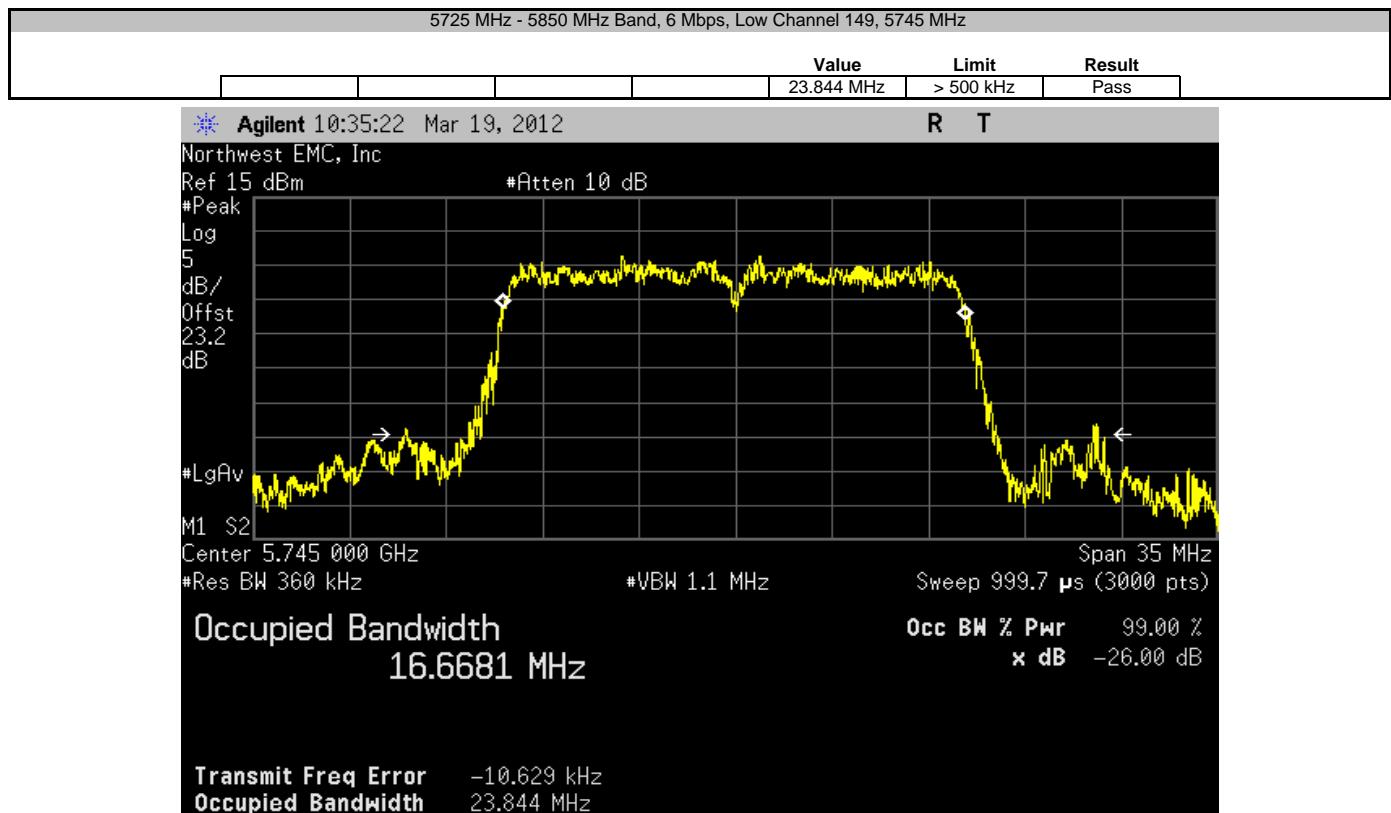
VBW = > 3x of the RBW

A peak detector was used.

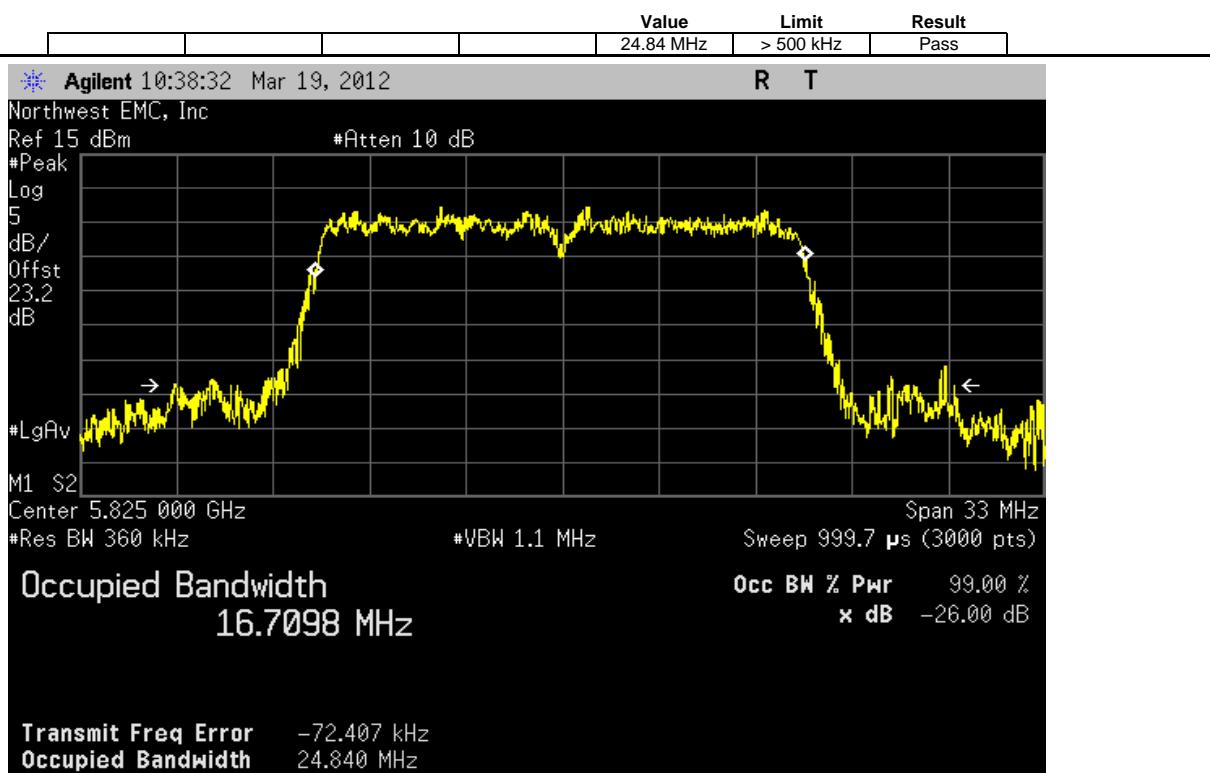
The analyzer Occupied Bandwidth measurement function was used to measure the x dB -26 dB emission bandwidth.

