Summit Semiconductor

Model No. 444-2196H (Silverton)

EMC Test Report

Report No. FOCU0094

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: October 01, 2010
Summit Semiconductor
Model: 444-2196H (Silverton)

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Occupied Bandwidth	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Output Power – Channel Power	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Band Edge Compliance	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Spurious Conducted Emissions	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Power Spectral Density	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Spurious Radiated Emissions	FCC 15.209:2010	ANSI C63.10:2009	**Pass**
AC Powerline Conducted Emissions	FCC 15.207:2010	ANSI C63.10:2009	**Pass**
Burst Duration	FCC 15.247:2010	ANSI C63.10:2009	**Pass**

Modifications made to the product
See the Modifications section of this report

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).

Approved By:

Don Facteau, IS 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 Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP

Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)*

CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

NEMKO

Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Accreditations and Authorizations

Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).*

BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.

GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)*

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

Northwest EMC Locations

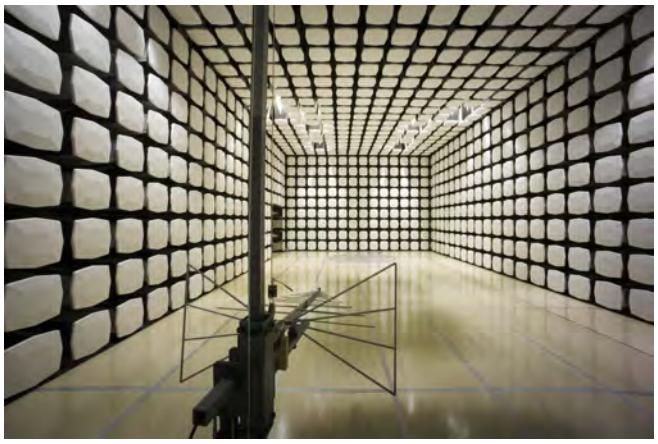
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

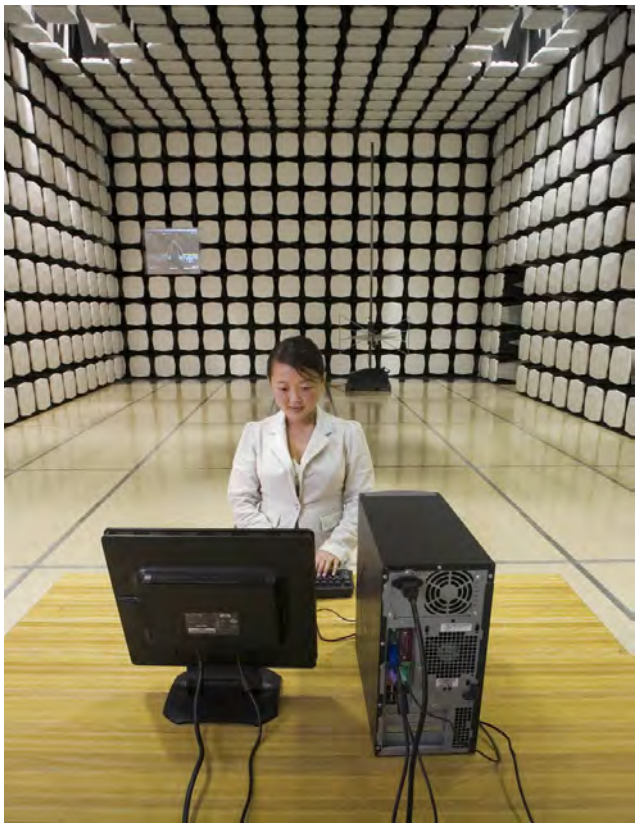
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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

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





Party Requesting the Test

Company Name:	Summit Semiconductor
Address:	22867 NW Bennett St, Suite 200
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Ken Boehlke
Model:	444-2196H (Silverton)
First Date of Test:	September 23, 2010
Last Date of Test:	October 1, 2010
Receipt Date of Samples:	September 23, 2010
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
Wireless Audio Slave Board - Radiated

Testing Objective:
These tests were selected to satisfy the EMC requirements requested by the client.

CONFIGURATION 1 FOCU0094

Software/Firmware Running during test	
Description	**Version**
Hood BIST13	13

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Audio Slave Board - Direct Connect	Summit Semiconductor	444-2196H (Silverton)	2E

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power / RS-232 Serial Interface	Summit Semiconductor	Hermiston	None
AC Adapter	PHIHONG	PSA21R-033	None

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 flex cable	No	0.3m	No	Wireless Audio Slave Board - Direct Connect	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	DC Power / RS-232 Serial Interface	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	DC Power / RS-232 Serial Interface
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 FOCU0094

Software/Firmware Running during test	
Description	**Version**
Hood BIST13	13

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Audio Slave Board - Radiated	Summit Semiconductor	444-2196H (Silverton)	2C

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power / RS-232 Serial Interface	Summit Semiconductor	Hermiston	none
DC Block	MCL	BLK-89	15542
DC Power Supply	Topward	6303D	743645

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote PC	IBM	Thnkpad A21m	IS108

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Multi-pin flex cable	No	0.3m	No	Wireless Audio Slave Board - Direct Connect	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	DC Power / RS-232 Serial Interface	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	DC Power / RS-232 Serial Interface
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 3 FOCU0094

Software/Firmware Running during test	
Description	**Version**
Hood BIST13	13

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Wireless Audio Slave Board - Radiated	Summit Semiconductor	444-2196H (Silverton)	2E

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power / RS-232 Serial Interface	Summit Semiconductor	Hermiston	none

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 flex cable	No	0.3m	No	Wireless Audio Slave Board - Direct Connect	DC Power / RS-232 Serial Interface
AC Power	No	1.8m	No	AC Mains	DC Power Supply
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	9/23/2010	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.
2	9/23/2010	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.
3	9/23/2010	Output Power – Channel 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	9/23/2010	Burst Duration	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	9/23/2010	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	9/23/2010	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	9/27/2010	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.
8	10/1/2010	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.

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	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/6/2010	13
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 occupied bandwidth 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 the spectrum analyzer. The EUT was transmitting at its only available data rate of 6Mbps with OFDM type modulation.

NORTHWEST EMC

OCCUPIED BANDWIDTH

XMit 2010.07.29

EUT:	Silverton			**Work Order:**	FOCU0094
Serial Number:	2E			**Date:**	09/23/10
Customer:	Summit Semiconductor			**Temperature:**	22°C
Attendees:	Ponnappa Pasura			**Humidity:**	45%
Project:	None			**Barometric Pres.:**	30.10 in
Tested by:	Rod Peloquin	**Power:**	3.3 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.0 dB loss added for adapter cable and DC block. Transmitting with duty cycle noted elsewhere in report.

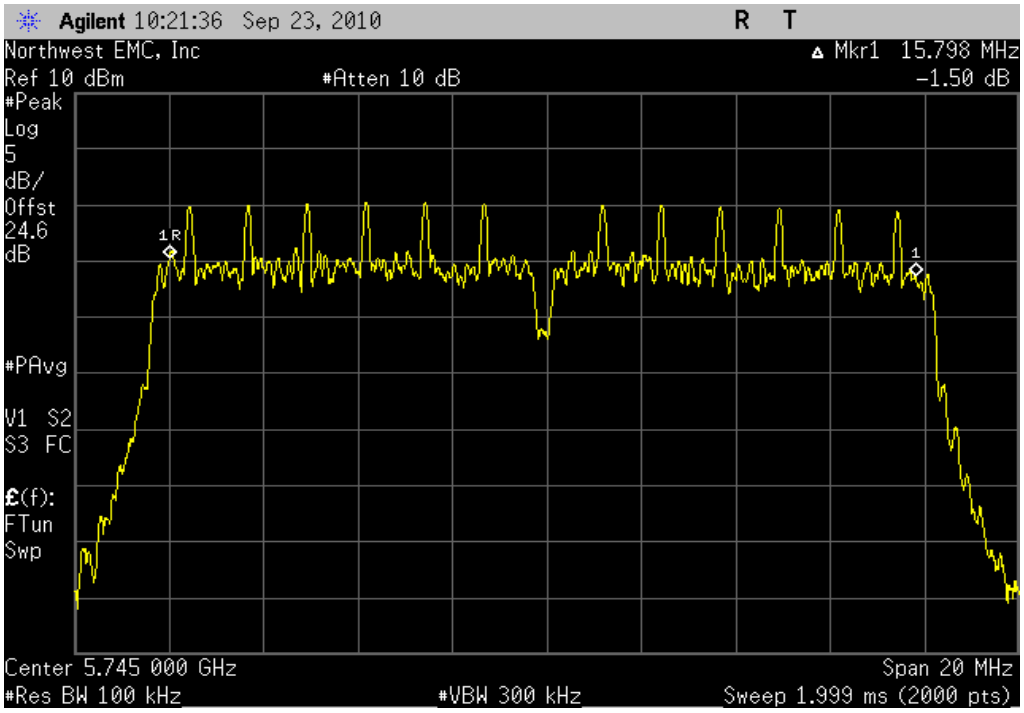
DEVIATIONS FROM TEST STANDARD

None

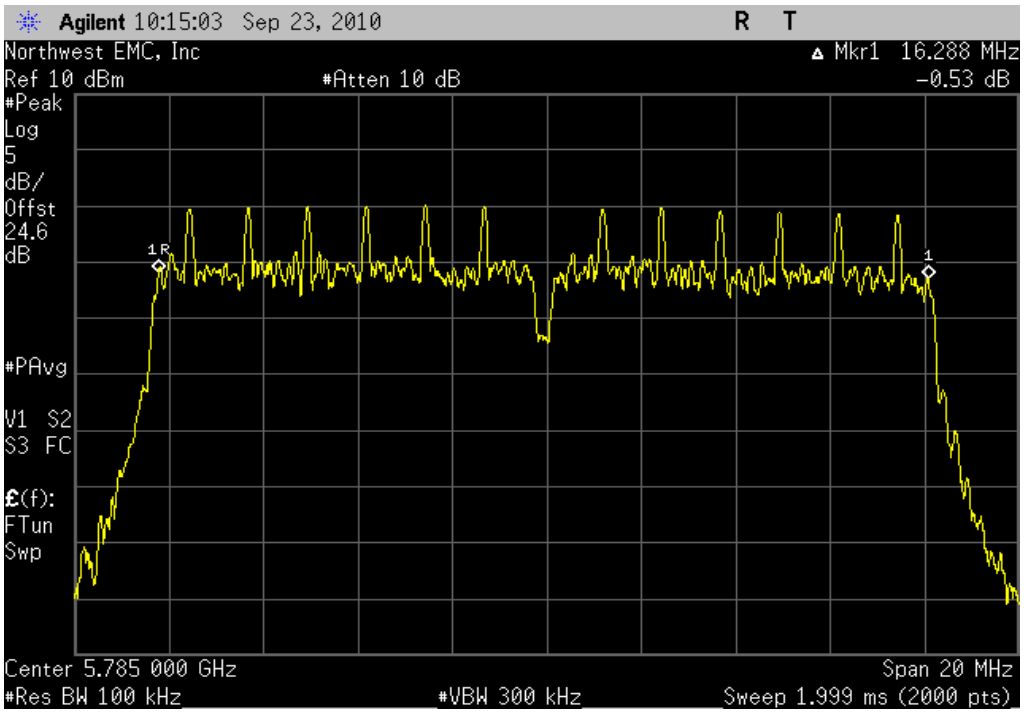
Configuration #	2	Signature

	Value	Limit	Results
6 Mbps			
Low Channel 149, 5745 MHz	15.798 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	16.288 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	16.298 MHz	> 500 kHz	Pass

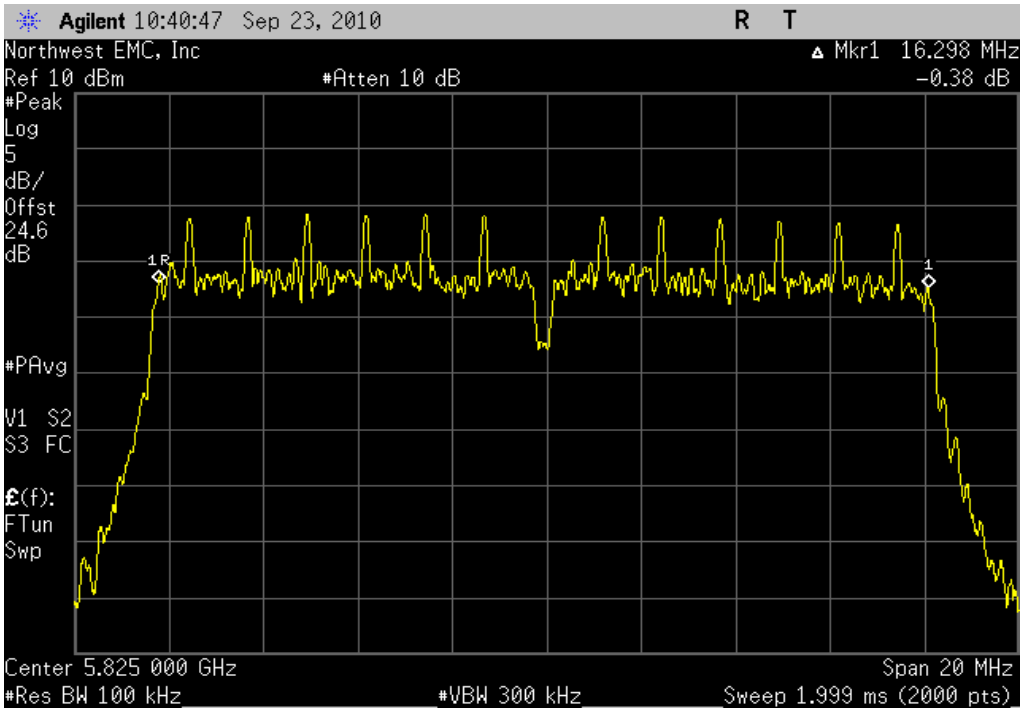
6 Mbps, Low Channel 149, 5745 MHz					
Result:	Pass	**Value:**	15.798 MHz	**Limit:**	> 500 kHz



6 Mbps, Mid Channel 157, 5785 MHz					
Result:	Pass	**Value:**	16.288 MHz	**Limit:**	> 500 kHz



6 Mbps, High Channel 165, 5825 MHz					
Result:	Pass	**Value:**	16.298 MHz	**Limit:**	> 500 kHz



OUTPUT POWER - CHANNEL 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	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/6/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

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 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. The amplitude accuracy of the spectrum analyzer was further enhanced by calibrating the setup using the power meter and synthesized signal generator.

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

Method #3 found in ANSI C63.10 section 6.10.2.2 was used because the analyzer sweep time was greater than T for the operating mode which has the shortest transmission pulse duration and the Emission Bandwidth was greater than the largest RBW on the analyzer.

RF gating was used on the analyzer to ensure the measurement sweep was during the highest power of the transmitter pulse duration

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- The RBW = 1 MHz, VBW = 3 MHz
- Sample detector mode because the bin width (span / number of spectral points) < 0.5 RBW.
- Power was integrated across “B”, by using the channel power function of the analyzer.

NORTHWEST EMC

OUTPUT POWER - CHANNEL POWER

XMit 2010.07.29

EUT:	Silverton			**Work Order:**	FOCU0094
Serial Number:	2E			**Date:**	09/23/10
Customer:	Summit Semiconductor			**Temperature:**	22°C
Attendees:	Ponnappa Pasura			**Humidity:**	45%
Project:	None			**Barometric Pres.:**	30.10 in
Tested by:	Rod Peloquin	**Power:**	3.3 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.06 dB loss added for adapter cable and DC block. Transmitting with duty cycle noted elsewhere in report.

DEVIATIONS FROM TEST STANDARD

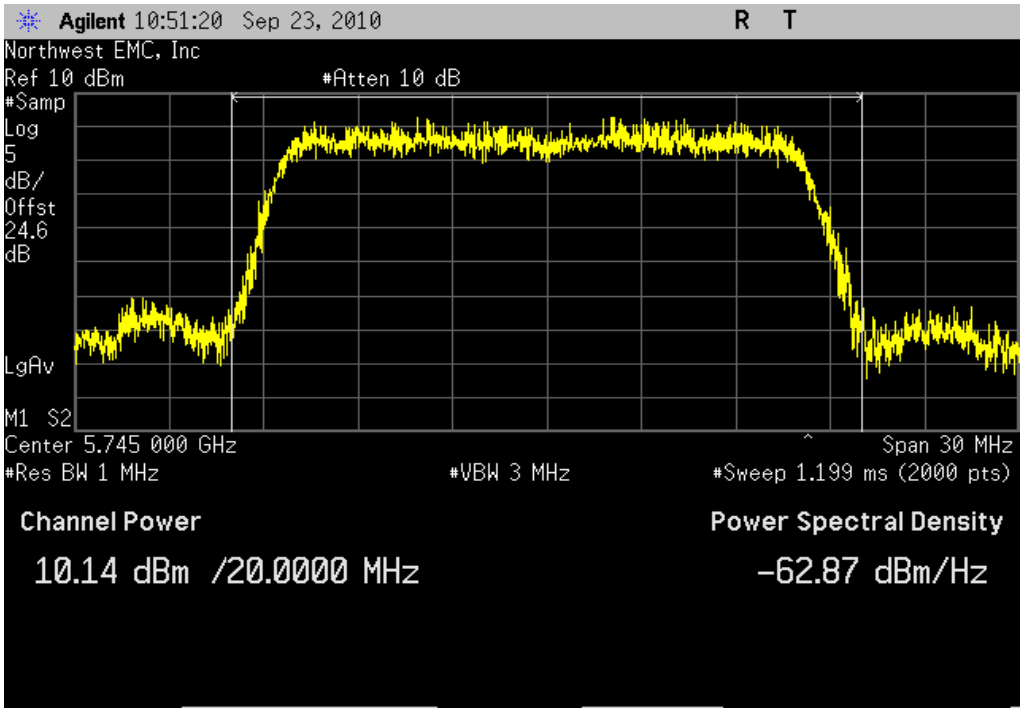
None

Configuration #	2	Signature

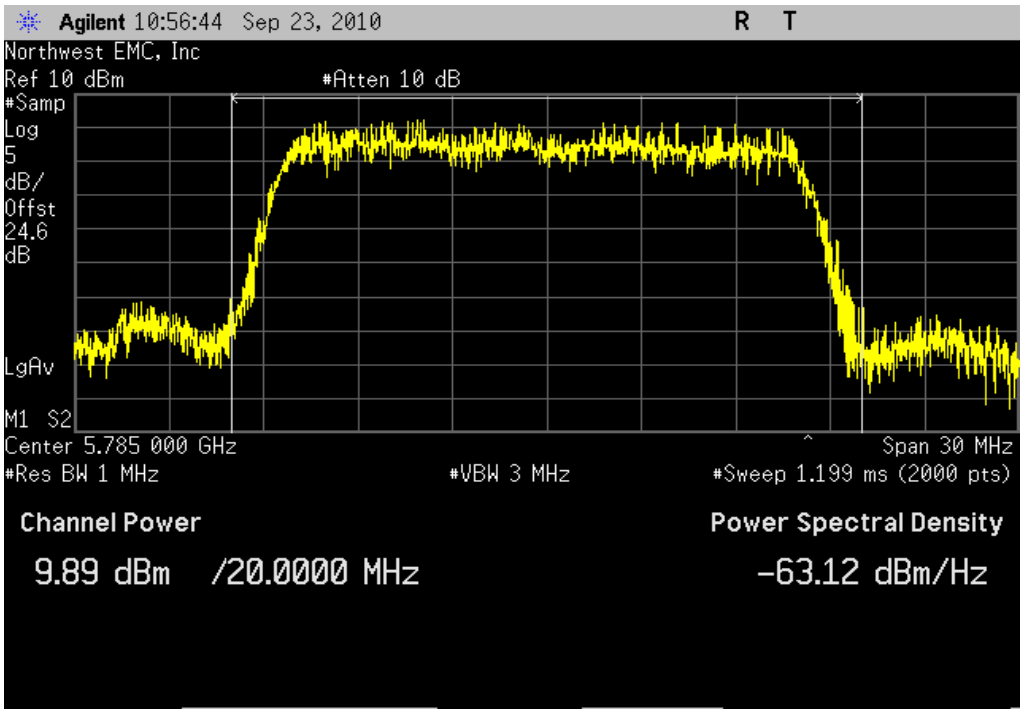
	Value	Limit	Results
6 Mbps			
Low Channel 149, 5745 MHz	10.1 dBm	30 dBm	Pass
Mid Channel 157, 5785 MHz	9.9 dBm	30 dBm	Pass
High Channel 165, 5825 MHz	9.5 dBm	30 dBm	Pass

OUTPUT POWER - CHANNEL POWER

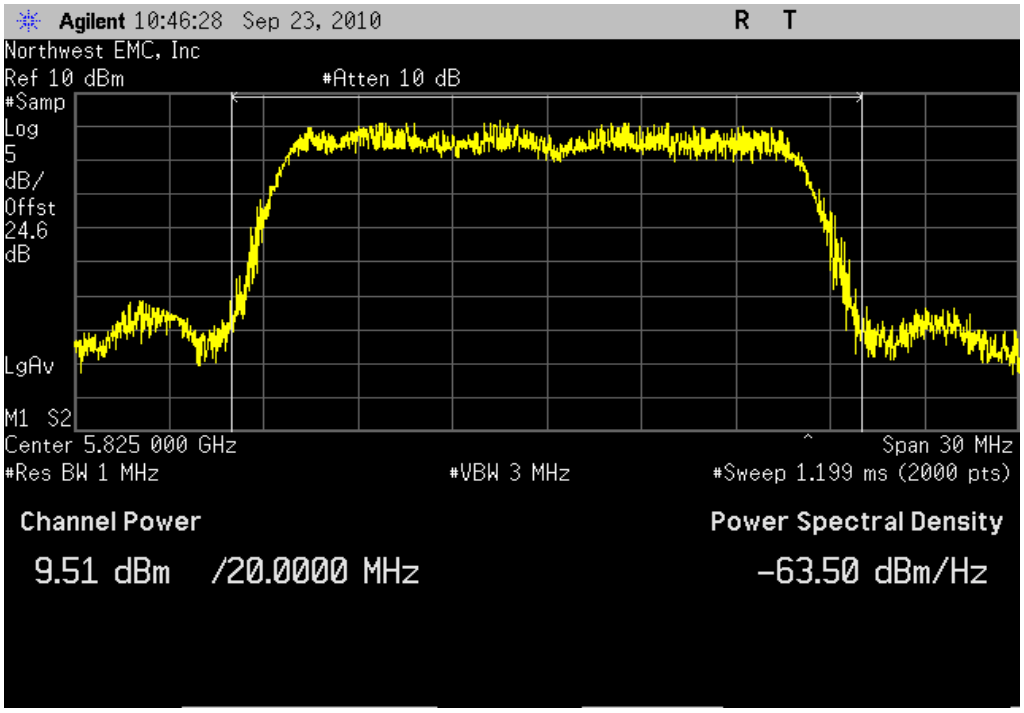
6 Mbps, Low Channel 149, 5745 MHz					
Result:	Pass	**Value:**	10.1 dBm	**Limit:**	30 dBm



6 Mbps, Mid Channel 157, 5785 MHz					
Result:	Pass	**Value:**	9.9 dBm	**Limit:**	30 dBm



6 Mbps, High Channel 165, 5825 MHz					
Result:	Pass	**Value:**	9.5 dBm	**Limit:**	30 dBm



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	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/6/2010	13
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 only available data rate.

The spectrum was scanned across each band edge from at least 40 MHz below the band edge to 40 MHz above the band edge.

NORTHWEST EMC

BAND EDGE COMPLIANCE

XMit 2010.07.29

EUT:	Silverton			Work Order:	FOCU0094
Serial Number:	2E			Date:	09/23/10
Customer:	Summit Semiconductor			Temperature:	22°C
Attendees:	Ponnappa Pasura			Humidity:	45%
Project:	None			Barometric Pres.:	30.10 in
Tested by:	Rod Peloquin	Power:	3.3 VDC	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.06 dB loss added for adapter cable and DC block. Transmitting with duty cycle noted elsewhere in report.