Emission Bandwidth

EUT: Model# 444-2216 (Glenwood)	Work Order: FOCU0127													
Serial Number: 02EA06000024	Date: 03/19/12													
Customer: Summit Semiconductor	Temperature: 21°C													
Attendees: None	Humidity: 28%													
Project: None	Barometric Pres.: 1013.5 mb													
Tested by: Rod Peloquin	Job Site: EV06													
TEST SPECIFICATIONS														
FCC 15.247:2012	Test Method: ANSI C63.10:2009													
COMMENTS														
None														
DEVIATIONS FROM TEST STANDARD														
None														
Configuration #	1	 Signature												
		Value Limit Result												
5725 MHz - 5850 MHz Band 6 Mbps		<table> <tr> <td>Low Channel 149, 5745 MHz</td> <td>23.844 MHz</td> <td>> 500 kHz</td> <td>Pass</td> </tr> <tr> <td>Mid Channel 157, 5785 MHz</td> <td>26.125 MHz</td> <td>> 500 kHz</td> <td>Pass</td> </tr> <tr> <td>High Channel 165, 5825 MHz</td> <td>24.84 MHz</td> <td>> 500 kHz</td> <td>Pass</td> </tr> </table>	Low Channel 149, 5745 MHz	23.844 MHz	> 500 kHz	Pass	Mid Channel 157, 5785 MHz	26.125 MHz	> 500 kHz	Pass	High Channel 165, 5825 MHz	24.84 MHz	> 500 kHz	Pass
Low Channel 149, 5745 MHz	23.844 MHz	> 500 kHz	Pass											
Mid Channel 157, 5785 MHz	26.125 MHz	> 500 kHz	Pass											
High Channel 165, 5825 MHz	24.84 MHz	> 500 kHz	Pass											



5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz



SPURIOUS RADIATED EMISSIONS

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

MODES OF OPERATION

Transmitting 55% duty cycle, 6 Mbps

CHANNELS TESTED

Channel 149 (30), 5745 MHz
 Channel 157(32), 5785 MHz
 Channel 165 (34), 5825 MHz

POWER SETTINGS INVESTIGATED

18 VDC

CONFIGURATIONS INVESTIGATED

FOCU0127 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz
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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
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	12
Pre-Amplifier	Miteq	AM-1616-1000	AOL	6/28/2011	12
Antenna, Biconilog	EMCO	3142	AXJ	5/17/2011	12
EV01 Cables	N/A	Bilog Cables	EVA	6/28/2011	12
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	6/28/2011	12
Antenna, Horn	ETS	3115	AIZ	1/24/2011	24
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	6/28/2011	12
5.725-5.875 Notch Filter	Micro-Tronics	BRC50705	HGJ	8/6/2010	24
Antenna, Horn	ETS	3160-07	AHU	NCR	0
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2/28/2012	12
Antenna, Horn	ETS	3160-08	AHV	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/28/2012	12
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/28/2012	12
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/12/2011	12
Cable	ESM Cable Corp.	KMMK-72	EVY	9/12/2011	12
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	7/1/2011	12
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0
OC Cable	ESM Cable Corp.	KMMK-72	OCV	7/1/2011	12

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

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

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, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.