DEVIATIONS FROM TEST STANDARD

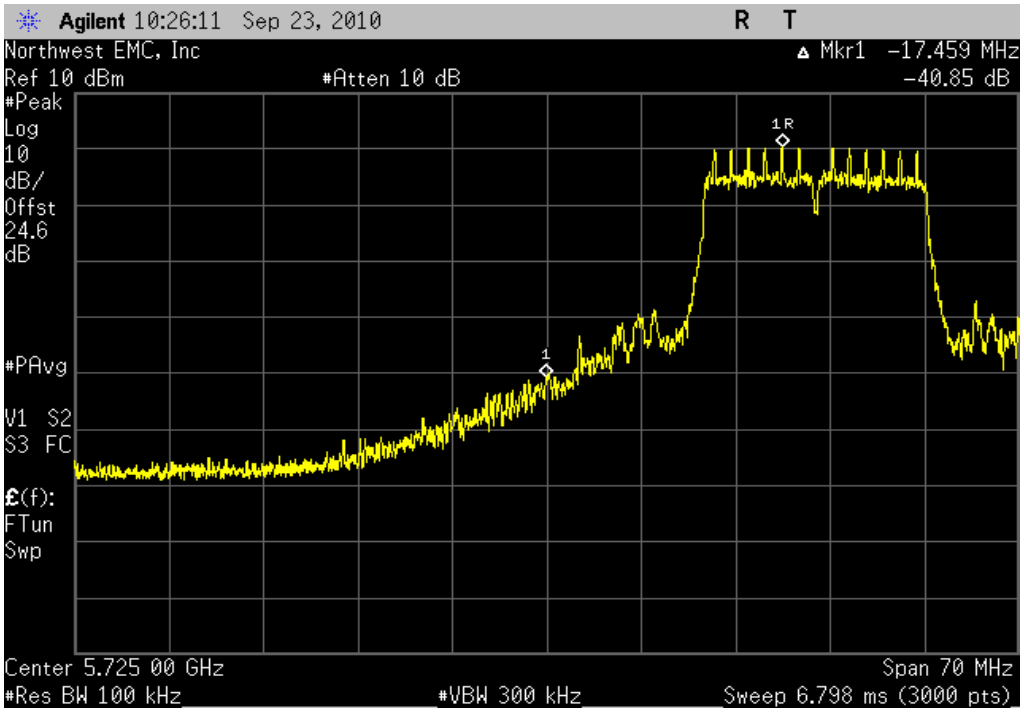
None

Configuration #	2	Signature

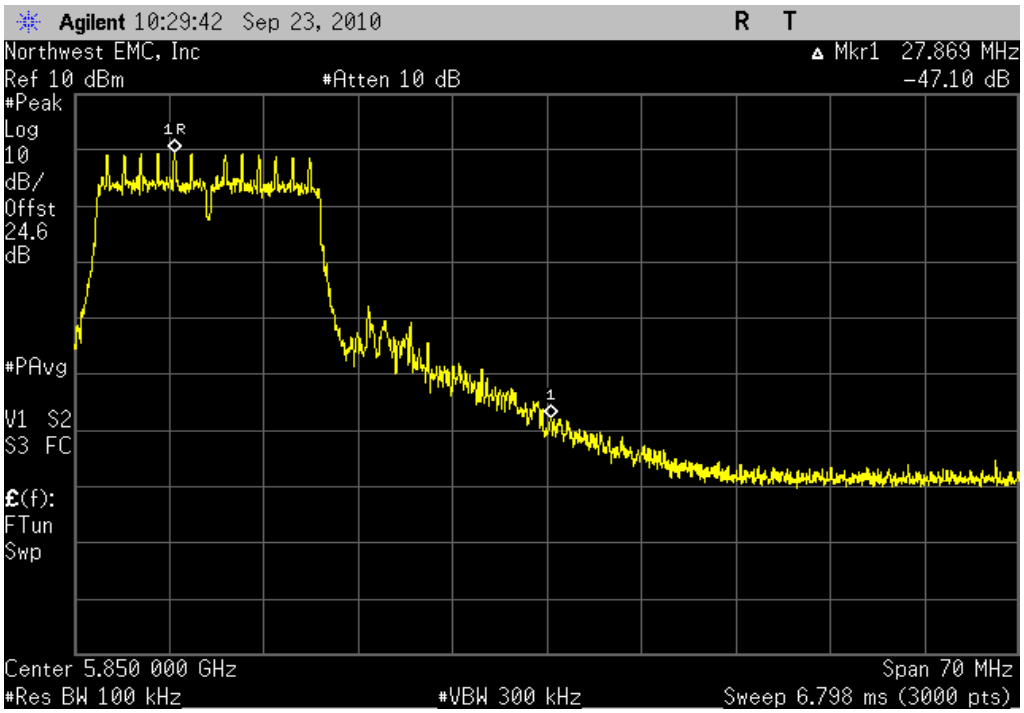
	Value	Limit	Results
6 Mbps			
Low Channel 149, 5745 MHz	-40.9 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	-47.1 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

6 Mbps, Low Channel 149, 5745 MHz					
Result:	Pass	**Value:**	-40.9 dBc	**Limit:**	≤ -20 dBc



6 Mbps, High Channel 165, 5825 MHz					
Result:	Pass	**Value:**	-47.1 dBc	**Limit:**	≤ -20 dBc



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	E4446A	AAQ	1/6/2010	12
40GHz DC Block	Miteq	DCB4000	AMD	8/5/2010	13
Attenuator	Weinschel Corp.	54A-20	RBL	10/9/2009	13
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 only available data rate of 6Mbps using OFDM type modulation. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

NORTHWEST

EMC

SPURIOUS CONDUCTED EMISSIONS

XMit 2010.07.29

EUT:	Silverton			**Work Order:**	FOCU0094
Serial Number:	2E			**Date:**	09/23/10
Customer:	Summit Semiconductor			**Temperature:**	22°C
Attendees:	None			**Humidity:**	45%
Project:	None			**Barometric Pres.:**	30.10 in
Tested by:	Rod Peloquin	**Power:**	3.3 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.06 dB loss added for adapter cable and DC block. Transmitting with duty cycle noted elsewhere in report.

DEVIATIONS FROM TEST STANDARD

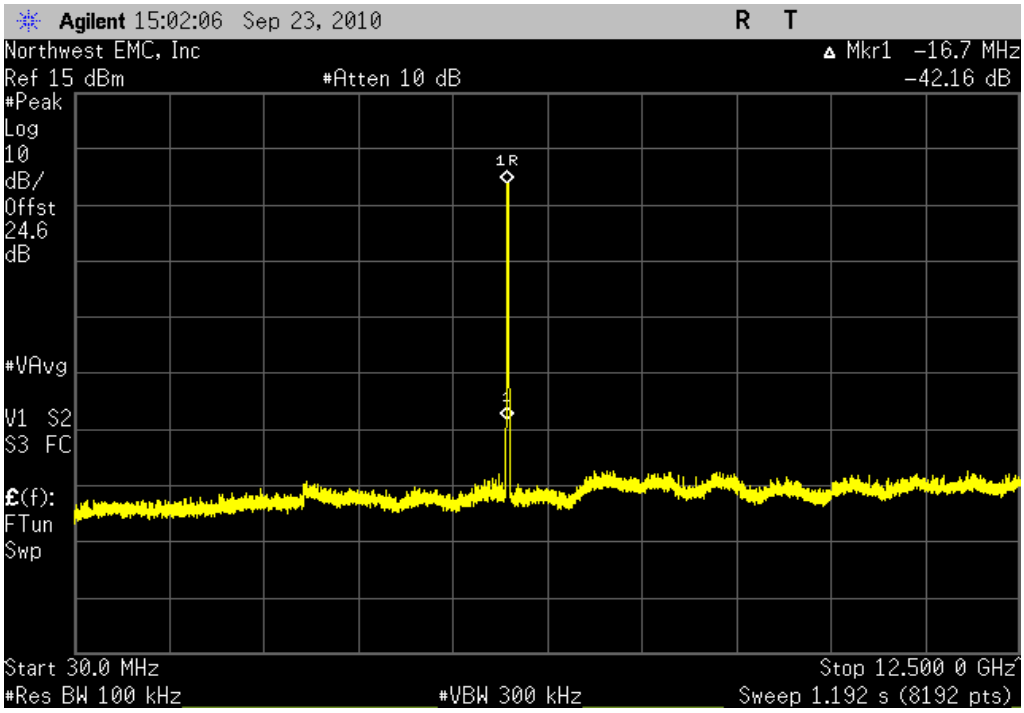
None

Configuration #	2	Signature

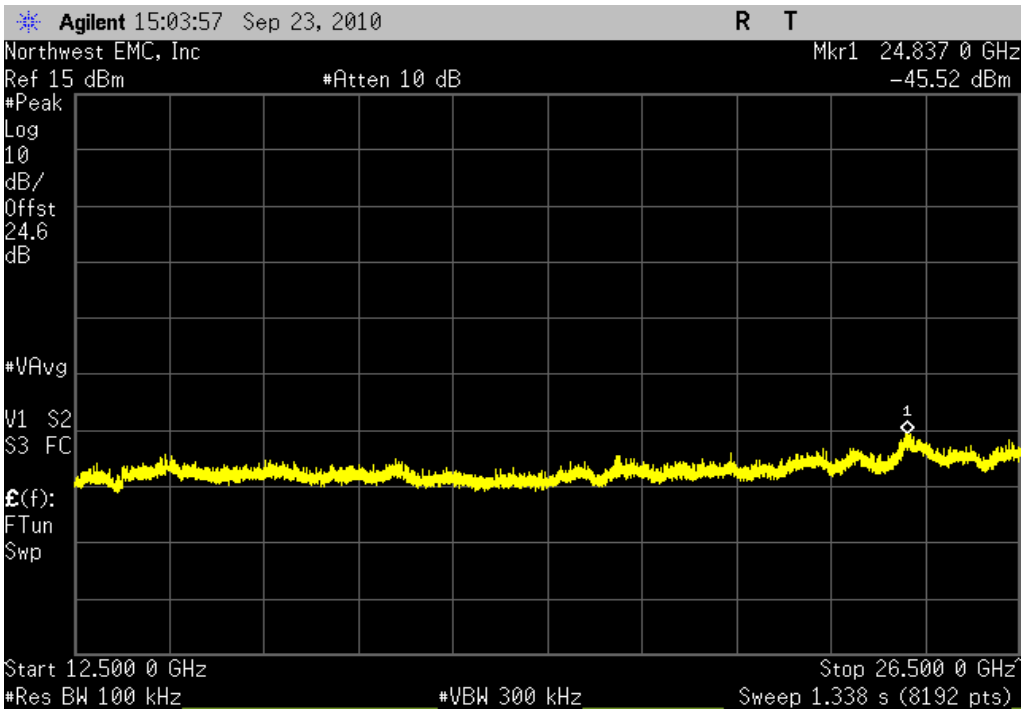
		Value	Limit	Results
6 Mbps				
	Low Channel 149, 5745 MHz			
	30 MHz - 12.5 GHz	-42.2 dBc	≤ -20 dBc	Pass
	12.5 GHz - 26.5 GHz	-44.4 dBc	≤ -20 dBc	Pass
	26.5 GHz - 31 GHz	-45.1 dBc	≤ -20 dBc	Pass
	31 GHz - 40 GHz	-32.0 dBc	≤ -20 dBc	Pass
	Mid Channel 157, 5785 MHz			
	30 MHz - 12.5 GHz	-50.4 dBc	≤ -20 dBc	Pass
	12.5 GHz - 26.5 GHz	-44.6 dBc	≤ -20 dBc	Pass
	26.5 GHz - 31 GHz	-45.2 dBc	≤ -20 dBc	Pass
	31 GHz - 40 GHz	-31.8 dBc	≤ -20 dBc	Pass
	High Channel 165, 5825 MHz			
	30 MHz - 12.5 GHz	-46.9 dBc	≤ -20 dBc	Pass
	12.5 GHz - 26.5 GHz	-44.0 dBc	≤ -20 dBc	Pass
	26.5 GHz - 31 GHz	-44.9 dBc	≤ -20 dBc	Pass
	31 GHz - 40 GHz	-30.9 dBc	≤ -20 dBc	Pass

SPURIOUS CONDUCTED EMISSIONS

6 Mbps, Low Channel 149, 5745 MHz, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	-42.2 dBc	**Limit:**	≤ -20 dBc

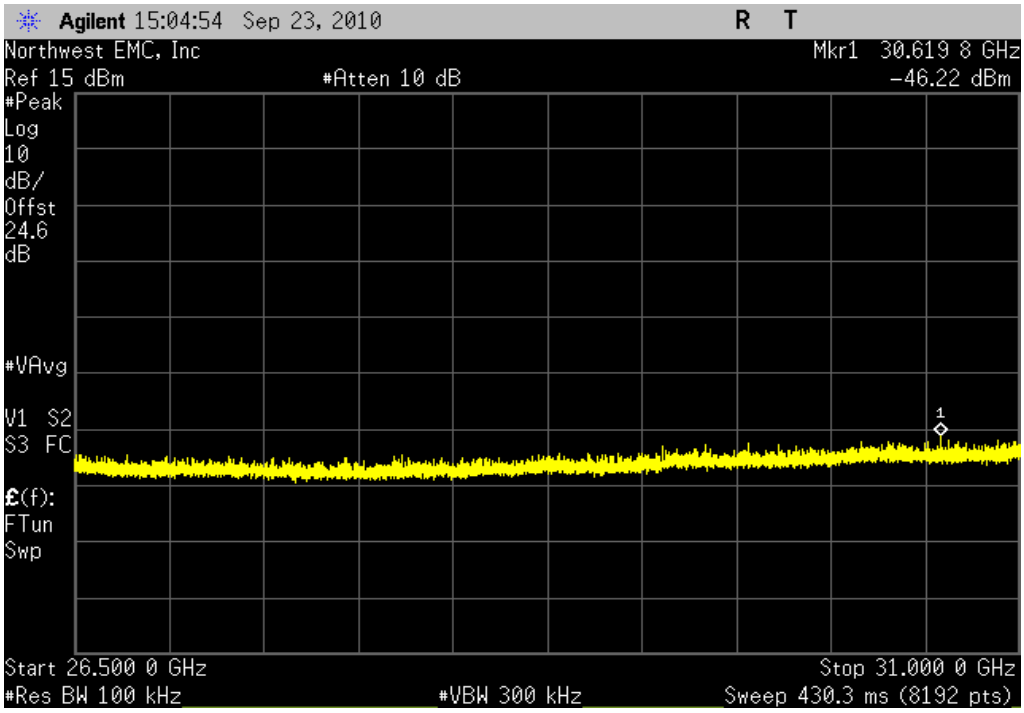


6 Mbps, Low Channel 149, 5745 MHz, 12.5 GHz - 26.5 GHz					
Result:	Pass	**Value:**	-44.4 dBc	**Limit:**	≤ -20 dBc

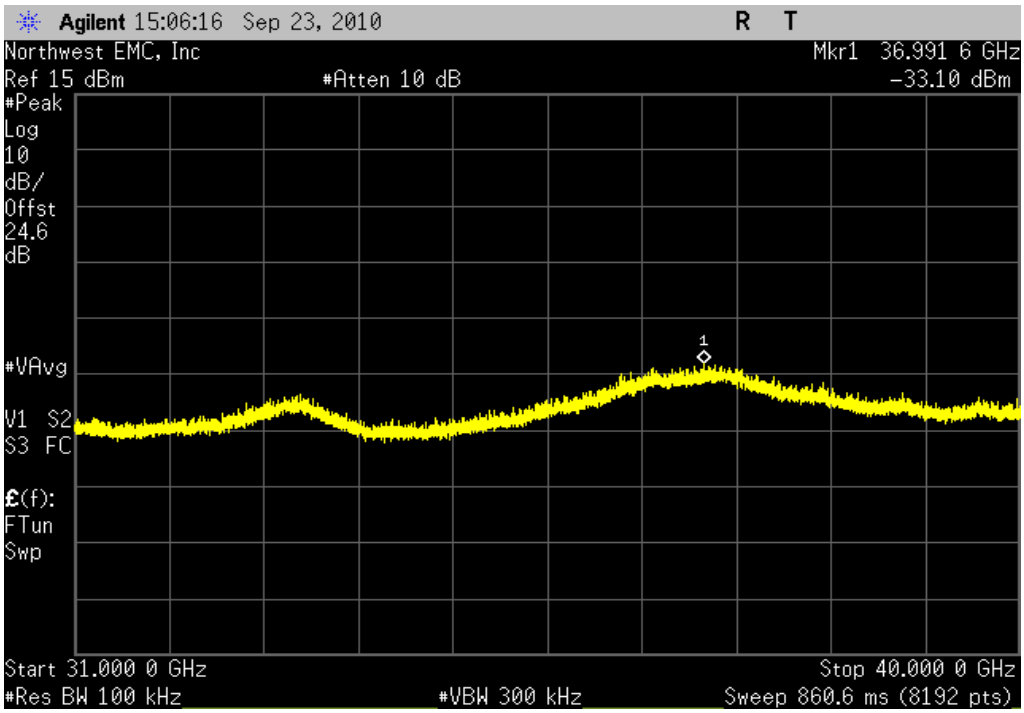


SPURIOUS CONDUCTED EMISSIONS

6 Mbps, Low Channel 149, 5745 MHz, 26.5 GHz - 31 GHz					
Result:	Pass	**Value:**	-45.1 dBc	**Limit:**	≤ -20 dBc

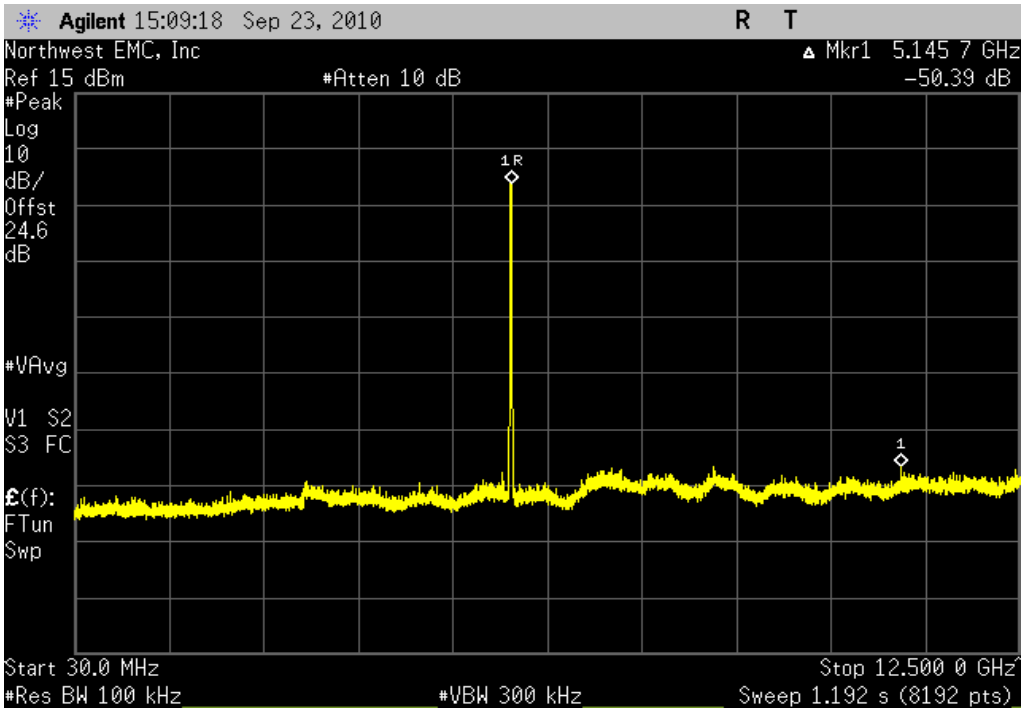


6 Mbps, Low Channel 149, 5745 MHz, 31 GHz - 40 GHz					
Result:	Pass	**Value:**	-32.0 dBc	**Limit:**	≤ -20 dBc

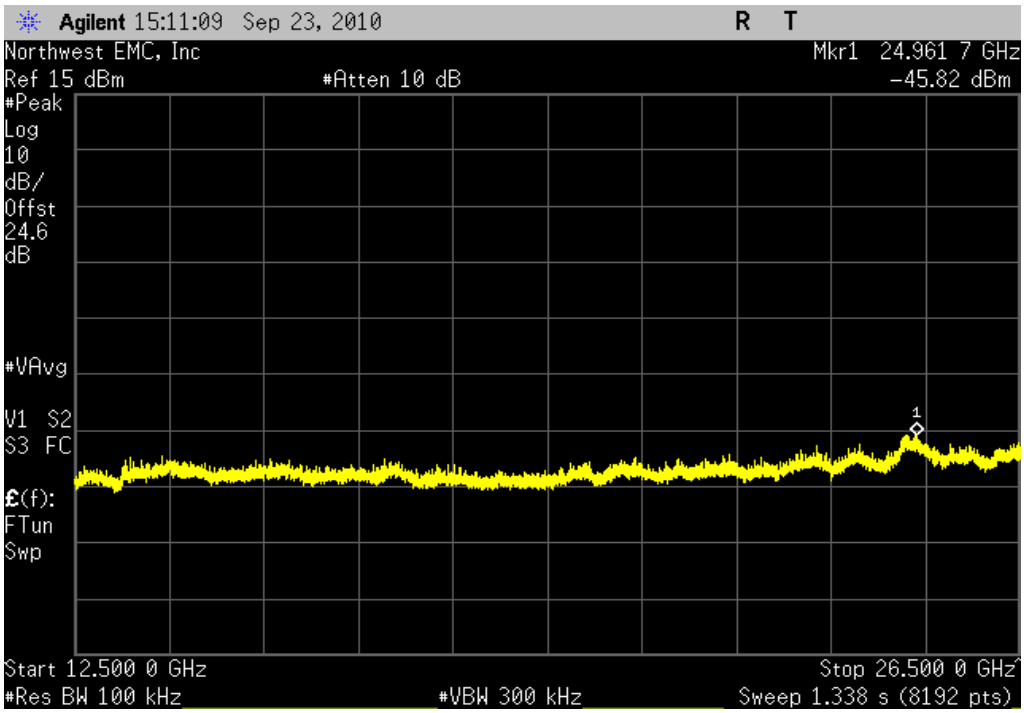


SPURIOUS CONDUCTED EMISSIONS

6 Mbps, Mid Channel 157, 5785 MHz, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	-50.4 dBc	**Limit:**	≤ -20 dBc

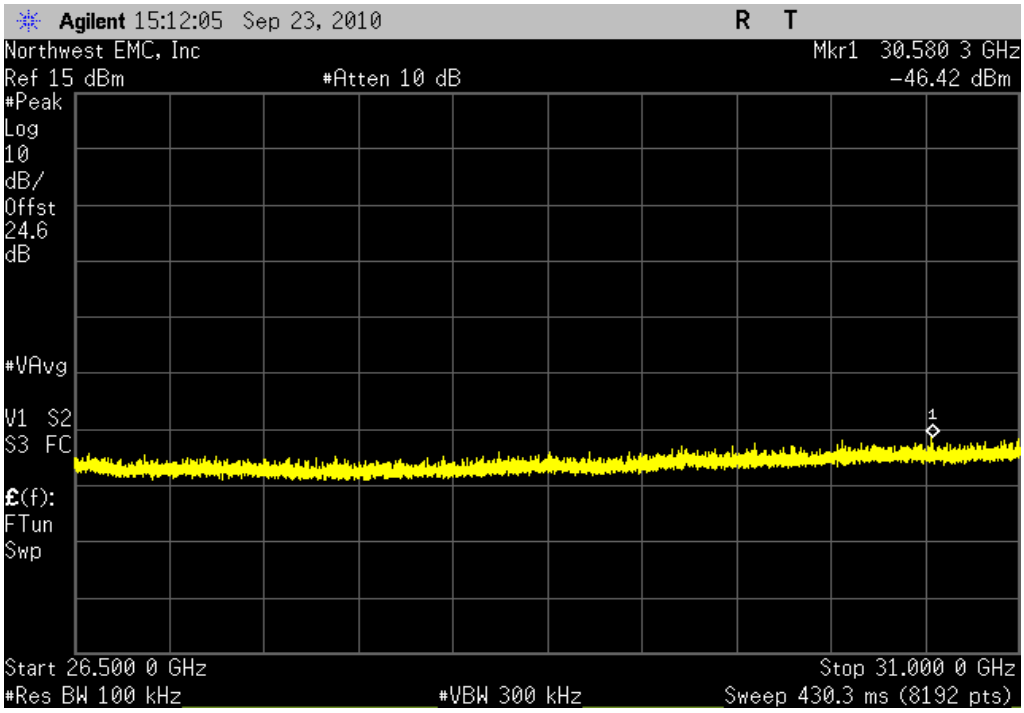


6 Mbps, Mid Channel 157, 5785 MHz, 12.5 GHz - 26.5 GHz					
Result:	Pass	**Value:**	-44.6 dBc	**Limit:**	≤ -20 dBc

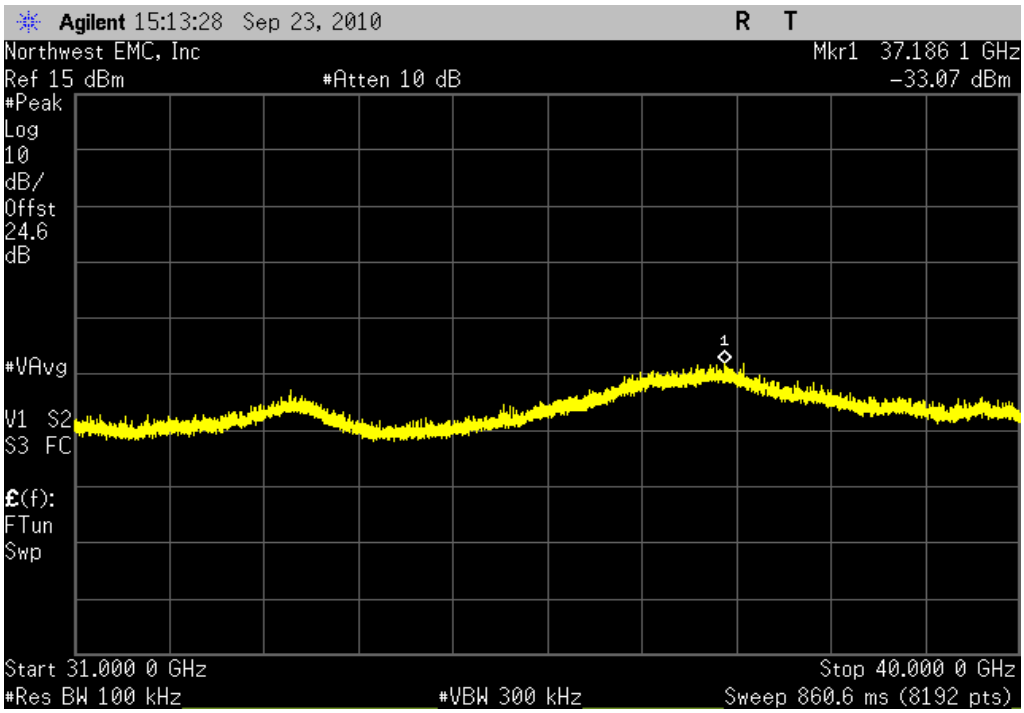


SPURIOUS CONDUCTED EMISSIONS

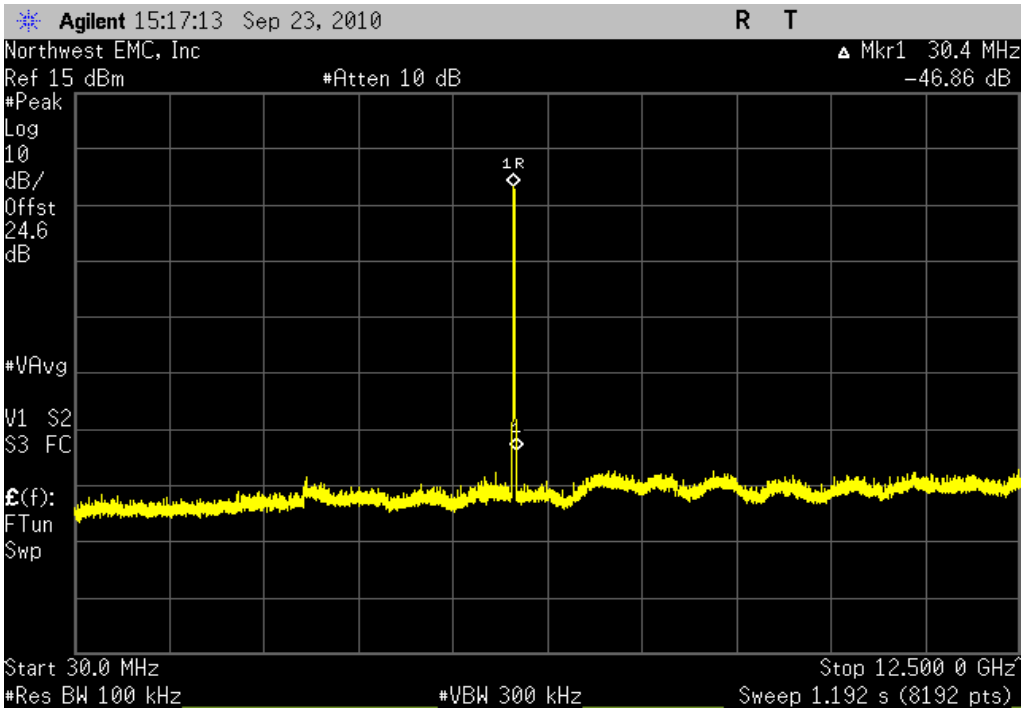
6 Mbps, Mid Channel 157, 5785 MHz, 26.5 GHz - 31 GHz					
Result:	Pass	**Value:**	-45.2 dBc	**Limit:**	≤ -20 dBc