SPURIOUS RADIATED EMISSIONS

PSA 2012.01.13
EMI 2008.1.9

EUT: Model# 444-2216 (Glenwood)	Work Order: FOCU0127
Serial Number: 02EA06000012	Date: 03/16/12
Customer: Summit Semiconductor	Temperature: 22°C
Attendees: None	Humidity: 31%
Project: None	Barometric Pres.: 1005.9 mb
Tested by: Rod Peloquin	Job Site: EV01

TEST SPECIFICATIONS

FCC 15.247:2012

Test Method

ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

None

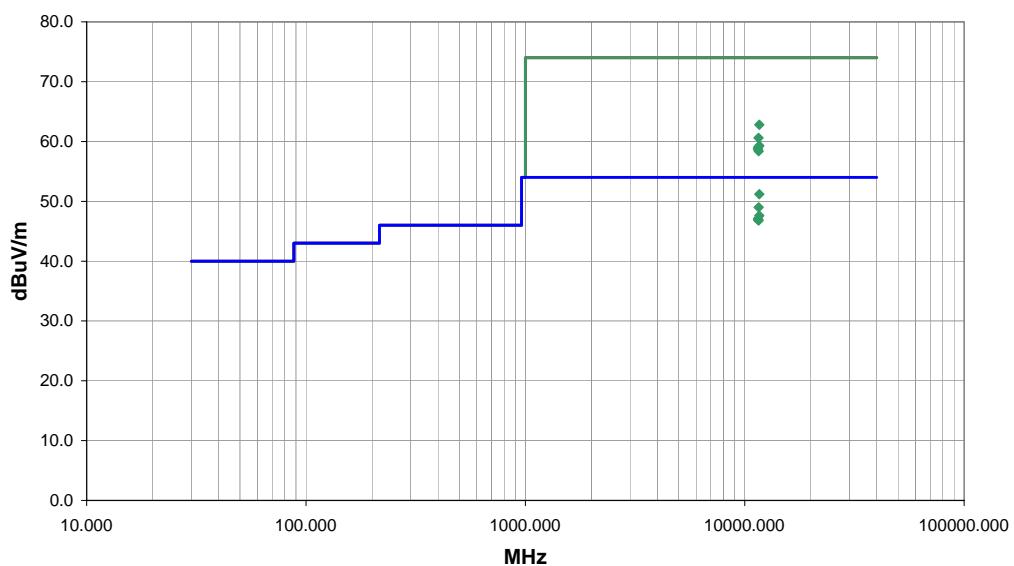
EUT OPERATING MODES

Transmitting 55% duty cycle, 6 Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	2	Configuration #	2	Results	Pass	Signature
						<i>Rod Peloquin</i>



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
11650.000	57.5	-6.3	80.0	1.1	3.0	0.0	H-Horn	AV	0.0	51.2	54.0	-2.8	Ch. 165 (34), EUT on side
11570.000	55.5	-6.5	77.0	1.1	3.0	0.0	H-Horn	AV	0.0	49.0	54.0	-5.0	Ch. 157 (32), EUT on side
11650.000	53.9	-6.3	91.0	1.1	3.0	0.0	V-Horn	AV	0.0	47.6	54.0	-6.4	Ch. 165 (34), EUT up
11490.000	53.8	-6.7	288.0	1.0	3.0	0.0	H-Horn	AV	0.0	47.1	54.0	-6.9	Ch. 149 (30), EUT on side
11490.000	53.6	-6.7	295.0	1.1	3.0	0.0	V-Horn	AV	0.0	46.9	54.0	-7.1	Ch. 149 (30), EUT up
11570.000	53.3	-6.5	91.0	1.0	3.0	0.0	V-Horn	AV	0.0	46.8	54.0	-7.2	Ch. 157 (32), EUT up
11650.050	69.1	-6.3	80.0	1.1	3.0	0.0	H-Horn	PK	0.0	62.8	74.0	-11.2	Ch. 165 (34), EUT on side
11562.150	67.1	-6.5	77.0	1.1	3.0	0.0	H-Horn	PK	0.0	60.6	74.0	-13.4	Ch. 157 (32), EUT on side
11650.100	65.6	-6.3	91.0	1.1	3.0	0.0	V-Horn	PK	0.0	59.3	74.0	-14.7	Ch. 165 (34), EUT up
11490.200	65.7	-6.7	288.0	1.0	3.0	0.0	H-Horn	PK	0.0	59.0	74.0	-15.0	Ch. 149 (30), EUT on side
11481.950	65.4	-6.7	294.0	1.1	3.0	0.0	V-Horn	PK	0.0	58.7	74.0	-15.3	Ch. 149 (30), EUT up
11570.100	64.9	-6.5	91.0	1.0	3.0	0.0	V-Horn	PK	0.0	58.4	74.0	-15.6	Ch. 157 (32), EUT up

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.

MODES OF OPERATION

Transmitting 55% duty cycle, Ch. 165 (34) 5825 MHz
 Transmitting 55% duty cycle, Ch. 157 (32) 5785 MHz
 Transmitting 55% duty cycle, Ch. 149 (30) 5745 MHz

POWER SETTINGS INVESTIGATED

18 VDC

CONFIGURATIONS INVESTIGATED

4 - Powerline Conducted Emissions

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440	AFE	1/23/2012	12 mo
LISN	Solar	9252-50-R-24-BNC	LIR	11/4/2011	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	2/9/2011	24 mo
Attenuator	Coaxicom	66702 5910-20	RBJ	4/4/2011	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	6/17/2011	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

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

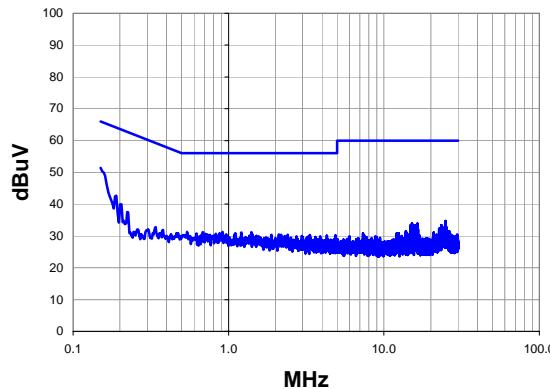
TEST DESCRIPTION

The EUT will be powered indirectly from the AC power line while operating in a host device. Therefore, conducted emissions measurements were made on the DC input of the EUT, or on the DC input of the device used to power the EUT. The AC power line conducted emissions were measured on a linear power supply providing DC power to the module while providing no filtering of the power inputs to the module.