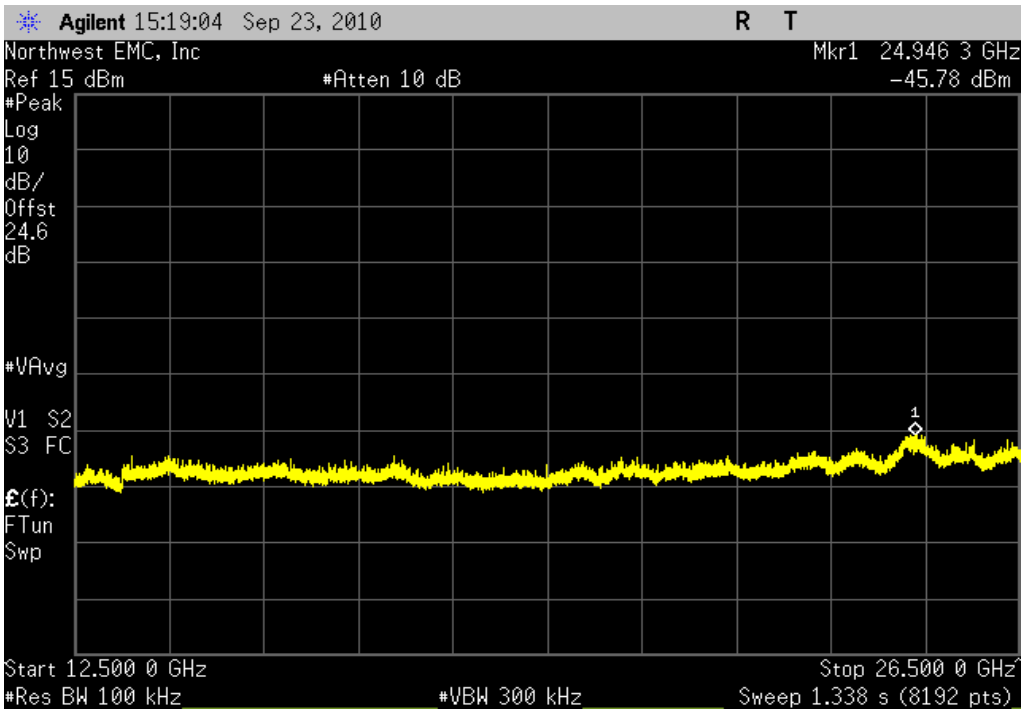
6 Mbps, Mid Channel 157, 5785 MHz, 31 GHz - 40 GHz					
Result:	Pass	**Value:**	-31.8 dBc	**Limit:**	≤ -20 dBc



6 Mbps, High Channel 165, 5825 MHz, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	-46.9 dBc	**Limit:**	≤ -20 dBc

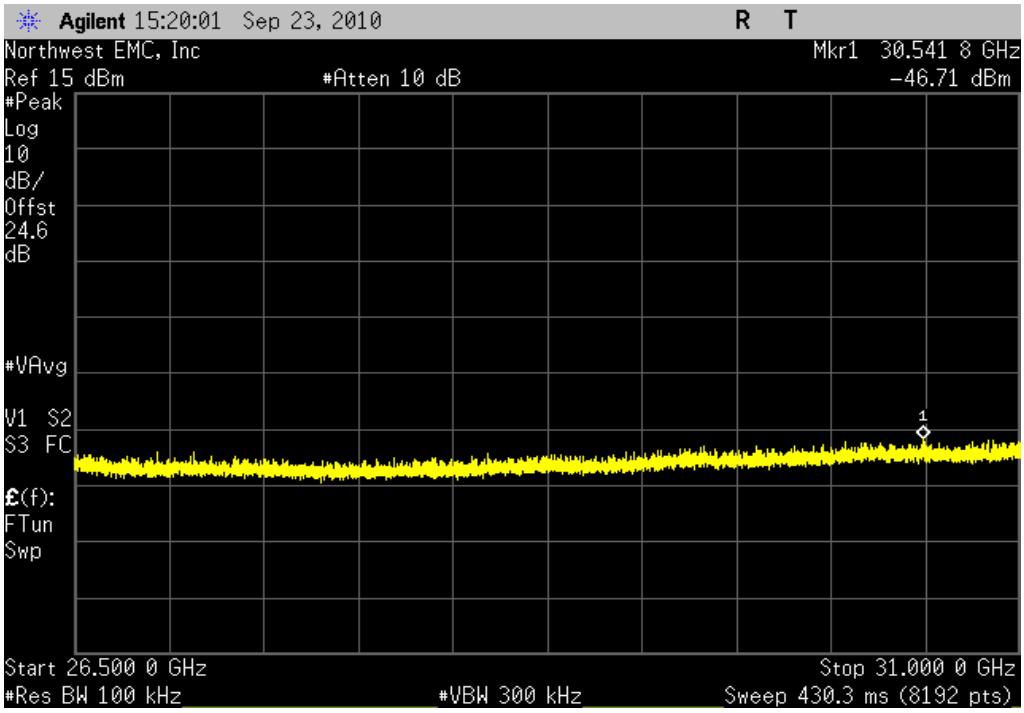


6 Mbps, High Channel 165, 5825 MHz, 12.5 GHz - 26.5 GHz					
Result:	Pass	**Value:**	-44.0 dBc	**Limit:**	≤ -20 dBc

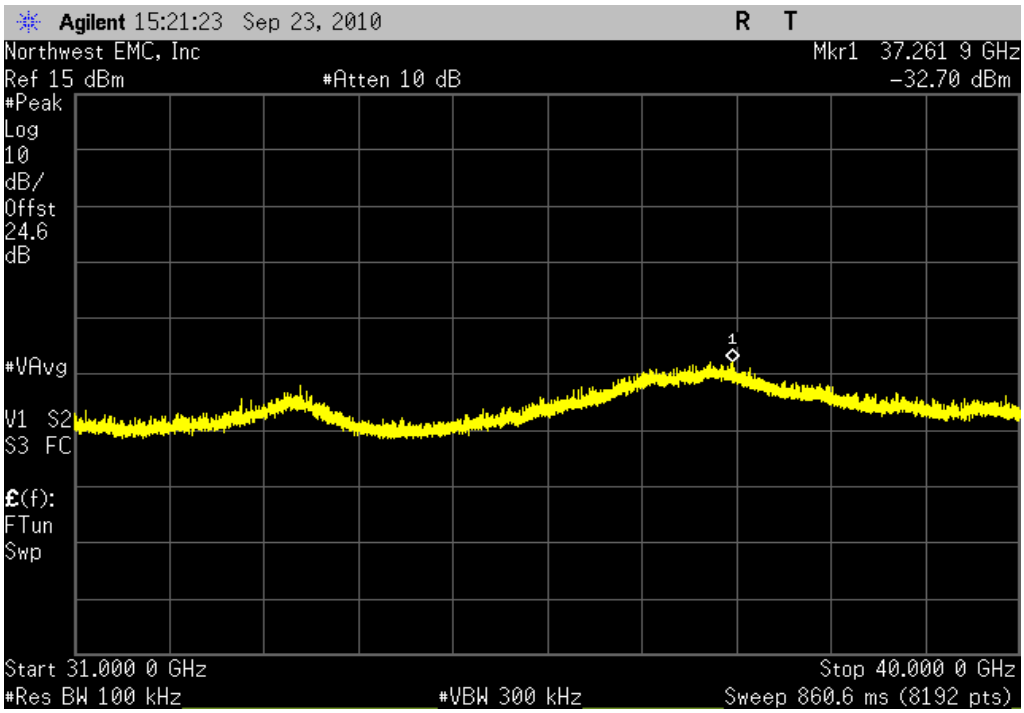


SPURIOUS CONDUCTED EMISSIONS

6 Mbps, High Channel 165, 5825 MHz, 26.5 GHz - 31 GHz					
Result:	Pass	**Value:**	-44.9 dBc	**Limit:**	≤ -20 dBc



6 Mbps, High Channel 165, 5825 MHz, 31 GHz - 40 GHz					
Result:	Pass	**Value:**	-30.9 dBc	**Limit:**	≤ -20 dBc



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	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/6/2010	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

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 power spectral density measurements were measured with the EUT set to low, mid, 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 its only available data rate using OFDM type of modulation. While the average output power was measured as defined in section ANSI C63.10:2009, Section 6.11.2.3 was followed.

The spectrum analyzer was set as follows:

The emission peak was located and zoomed in on within the passband.

a) RBW = 3 kHz

b) VBW = 10 kHz

c) Span = 300 kHz

d) Sweep time = 100s

e) Trace set to MAX

f) The 1 hz Marker Noise function on the analyzer was used. The data was corrected to 3 kHz by adding 34.8 dB to the reading.

NORTHWEST EMC

POWER SPECTRAL DENSITY

XMit 2010.07.29

EUT:	Silverton			Work Order:	FOCU0094
Serial Number:	2E			Date:	09/23/10
Customer:	Summit Semiconductor			Temperature:	22°C
Attendees:	None			Humidity:	45%
Project:	None			Barometric Pres.:	30.10 in
Tested by:	Rod Peloquin	Power:	3.3 VDC	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.06 dB loss added for adapter cable and DC block. Transmitting with duty cycle noted elsewhere in report.

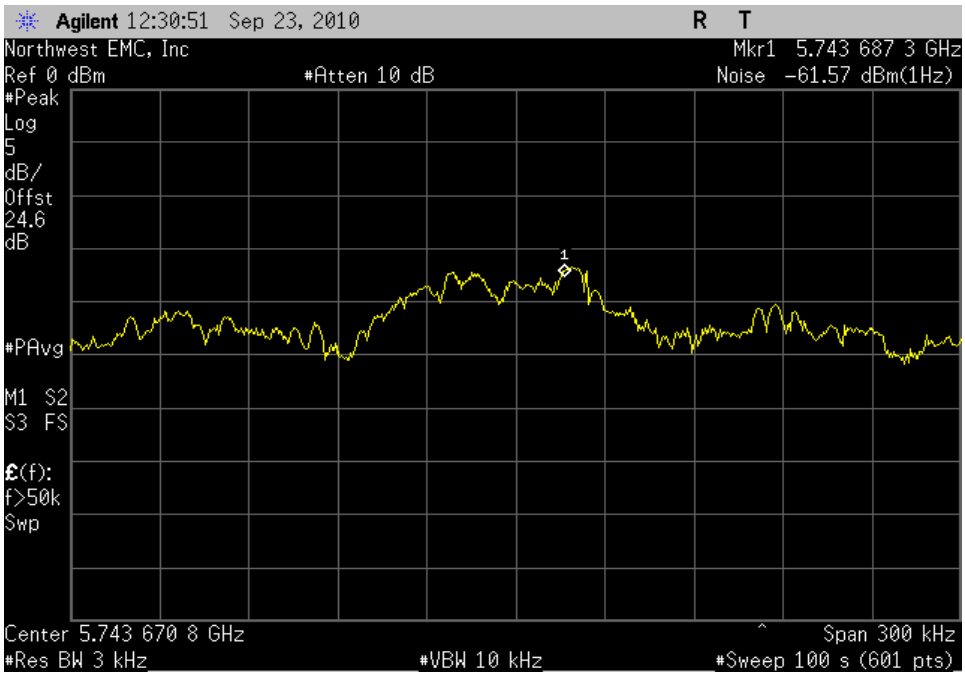
DEVIATIONS FROM TEST STANDARD

None

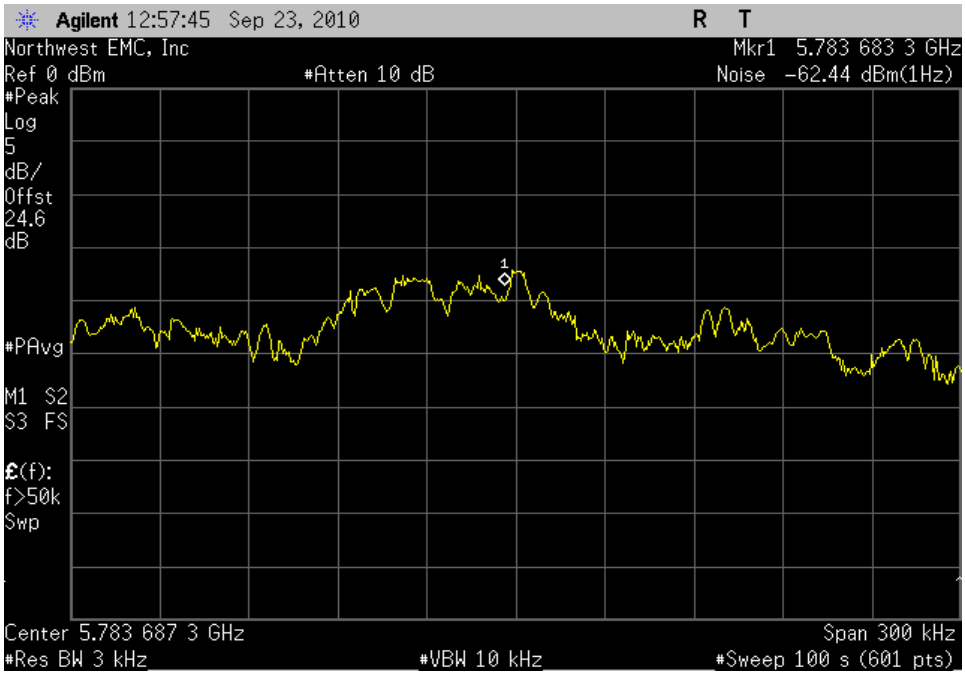
Configuration #	2	Signature

	Value	Limit	Results
6 Mbps			
Low Channel 149, 5745 MHz	-26.8 dBm / 3 kHz	8 dBm / 3 kHz	Pass
Mid Channel 157, 5785 MHz	-27.6 dBm / 3 kHz	8 dBm / 3 kHz	Pass
High Channel 165, 5825 MHz	-28.3 dBm / 3 kHz	8 dBm / 3 kHz	Pass

6 Mbps, Low Channel 149, 5745 MHz					
Result:	Pass	**Value:**	-26.8 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

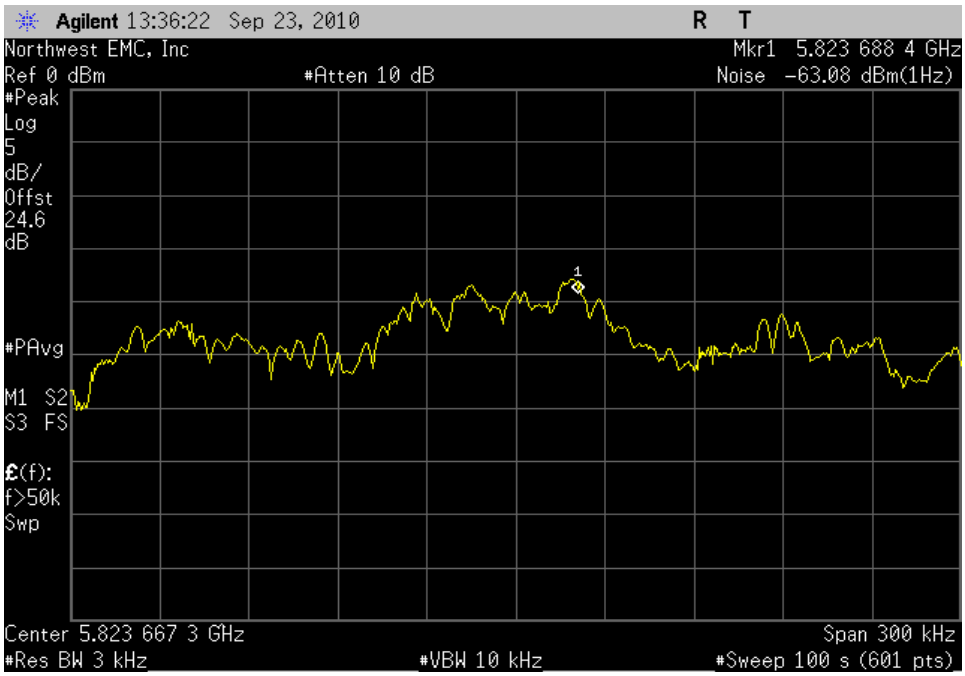


6 Mbps, Mid Channel 157, 5785 MHz					
Result:	Pass	**Value:**	-27.6 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz



POWER SPECTRAL DENSITY

6 Mbps, High Channel 165, 5825 MHz					
Result:	Pass	**Value:**	-28.3 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz



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.

MODES OF OPERATION

Continuous Transmitting, 6 Mbps

CHANNELS TESTED

Channel 149 (5745 MHz)
Channel 157 (5785 MHz)
Channel 165 (5825 MHz)

POWER SETTINGS INVESTIGATED

3.3 VDC

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz

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	1/6/2010	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Antenna, Horn	EMCO	3115	AHE	10/22/2009	24
Pre-Amplifier	Miteq	AM-1616-1000	AOL	7/9/2010	13
Antenna, Biconilog	EMCO	3141	AXE	1/14/2010	13
EV01 Cables	N/A	Bilog Cables	EVA	7/9/2010	13
High Pass Filter	Micro-Tronics	HPM50112	HGA	10/1/2009	13
5.725-5.875 Notch Filter	Micro-Tronics	BRC50705	HGJ	8/6/2010	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	7/9/2010	13
Antenna, Horn	EMCO	3115	AHC	7/8/2010	24
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	7/9/2010	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	8/25/2010	13
Antenna, Horn	ETS	3160-07	AHU	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	8/25/2010	13
Antenna, Horn	ETS	3160-08	AHV	NCR	0
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	8/25/2010	13
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/15/2010	13
Antenna, Horn	ETS	3160-10	AIC	NCR	0
Cable	ESM Cable Corp.	KMKM-72	EVY	9/15/2010	13
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/22/2010	13
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0
OC Cable	ESM Cable Corp.	KMKM-72	OCV	11/3/2009	13

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. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is 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.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

EUT:	Silverton	Work Order:	FOCU0094
Serial Number:	2C	Date:	09/27/10
Customer:	Summit Semiconductor	Temperature:	22.7 °C
Attendees:	None	Humidity:	46%
Project:	None	Barometric Pres.:	1016.6 mb
Tested by:	Rod Peloquin	Power: 3.3 VDC	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

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

COMMENTS

36 inch I/O cable

EUT OPERATING MODES

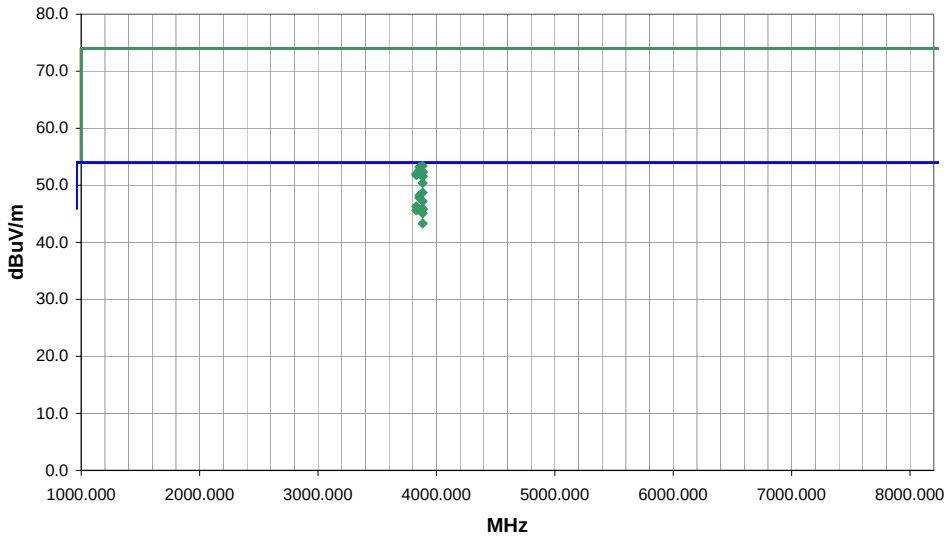
Continuous Transmitting, 6 Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	6
Configuration #	1
Results	Pass

Signature



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
3883.346	40.1	8.6	313.0	1.0	3.0	0.0	H-Horn	AV	0.0	48.7	54.0	-5.3	Channel 165, EUT horizontal
3856.676	39.8	8.4	313.0	1.0	3.0	0.0	H-Horn	AV	0.0	48.2	54.0	-5.8	Channel 157, EUT horizontal
3856.687	39.4	8.4	110.0	1.3	3.0	0.0	V-Horn	AV	0.0	47.8	54.0	-6.2	Channel 157, EUT SN down
3883.330	38.6	8.6	81.0	1.3	3.0	0.0	V-Horn	AV	0.0	47.2	54.0	-6.8	Channel 165, EUT SN down
3830.010	37.9	8.4	307.0	1.2	3.0	0.0	H-Horn	AV	0.0	46.3	54.0	-7.7	Channel 149, EUT horizontal
3883.330	37.3	8.6	18.0	1.1	3.0	0.0	V-Horn	AV	0.0	45.9	54.0	-8.1	Channel 165, EUT SN on side
3883.349	37.2	8.6	66.0	1.0	3.0	0.0	H-Horn	AV	0.0	45.8	54.0	-8.2	Channel 165, EUT SN down
3830.001	37.2	8.4	107.0	1.5	3.0	0.0	V-Horn	AV	0.0	45.6	54.0	-8.4	Channel 149, EUT SN down
3883.342	36.5	8.6	175.0	1.0	3.0	0.0	H-Horn	AV	0.0	45.1	54.0	-8.9	Channel 165, EUT SN on side
3883.320	34.7	8.6	268.0	1.9	3.0	0.0	V-Horn	AV	0.0	43.3	54.0	-10.7	Channel 165, EUT horizontal
3883.256	44.8	8.6	313.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.4	74.0	-20.6	Channel 165, EUT horizontal
3856.576	44.8	8.4	313.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.2	74.0	-20.8	Channel 157, EUT horizontal
3856.740	44.3	8.4	110.0	1.3	3.0	0.0	V-Horn	PK	0.0	52.7	74.0	-21.3	Channel 157, EUT SN down
3883.324	43.8	8.6	18.0	1.1	3.0	0.0	V-Horn	PK	0.0	52.4	74.0	-21.6	Channel 165, EUT SN on side
3883.264	43.7	8.6	81.0	1.3	3.0	0.0	V-Horn	PK	0.0	52.3	74.0	-21.7	Channel 165, EUT SN down
3829.980	43.6	8.4	307.0	1.2	3.0	0.0	H-Horn	PK	0.0	52.0	74.0	-22.0	Channel 149, EUT horizontal
3830.054	43.4	8.4	107.0	1.5	3.0	0.0	V-Horn	PK	0.0	51.8	74.0	-22.2	Channel 149, EUT SN down
3883.096	43.0	8.6	175.0	1.0	3.0	0.0	H-Horn	PK	0.0	51.6	74.0	-22.4	Channel 165, EUT SN on side
3883.176	43.0	8.6	66.0	1.0	3.0	0.0	H-Horn	PK	0.0	51.6	74.0	-22.4	Channel 165, EUT SN down
3883.354	41.8	8.6	268.0	1.9	3.0	0.0	V-Horn	PK	0.0	50.4	74.0	-23.6	Channel 165, EUT horizontal

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

EUT:	Silverton	Work Order:	FOCU0094
Serial Number:	2C	Date:	09/27/10
Customer:	Summit Semiconductor	Temperature:	22.7 °C
Attendees:	None	Humidity:	46%
Project:	None	Barometric Pres.:	1016.6 mb
Tested by:	Rod Peloquin	Power: 3.3 VDC	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

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

COMMENTS

36 inch I/O cable

EUT OPERATING MODES

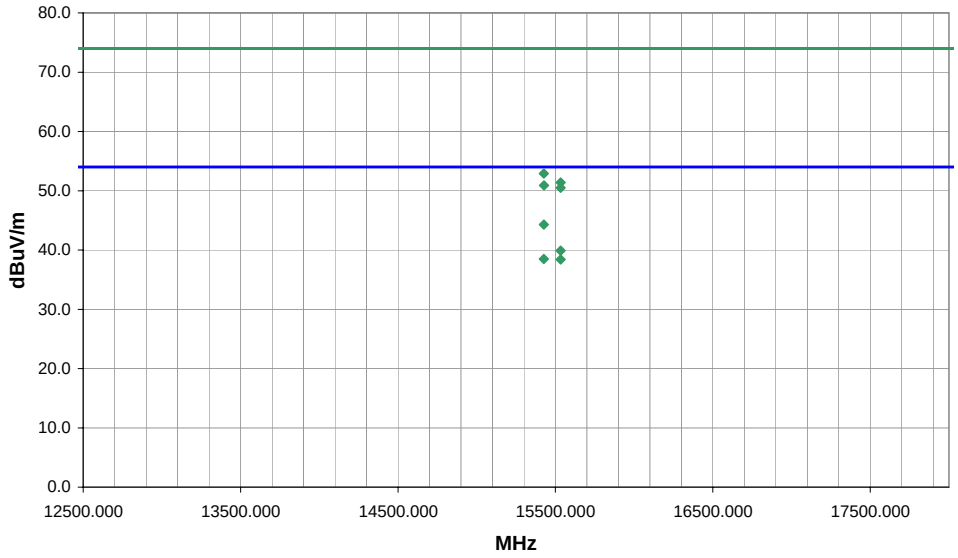
Continuous Transmitting, 6 Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	4
Configuration #	1
Results	Pass