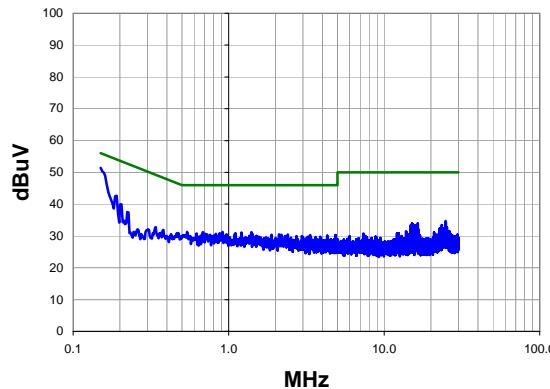
The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band or bands. The EUT was transmitting in the mode which has the highest output power for the band. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

Work Order:	FOCU0127	Date:	03/23/12		
Project:	None	Temperature:	21 °C		
Job Site:	EV07	Humidity:	39% RH		
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin
EUT:	Model# 444-2216 (Glenwood)				
Configuration:	4				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	18 VDC				
Operating Mode:	Transmitting 55% duty cycle, Ch. 149 (30) 5745 MHz				
Deviations:	No deviations.				
Comments:	None				
Test Specifications		Test Method			
FCC 15.207:2012		ANSI C63.10:2009			
Run #	15	Line:	High Line	Ext. Attenuation:	20
				Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

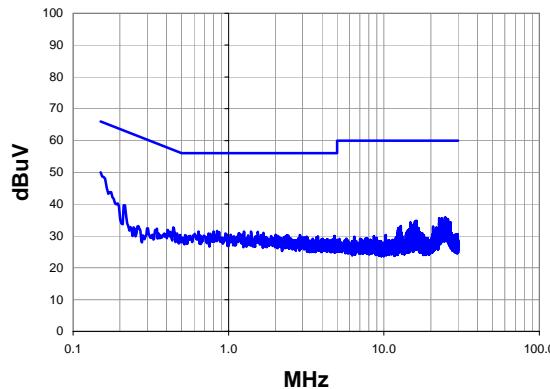
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.3	20.1	51.4	66.0	-14.6
0.190	22.6	20.1	42.7	64.0	-21.3
0.201	19.8	20.1	39.9	63.6	-23.7
0.540	11.2	20.1	31.3	56.0	-24.7
0.915	11.2	20.1	31.3	56.0	-24.7
0.682	11.1	20.1	31.2	56.0	-24.8
1.400	11.1	20.1	31.2	56.0	-24.8
1.210	11.0	20.1	31.1	56.0	-24.9
1.105	10.8	20.1	30.9	56.0	-25.1
0.624	10.7	20.1	30.8	56.0	-25.2
0.223	17.4	20.1	37.5	62.7	-25.2
24.891	13.8	21.0	34.8	60.0	-25.2
1.422	10.5	20.1	30.6	56.0	-25.4
2.107	10.4	20.1	30.5	56.0	-25.5
1.888	10.3	20.1	30.4	56.0	-25.6
2.183	10.3	20.1	30.4	56.0	-25.6
2.402	10.3	20.1	30.4	56.0	-25.6
3.342	10.2	20.1	30.3	56.0	-25.7
4.869	10.1	20.2	30.3	56.0	-25.7
1.513	10.0	20.1	30.1	56.0	-25.9

Peak Data - vs - Average Limit

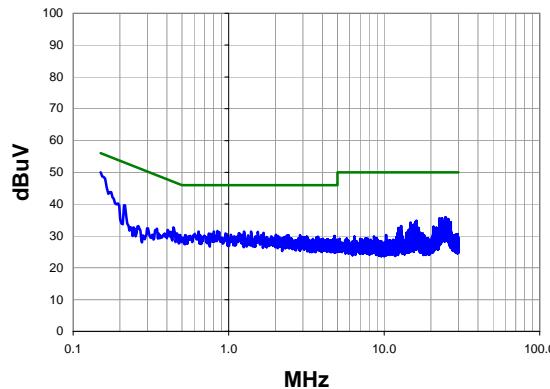
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.3	20.1	51.4	56.0	-4.6
0.190	22.6	20.1	42.7	54.0	-11.3
0.201	19.8	20.1	39.9	53.6	-13.7
0.540	11.2	20.1	31.3	46.0	-14.7
0.915	11.2	20.1	31.3	46.0	-14.7
0.682	11.1	20.1	31.2	46.0	-14.8
1.400	11.1	20.1	31.2	46.0	-14.8
1.210	11.0	20.1	31.1	46.0	-14.9
1.105	10.8	20.1	30.9	46.0	-15.1
0.624	10.7	20.1	30.8	46.0	-15.2
0.223	17.4	20.1	37.5	52.7	-15.2
24.891	13.8	21.0	34.8	50.0	-15.2
1.422	10.5	20.1	30.6	46.0	-15.4
2.107	10.4	20.1	30.5	46.0	-15.5
1.888	10.3	20.1	30.4	46.0	-15.6
2.183	10.3	20.1	30.4	46.0	-15.6
2.402	10.3	20.1	30.4	46.0	-15.6
3.342	10.2	20.1	30.3	46.0	-15.7
4.869	10.1	20.2	30.3	46.0	-15.7
1.513	10.0	20.1	30.1	46.0	-15.9

Work Order:	FOCU0127	Date:	03/23/12		
Project:	None	Temperature:	21 °C		
Job Site:	EV07	Humidity:	39% RH		
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin
EUT:	Model# 444-2216 (Glenwood)				
Configuration:	4				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	18 VDC				
Operating Mode:	Transmitting 55% duty cycle, Ch. 149 (30) 5745 MHz				
Deviations:	No deviations.				
Comments:	None				
Test Specifications		Test Method			
FCC 15.207:2012		ANSI C63.10:2009			
Run #	16	Line:	Neutral	Ext. Attenuation:	20
				Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

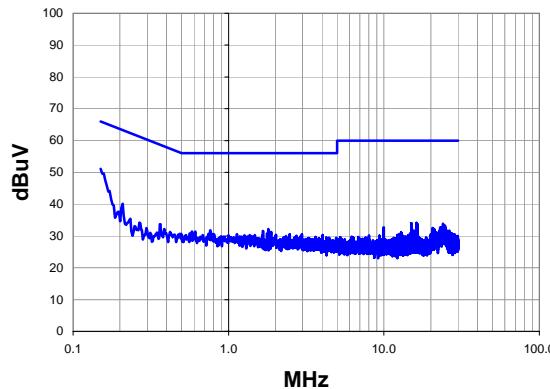
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	29.9	20.1	50.0	66.0	-16.0
0.212	19.5	20.1	39.6	63.1	-23.5
24.752	14.9	20.9	35.8	60.0	-24.2
24.898	14.8	21.0	35.8	60.0	-24.2
0.442	12.6	20.1	32.7	57.0	-24.3
0.846	11.5	20.1	31.6	56.0	-24.4
22.690	14.7	20.9	35.6	60.0	-24.4
23.593	14.6	20.9	35.5	60.0	-24.5
0.642	11.3	20.1	31.4	56.0	-24.6
0.802	11.3	20.1	31.4	56.0	-24.6
1.258	11.3	20.1	31.4	56.0	-24.6
1.396	11.3	20.1	31.4	56.0	-24.6
1.542	11.2	20.1	31.3	56.0	-24.7
25.827	14.3	21.0	35.3	60.0	-24.7
25.780	14.2	21.0	35.2	60.0	-24.8
1.677	10.9	20.1	31.0	56.0	-25.0
1.163	10.8	20.1	30.9	56.0	-25.1
24.822	13.9	21.0	34.9	60.0	-25.1
0.744	10.7	20.1	30.8	56.0	-25.2
0.955	10.7	20.1	30.8	56.0	-25.2

Peak Data - vs - Average Limit

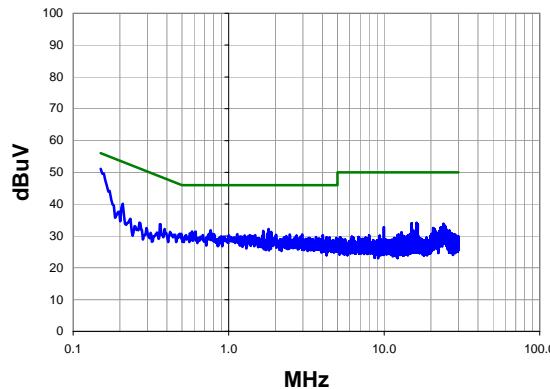
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	29.9	20.1	50.0	56.0	-6.0
0.212	19.5	20.1	39.6	53.1	-13.5
24.752	14.9	20.9	35.8	50.0	-14.2
24.898	14.8	21.0	35.8	50.0	-14.2
0.442	12.6	20.1	32.7	47.0	-14.3
0.846	11.5	20.1	31.6	46.0	-14.4
22.690	14.7	20.9	35.6	50.0	-14.4
23.593	14.6	20.9	35.5	50.0	-14.5
0.642	11.3	20.1	31.4	46.0	-14.6
0.802	11.3	20.1	31.4	46.0	-14.6
1.258	11.3	20.1	31.4	46.0	-14.6
1.396	11.3	20.1	31.4	46.0	-14.6
1.542	11.2	20.1	31.3	46.0	-14.7
25.827	14.3	21.0	35.3	50.0	-14.7
25.780	14.2	21.0	35.2	50.0	-14.8
1.677	10.9	20.1	31.0	46.0	-15.0
1.163	10.8	20.1	30.9	46.0	-15.1
24.822	13.9	21.0	34.9	50.0	-15.1
0.744	10.7	20.1	30.8	46.0	-15.2
0.955	10.7	20.1	30.8	46.0	-15.2

Work Order:	FOCU0127	Date:	03/23/12		
Project:	None	Temperature:	21 °C		
Job Site:	EV07	Humidity:	39% RH		
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin
EUT:	Model# 444-2216 (Glenwood)				
Configuration:	4				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	18 VDC				
Operating Mode:	Transmitting 55% duty cycle, Ch. 157 (32) 5785 MHz				
Deviations:	No deviations.				
Comments:	None				
Test Specifications		Test Method			
FCC 15.207:2012		ANSI C63.10:2009			
Run #	17	Line:	High Line	Ext. Attenuation:	20
				Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