Signature



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
15426.610	36.0	8.3	130.0	1.5	3.0	0.0	H-Horn	AV	0.0	44.3	54.0	-9.7	Channel 157, EUT SN down
15533.270	31.2	8.7	190.0	1.1	3.0	0.0	V-Horn	AV	0.0	39.9	54.0	-14.1	Channel 165, EUT SN down
15426.550	30.2	8.3	184.0	1.3	3.0	0.0	V-Horn	AV	0.0	38.5	54.0	-15.5	Channel 157, EUT SN down
15533.240	29.7	8.7	116.0	1.0	3.0	0.0	H-Horn	AV	0.0	38.4	54.0	-15.6	Channel 165, EUT SN down
15426.530	44.6	8.3	130.0	1.5	3.0	0.0	H-Horn	PK	0.0	52.9	74.0	-21.1	Channel 157, EUT SN down
15533.190	42.7	8.7	190.0	1.1	3.0	0.0	V-Horn	PK	0.0	51.4	74.0	-22.6	Channel 165, EUT SN down
15426.970	42.6	8.3	184.0	1.3	3.0	0.0	V-Horn	PK	0.0	50.9	74.0	-23.1	Channel 157, EUT SN down
15533.270	41.8	8.7	116.0	1.0	3.0	0.0	H-Horn	PK	0.0	50.5	74.0	-23.5	Channel 165, EUT SN down

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

EUT:	Silverton	Work Order:	FOCU0094
Serial Number:	2C	Date:	09/27/10
Customer:	Summit Semiconductor	Temperature:	22.7 °C
Attendees:	None	Humidity:	46%
Project:	None	Barometric Pres.:	1016.6 mb
Tested by:	Rod Peloquin	Power: 3.3 VDC	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

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

COMMENTS

36 inch I/O cable

EUT OPERATING MODES

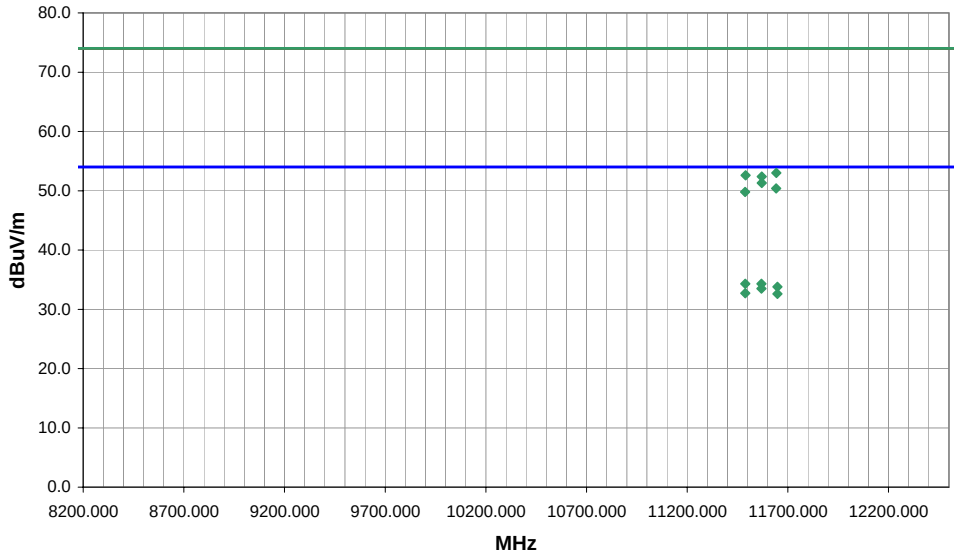
Continuous Transmitting, 6 Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	5
Configuration #	1
Results	Pass

Signature



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
11568.500	40.7	-6.4	112.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	Channel 157, EUT SN down
11488.400	41.1	-6.8	113.0	1.1	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	Channel 149, EUT SN down
11648.450	39.8	-6.0	112.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.8	54.0	-20.2	Channel 165, EUT SN down
11568.450	39.9	-6.4	195.0	1.2	3.0	0.0	H-Horn	AV	0.0	33.5	54.0	-20.5	Channel 157, EUT SN down
11642.250	59.0	-6.0	112.0	1.0	3.0	0.0	V-Horn	PK	0.0	53.0	74.0	-21.0	Channel 165, EUT SN down
11488.500	39.5	-6.8	321.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3	Channel 149, EUT SN down
11489.900	59.4	-6.8	113.0	1.1	3.0	0.0	V-Horn	PK	0.0	52.6	74.0	-21.4	Channel 149, EUT SN down
11648.300	38.6	-6.0	187.0	1.4	3.0	0.0	H-Horn	AV	0.0	32.6	54.0	-21.4	Channel 165, EUT SN down
11570.350	58.8	-6.4	112.0	1.0	3.0	0.0	V-Horn	PK	0.0	52.4	74.0	-21.6	Channel 157, EUT SN down
11570.150	57.7	-6.4	195.0	1.2	3.0	0.0	H-Horn	PK	0.0	51.3	74.0	-22.7	Channel 157, EUT SN down
11641.800	56.4	-6.0	187.0	1.4	3.0	0.0	H-Horn	PK	0.0	50.4	74.0	-23.6	Channel 165, EUT SN down
11487.900	56.6	-6.8	321.0	1.0	3.0	0.0	H-Horn	PK	0.0	49.8	74.0	-24.2	Channel 149, EUT SN down

AC POWERLINE 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.

MODES OF OPERATION
Continuous transmit. 6 Mbps, Channel 165 (5825 MHz)
Continuous transmit. 6 Mbps, Channel 157 (5785 MHz)
Continuous transmit. 6 Mbps, Channel 149 (5745 MHz)

POWER SETTINGS INVESTIGATED
3.3 VDC

CONFIGURATIONS INVESTIGATED
FOCU0094 - 3

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARE	4/29/2010	12 mo
Attenuator	Coaxicom	66702 2910-20	ATO	8/6/2010	13 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	2/16/2010	13 mo
EV07 Cables	N/A	Conducted Cables	EVG	6/21/2010	13 mo
LISN	Solar	9252-50-R-24-BNC	LIN	5/27/2010	12 mo
LISN	Solar	9252-50-R-24-BNC	LIR	3/2/2010	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.

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

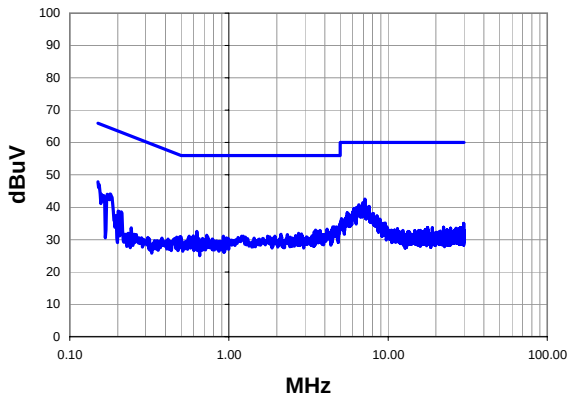
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin
EUT:	Silverton			
Configuration:	3 - AC Conducted Emissions			
Customer:	Summit Semiconductor			
Attendees:	None			
EUT Power:	3.3 VDC			
Operating Mode:	Continuous transmit. 6 Mbps, Channel 149 (5745 MHz)			
Deviations:	No deviations.			
Comments:	36 inch I/O cable			

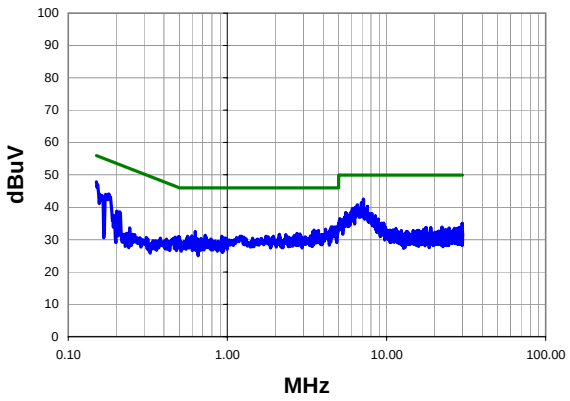
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.150	22.1	20.4	42.5	60.0	-17.5
0.150	27.7	20.2	47.9	66.0	-18.1
6.960	21.1	20.4	41.5	60.0	-18.5
6.560	20.4	20.3	40.7	60.0	-19.3
7.580	19.9	20.4	40.3	60.0	-19.7
6.110	19.4	20.3	39.7	60.0	-20.3
0.179	24.0	20.2	44.2	64.5	-20.4
6.280	18.3	20.3	38.6	60.0	-21.4
5.540	18.0	20.3	38.3	60.0	-21.7
8.080	17.7	20.4	38.1	60.0	-21.9
4.592	13.7	20.3	34.0	56.0	-22.1
4.744	13.7	20.3	34.0	56.0	-22.1
4.488	13.7	20.2	33.9	56.0	-22.1
8.520	16.9	20.4	37.3	60.0	-22.7
4.144	13.0	20.2	33.2	56.0	-22.8
4.424	12.9	20.2	33.1	56.0	-22.9
3.504	12.7	20.2	32.9	56.0	-23.1
3.728	12.6	20.2	32.8	56.0	-23.2
0.629	12.4	20.2	32.6	56.0	-23.4
3.624	12.3	20.2	32.5	56.0	-23.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.150	22.1	20.4	42.5	50.0	-7.5
0.150	27.7	20.2	47.9	56.0	-8.1
6.960	21.1	20.4	41.5	50.0	-8.5
6.560	20.4	20.3	40.7	50.0	-9.3
7.580	19.9	20.4	40.3	50.0	-9.7
6.110	19.4	20.3	39.7	50.0	-10.3
0.179	24.0	20.2	44.2	54.5	-10.4
6.280	18.3	20.3	38.6	50.0	-11.4
5.540	18.0	20.3	38.3	50.0	-11.7
8.080	17.7	20.4	38.1	50.0	-11.9
4.592	13.7	20.3	34.0	46.0	-12.1
4.744	13.7	20.3	34.0	46.0	-12.1
4.488	13.7	20.2	33.9	46.0	-12.1
8.520	16.9	20.4	37.3	50.0	-12.7
4.144	13.0	20.2	33.2	46.0	-12.8
4.424	12.9	20.2	33.1	46.0	-12.9
3.504	12.7	20.2	32.9	46.0	-13.1
3.728	12.6	20.2	32.8	46.0	-13.2
0.629	12.4	20.2	32.6	46.0	-13.4
3.624	12.3	20.2	32.5	46.0	-13.5

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

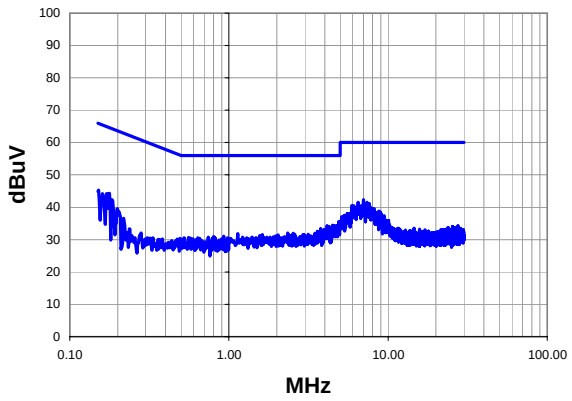
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin
EUT:	Silverton			
Configuration:	3 - AC Conducted Emissions			
Customer:	Summit Semiconductor			
Attendees:	None			
EUT Power:	3.3 VDC			
Operating Mode:	Continuous transmit. 6 Mbps, Channel 149 (5745 MHz)			
Deviations:	No deviations.			
Comments:	36 inch I/O cable			

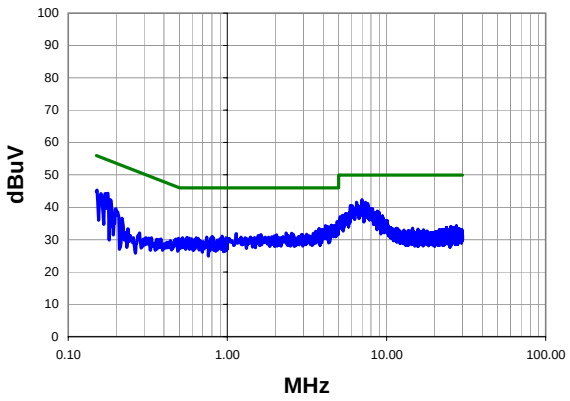
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.000	21.9	20.4	42.3	60.0	-17.7
6.490	21.2	20.3	41.5	60.0	-18.5
7.390	21.1	20.4	41.5	60.0	-18.5
7.610	20.7	20.4	41.1	60.0	-18.9
5.930	20.3	20.3	40.6	60.0	-19.4
6.090	20.2	20.3	40.5	60.0	-19.5
7.710	19.8	20.4	40.2	60.0	-19.8
0.177	24.2	20.2	44.4	64.6	-20.3
4.904	15.4	20.3	35.7	56.0	-20.3
7.900	19.2	20.4	39.6	60.0	-20.4
8.160	19.2	20.4	39.6	60.0	-20.4
0.152	25.1	20.2	45.3	65.9	-20.6
0.170	24.1	20.2	44.3	64.9	-20.7
8.750	18.4	20.4	38.8	60.0	-21.2
0.160	24.1	20.2	44.3	65.5	-21.2
8.950	18.1	20.4	38.5	60.0	-21.5
4.496	14.2	20.2	34.4	56.0	-21.6
8.360	18.0	20.4	38.4	60.0	-21.6
5.850	18.1	20.3	38.4	60.0	-21.6
4.800	14.1	20.3	34.4	56.0	-21.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.000	21.9	20.4	42.3	50.0	-7.7
6.490	21.2	20.3	41.5	50.0	-8.5
7.390	21.1	20.4	41.5	50.0	-8.5
7.610	20.7	20.4	41.1	50.0	-8.9
5.930	20.3	20.3	40.6	50.0	-9.4
6.090	20.2	20.3	40.5	50.0	-9.5
7.710	19.8	20.4	40.2	50.0	-9.8
0.177	24.2	20.2	44.4	54.6	-10.3
4.904	15.4	20.3	35.7	46.0	-10.3
7.900	19.2	20.4	39.6	50.0	-10.4
8.160	19.2	20.4	39.6	50.0	-10.4
0.152	25.1	20.2	45.3	55.9	-10.6
0.170	24.1	20.2	44.3	54.9	-10.7
8.750	18.4	20.4	38.8	50.0	-11.2
0.160	24.1	20.2	44.3	55.5	-11.2
8.950	18.1	20.4	38.5	50.0	-11.5
4.496	14.2	20.2	34.4	46.0	-11.6
8.360	18.0	20.4	38.4	50.0	-11.6
5.850	18.1	20.3	38.4	50.0	-11.6
4.800	14.1	20.3	34.4	46.0	-11.6