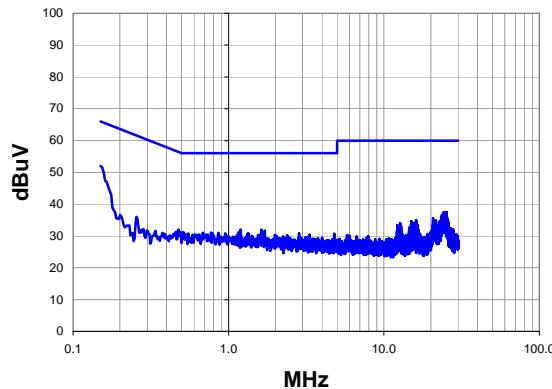
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.0	20.1	51.1	66.0	-14.9
0.208	20.0	20.1	40.1	63.3	-23.2
1.804	12.1	20.1	32.2	56.0	-23.8
0.766	11.7	20.1	31.8	56.0	-24.2
1.666	11.5	20.1	31.6	56.0	-24.4
0.580	11.3	20.1	31.4	56.0	-24.6
1.877	11.2	20.1	31.3	56.0	-24.7
0.361	13.6	20.1	33.7	58.7	-25.0
1.856	10.8	20.1	30.9	56.0	-25.1
1.772	10.7	20.1	30.8	56.0	-25.2
1.134	10.5	20.1	30.6	56.0	-25.4
2.475	10.4	20.1	30.5	56.0	-25.5
2.967	10.4	20.1	30.5	56.0	-25.5
2.016	10.3	20.1	30.4	56.0	-25.6
1.367	10.2	20.1	30.3	56.0	-25.7
1.480	10.2	20.1	30.3	56.0	-25.7
4.035	10.2	20.1	30.3	56.0	-25.7
1.265	10.1	20.1	30.2	56.0	-25.8
16.163	13.6	20.5	34.1	60.0	-25.9
1.648	10.0	20.1	30.1	56.0	-25.9

Peak Data - vs - Average Limit

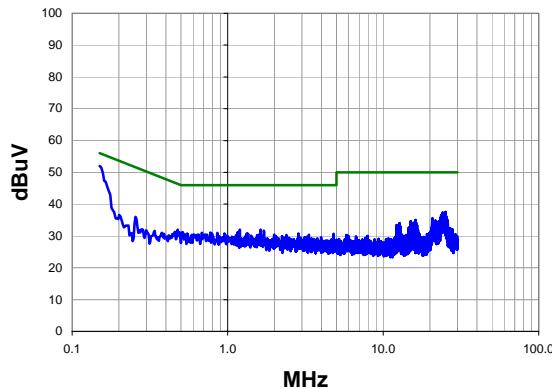
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.0	20.1	51.1	56.0	-4.9
0.208	20.0	20.1	40.1	53.3	-13.2
1.804	12.1	20.1	32.2	46.0	-13.8
0.766	11.7	20.1	31.8	46.0	-14.2
1.666	11.5	20.1	31.6	46.0	-14.4
0.580	11.3	20.1	31.4	46.0	-14.6
1.877	11.2	20.1	31.3	46.0	-14.7
0.361	13.6	20.1	33.7	48.7	-15.0
1.856	10.8	20.1	30.9	46.0	-15.1
1.772	10.7	20.1	30.8	46.0	-15.2
1.134	10.5	20.1	30.6	46.0	-15.4
2.475	10.4	20.1	30.5	46.0	-15.5
2.967	10.4	20.1	30.5	46.0	-15.5
2.016	10.3	20.1	30.4	46.0	-15.6
1.367	10.2	20.1	30.3	46.0	-15.7
1.480	10.2	20.1	30.3	46.0	-15.7
4.035	10.2	20.1	30.3	46.0	-15.7
1.265	10.1	20.1	30.2	46.0	-15.8
16.163	13.6	20.5	34.1	50.0	-15.9
1.648	10.0	20.1	30.1	46.0	-15.9

Work Order:	FOCU0127	Date:	03/23/12				
Project:	None	Temperature:	21 °C				
Job Site:	EV07	Humidity:	39% RH				
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin		
EUT:	Model# 444-2216 (Glenwood)						
Configuration:	4						
Customer:	Summit Semiconductor						
Attendees:	None						
EUT Power:	18 VDC						
Operating Mode:	Transmitting 55% duty cycle, Ch. 157 (32) 5785 MHz						
Deviations:	No deviations.						
Comments:	None						
Test Specifications		Test Method					
FCC 15.207:2012		ANSI C63.10:2009					
Run #	18	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

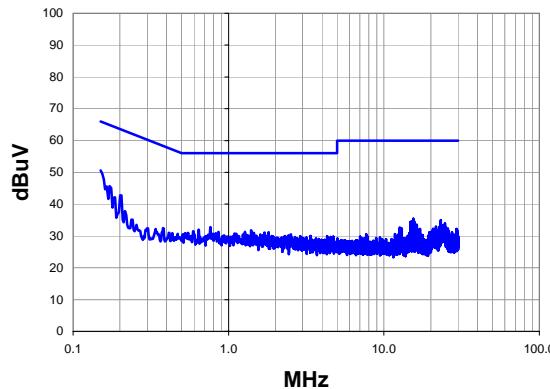
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.9	20.1	52.0	66.0	-14.0
25.233	16.6	21.0	37.6	60.0	-22.4
24.195	16.5	20.9	37.4	60.0	-22.6
24.705	16.2	20.9	37.1	60.0	-22.9
24.439	16.1	20.9	37.0	60.0	-23.0
24.104	15.9	20.9	36.8	60.0	-23.2
24.275	15.8	20.9	36.7	60.0	-23.3
24.756	15.7	20.9	36.6	60.0	-23.4
24.359	15.7	20.9	36.6	60.0	-23.4
23.674	15.7	20.9	36.6	60.0	-23.4
24.778	15.5	20.9	36.4	60.0	-23.6
23.626	15.5	20.9	36.4	60.0	-23.6
24.723	15.4	20.9	36.3	60.0	-23.7
24.614	15.4	20.9	36.3	60.0	-23.7
24.330	15.2	20.9	36.1	60.0	-23.9
23.830	15.2	20.9	36.1	60.0	-23.9
25.386	15.1	21.0	36.1	60.0	-23.9
24.898	15.1	21.0	36.1	60.0	-23.9
23.991	15.1	20.9	36.0	60.0	-24.0
1.196	11.9	20.1	32.0	56.0	-24.0

Peak Data - vs - Average Limit

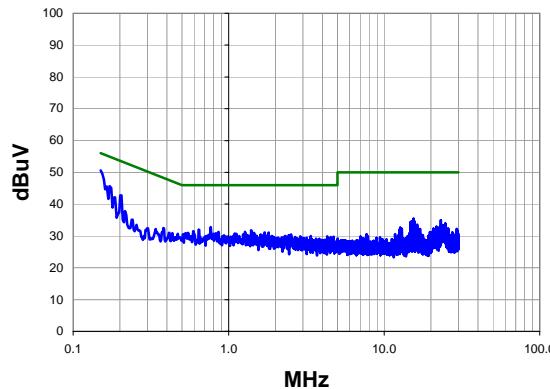
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	31.9	20.1	52.0	56.0	-4.0
25.233	16.6	21.0	37.6	50.0	-12.4
24.195	16.5	20.9	37.4	50.0	-12.6
24.705	16.2	20.9	37.1	50.0	-12.9
24.439	16.1	20.9	37.0	50.0	-13.0
24.104	15.9	20.9	36.8	50.0	-13.2
24.275	15.8	20.9	36.7	50.0	-13.3
24.756	15.7	20.9	36.6	50.0	-13.4
24.359	15.7	20.9	36.6	50.0	-13.4
23.674	15.7	20.9	36.6	50.0	-13.4
24.778	15.5	20.9	36.4	50.0	-13.6
23.626	15.5	20.9	36.4	50.0	-13.6
24.723	15.4	20.9	36.3	50.0	-13.7
24.614	15.4	20.9	36.3	50.0	-13.7
24.330	15.2	20.9	36.1	50.0	-13.9
23.830	15.2	20.9	36.1	50.0	-13.9
25.386	15.1	21.0	36.1	50.0	-13.9
24.898	15.1	21.0	36.1	50.0	-13.9
23.991	15.1	20.9	36.0	50.0	-14.0
1.196	11.9	20.1	32.0	46.0	-14.0

Work Order:	FOCU0127	Date:	03/23/12		
Project:	None	Temperature:	21 °C		
Job Site:	EV07	Humidity:	39% RH		
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin
EUT:	Model# 444-2216 (Glenwood)				
Configuration:	4				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	18 VDC				
Operating Mode:	Transmitting 55% duty cycle, Ch. 165 (34) 5825 MHz				
Deviations:	No deviations.				
Comments:	None				
Test Specifications		Test Method			
FCC 15.207:2012		ANSI C63.10:2009			
Run #	19	Line:	High Line	Ext. Attenuation:	20
				Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

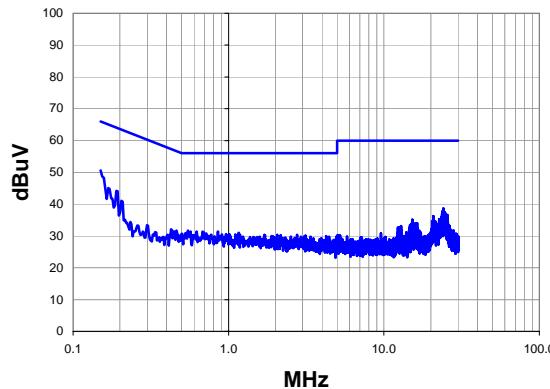
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	30.5	20.1	50.6	66.0	-15.4
0.172	25.6	20.1	45.7	64.9	-19.2
0.201	22.7	20.1	42.8	63.6	-20.8
0.186	22.1	20.1	42.2	64.2	-22.0
0.766	12.7	20.1	32.8	56.0	-23.2
0.642	11.9	20.1	32.0	56.0	-24.0
1.396	11.7	20.1	31.8	56.0	-24.2
0.591	11.4	20.1	31.5	56.0	-24.5
15.474	14.9	20.5	35.4	60.0	-24.6
1.276	11.2	20.1	31.3	56.0	-24.7
1.702	11.0	20.1	31.1	56.0	-24.9
1.812	11.0	20.1	31.1	56.0	-24.9
1.455	10.9	20.1	31.0	56.0	-25.0
23.167	14.0	20.9	34.9	60.0	-25.1
0.216	17.7	20.1	37.8	63.0	-25.2
1.094	10.7	20.1	30.8	56.0	-25.2
15.128	14.1	20.5	34.6	60.0	-25.4
15.667	14.0	20.5	34.5	60.0	-25.5
1.604	10.4	20.1	30.5	56.0	-25.5
2.515	10.4	20.1	30.5	56.0	-25.5

Peak Data - vs - Average Limit

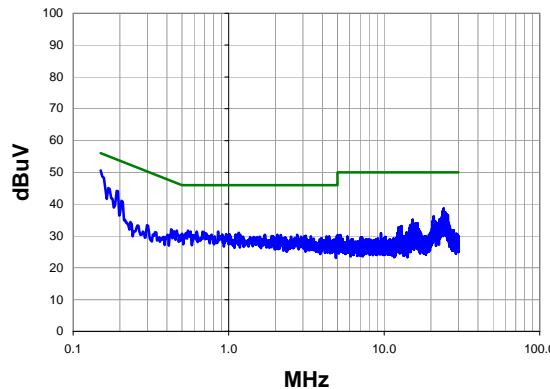
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	30.5	20.1	50.6	56.0	-5.4
0.172	25.6	20.1	45.7	54.9	-9.2
0.201	22.7	20.1	42.8	53.6	-10.8
0.186	22.1	20.1	42.2	54.2	-12.0
0.766	12.7	20.1	32.8	46.0	-13.2
0.642	11.9	20.1	32.0	46.0	-14.0
1.396	11.7	20.1	31.8	46.0	-14.2
0.591	11.4	20.1	31.5	46.0	-14.5
15.474	14.9	20.5	35.4	50.0	-14.6
1.276	11.2	20.1	31.3	46.0	-14.7
1.702	11.0	20.1	31.1	46.0	-14.9
1.812	11.0	20.1	31.1	46.0	-14.9
1.455	10.9	20.1	31.0	46.0	-15.0
23.167	14.0	20.9	34.9	50.0	-15.1
0.216	17.7	20.1	37.8	53.0	-15.2
1.094	10.7	20.1	30.8	46.0	-15.2
15.128	14.1	20.5	34.6	50.0	-15.4
15.667	14.0	20.5	34.5	50.0	-15.5
1.604	10.4	20.1	30.5	46.0	-15.5
2.515	10.4	20.1	30.5	46.0	-15.5

Work Order:	FOCU0127	Date:	03/23/12		
Project:	None	Temperature:	21 °C		
Job Site:	EV07	Humidity:	39% RH		
Serial Number:	02EA06000012	Barometric Pres.:	1011.5 mbar	Tested by:	Rod Peloquin
EUT:	Model# 444-2216 (Glenwood)				
Configuration:	4				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	18 VDC				
Operating Mode:	Transmitting 55% duty cycle, Ch. 165 (34) 5825 MHz				
Deviations:	No deviations.				
Comments:	None				
Test Specifications	FCC 15.207:2012	Test Method	ANSI C63.10:2009		
Run #	20	Line:	Neutral	Ext. Attenuation:	20
				Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	30.5	20.1	50.6	66.0	-15.4
0.190	24.1	20.1	44.2	64.0	-19.8
0.168	25.0	20.1	45.1	65.0	-19.9
24.111	17.7	20.9	38.6	60.0	-21.4
24.187	17.2	20.9	38.1	60.0	-21.9
24.173	17.0	20.9	37.9	60.0	-22.1
23.838	16.9	20.9	37.8	60.0	-22.2
0.205	20.9	20.1	41.0	63.4	-22.4
24.709	16.5	20.9	37.4	60.0	-22.6
24.570	16.3	20.9	37.2	60.0	-22.8
24.464	16.2	20.9	37.1	60.0	-22.9
24.749	16.0	20.9	36.9	60.0	-23.1
24.125	16.0	20.9	36.9	60.0	-23.1
25.142	15.9	21.0	36.9	60.0	-23.1
23.710	15.9	20.9	36.8	60.0	-23.2
24.217	15.6	20.9	36.5	60.0	-23.5
24.020	15.6	20.9	36.5	60.0	-23.5
25.623	15.5	21.0	36.5	60.0	-23.5
25.058	15.4	21.0	36.4	60.0	-23.6
20.795	15.5	20.8	36.3	60.0	-23.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	30.5	20.1	50.6	56.0	-5.4
0.190	24.1	20.1	44.2	54.0	-9.8
0.168	25.0	20.1	45.1	55.0	-9.9
24.111	17.7	20.9	38.6	50.0	-11.4
24.187	17.2	20.9	38.1	50.0	-11.9
24.173	17.0	20.9	37.9	50.0	-12.1
23.838	16.9	20.9	37.8	50.0	-12.2
0.205	20.9	20.1	41.0	53.4	-12.4
24.709	16.5	20.9	37.4	50.0	-12.6
24.570	16.3	20.9	37.2	50.0	-12.8
24.464	16.2	20.9	37.1	50.0	-12.9
24.749	16.0	20.9	36.9	50.0	-13.1
24.125	16.0	20.9	36.9	50.0	-13.1
25.142	15.9	21.0	36.9	50.0	-13.1
23.710	15.9	20.9	36.8	50.0	-13.2
24.217	15.6	20.9	36.5	50.0	-13.5
24.020	15.6	20.9	36.5	50.0	-13.5
25.623	15.5	21.0	36.5	50.0	-13.5
25.058	15.4	21.0	36.4	50.0	-13.6
20.795	15.5	20.8	36.3	50.0	-13.7