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2010.04.06
Version 2010.3.17

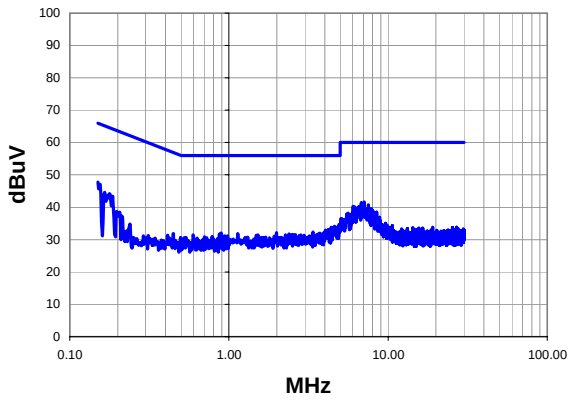
Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin

EUT:	Silverton
Configuration:	3 - AC Conducted Emissions
Customer:	Summit Semiconductor
Attendees:	None
EUT Power:	3.3 VDC
Operating Mode:	Continuous transmit. 6 Mbps, Channel 157 (5785 MHz)
Deviations:	No deviations.
Comments:	36 inch I/O cable

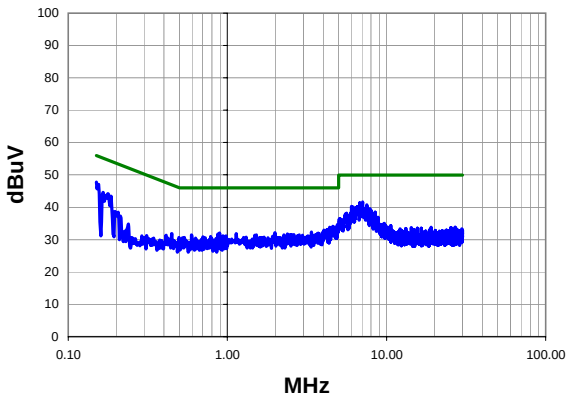
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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	27.6	20.2	47.8	66.0	-18.2
7.080	21.2	20.4	41.6	60.0	-18.4
6.790	21.0	20.4	41.4	60.0	-18.6
7.530	20.3	20.4	40.7	60.0	-19.3
6.040	20.0	20.3	40.3	60.0	-19.7
6.590	19.8	20.3	40.1	60.0	-19.9
7.860	19.2	20.4	39.6	60.0	-20.4
0.165	24.4	20.2	44.6	65.2	-20.6
8.470	18.1	20.4	38.5	60.0	-21.5
5.950	18.0	20.3	38.3	60.0	-21.7
5.610	17.9	20.3	38.2	60.0	-21.8
4.600	13.9	20.3	34.2	56.0	-21.9
4.808	13.6	20.3	33.9	56.0	-22.1
4.400	13.6	20.2	33.8	56.0	-22.2
4.232	12.9	20.2	33.1	56.0	-22.9
8.830	16.5	20.4	36.9	60.0	-23.1
5.100	16.2	20.3	36.5	60.0	-23.5
3.376	12.1	20.2	32.3	56.0	-23.7
1.992	11.9	20.2	32.1	56.0	-23.9
0.895	11.9	20.2	32.1	56.0	-23.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	27.6	20.2	47.8	56.0	-8.2
7.080	21.2	20.4	41.6	50.0	-8.4
6.790	21.0	20.4	41.4	50.0	-8.6
7.530	20.3	20.4	40.7	50.0	-9.3
6.040	20.0	20.3	40.3	50.0	-9.7
6.590	19.8	20.3	40.1	50.0	-9.9
7.860	19.2	20.4	39.6	50.0	-10.4
0.165	24.4	20.2	44.6	55.2	-10.6
8.470	18.1	20.4	38.5	50.0	-11.5
5.950	18.0	20.3	38.3	50.0	-11.7
5.610	17.9	20.3	38.2	50.0	-11.8
4.600	13.9	20.3	34.2	46.0	-11.9
4.808	13.6	20.3	33.9	46.0	-12.1
4.400	13.6	20.2	33.8	46.0	-12.2
4.232	12.9	20.2	33.1	46.0	-12.9
8.830	16.5	20.4	36.9	50.0	-13.1
5.100	16.2	20.3	36.5	50.0	-13.5
3.376	12.1	20.2	32.3	46.0	-13.7
1.992	11.9	20.2	32.1	46.0	-13.9
0.895	11.9	20.2	32.1	46.0	-13.9

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

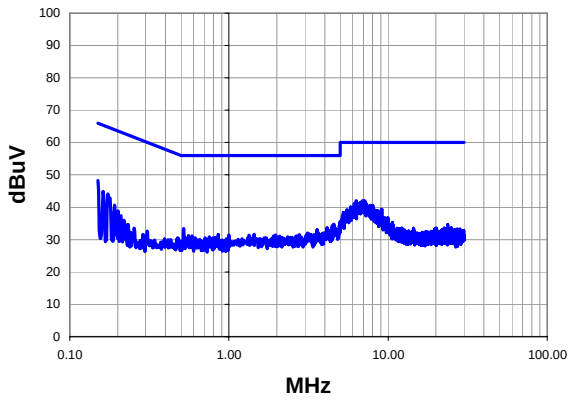
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin
EUT:	Silverton			
Configuration:	3 - AC Conducted Emissions			
Customer:	Summit Semiconductor			
Attendees:	None			
EUT Power:	3.3 VDC			
Operating Mode:	Continuous transmit. 6 Mbps, Channel 157 (5785 MHz)			
Deviations:	No deviations.			
Comments:	36 inch I/O cable			

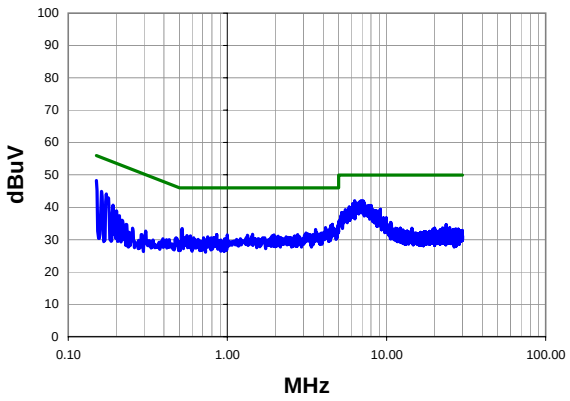
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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	28.1	20.2	48.3	66.0	-17.7
6.310	21.8	20.3	42.1	60.0	-17.9
7.100	21.6	20.4	42.0	60.0	-18.0
6.900	21.6	20.4	42.0	60.0	-18.0
7.190	21.3	20.4	41.7	60.0	-18.3
6.770	21.3	20.4	41.7	60.0	-18.3
6.370	21.2	20.3	41.5	60.0	-18.5
7.250	20.9	20.4	41.3	60.0	-18.7
6.590	20.9	20.3	41.2	60.0	-18.8
6.120	20.9	20.3	41.2	60.0	-18.8
7.760	20.1	20.4	40.5	60.0	-19.5
8.020	20.0	20.4	40.4	60.0	-19.6
5.830	19.8	20.3	40.1	60.0	-19.9
0.162	24.7	20.2	44.9	65.4	-20.5
0.174	24.0	20.2	44.2	64.8	-20.6
9.130	18.9	20.4	39.3	60.0	-20.7
5.520	19.0	20.3	39.3	60.0	-20.7
8.250	18.8	20.4	39.2	60.0	-20.8
5.730	18.9	20.3	39.2	60.0	-20.8
8.430	18.6	20.4	39.0	60.0	-21.0

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.1	20.2	48.3	56.0	-7.7
6.310	21.8	20.3	42.1	50.0	-7.9
7.100	21.6	20.4	42.0	50.0	-8.0
6.900	21.6	20.4	42.0	50.0	-8.0
7.190	21.3	20.4	41.7	50.0	-8.3
6.770	21.3	20.4	41.7	50.0	-8.3
6.370	21.2	20.3	41.5	50.0	-8.5
7.250	20.9	20.4	41.3	50.0	-8.7
6.590	20.9	20.3	41.2	50.0	-8.8
6.120	20.9	20.3	41.2	50.0	-8.8
7.760	20.1	20.4	40.5	50.0	-9.5
8.020	20.0	20.4	40.4	50.0	-9.6
5.830	19.8	20.3	40.1	50.0	-9.9
0.162	24.7	20.2	44.9	55.4	-10.5
0.174	24.0	20.2	44.2	54.8	-10.6
9.130	18.9	20.4	39.3	50.0	-10.7
5.520	19.0	20.3	39.3	50.0	-10.7
8.250	18.8	20.4	39.2	50.0	-10.8
5.730	18.9	20.3	39.2	50.0	-10.8
8.430	18.6	20.4	39.0	50.0	-11.0

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

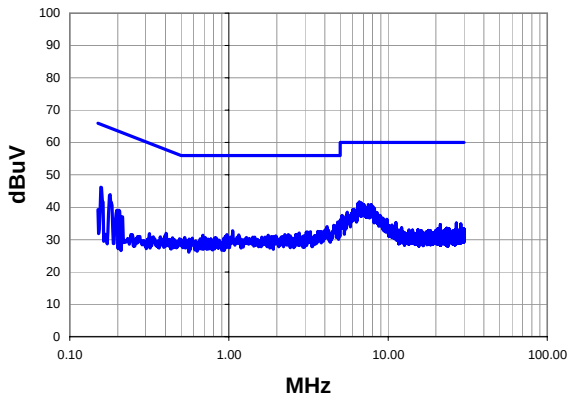
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin
EUT:	Silverton			
Configuration:	3 - AC Conducted Emissions			
Customer:	Summit Semiconductor			
Attendees:	None			
EUT Power:	3.3 VDC			
Operating Mode:	Continuous transmit. 6 Mbps, Channel 165 (5825 MHz)			
Deviations:	No deviations.			
Comments:	36 inch I/O cable			

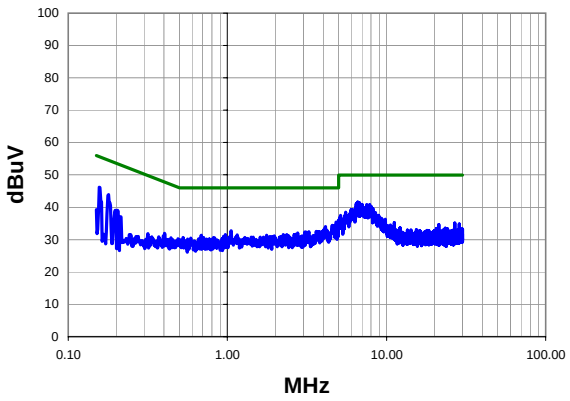
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	19	**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)
6.590	21.3	20.3	41.6	60.0	-18.4
6.770	21.1	20.4	41.5	60.0	-18.5
6.850	20.6	20.4	41.0	60.0	-19.0
7.530	20.4	20.4	40.8	60.0	-19.2
7.040	20.4	20.4	40.8	60.0	-19.2
7.840	20.3	20.4	40.7	60.0	-19.3
0.157	26.0	20.2	46.2	65.6	-19.5
8.030	19.8	20.4	40.2	60.0	-19.8
8.200	19.2	20.4	39.6	60.0	-20.4
4.824	15.2	20.3	35.5	56.0	-20.5
0.179	23.8	20.2	44.0	64.5	-20.6
6.140	19.0	20.3	39.3	60.0	-20.7
4.952	14.5	20.3	34.8	56.0	-21.2
8.350	18.1	20.4	38.5	60.0	-21.5
5.530	18.2	20.3	38.5	60.0	-21.5
4.552	14.2	20.3	34.5	56.0	-21.6
4.128	13.8	20.2	34.0	56.0	-22.0
8.890	17.1	20.4	37.5	60.0	-22.5
5.140	17.2	20.3	37.5	60.0	-22.5
1.056	12.6	20.2	32.8	56.0	-23.2

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
6.590	21.3	20.3	41.6	50.0	-8.4
6.770	21.1	20.4	41.5	50.0	-8.5
6.850	20.6	20.4	41.0	50.0	-9.0
7.530	20.4	20.4	40.8	50.0	-9.2
7.040	20.4	20.4	40.8	50.0	-9.2
7.840	20.3	20.4	40.7	50.0	-9.3
0.157	26.0	20.2	46.2	55.6	-9.5
8.030	19.8	20.4	40.2	50.0	-9.8
8.200	19.2	20.4	39.6	50.0	-10.4
4.824	15.2	20.3	35.5	46.0	-10.5
0.179	23.8	20.2	44.0	54.5	-10.6
6.140	19.0	20.3	39.3	50.0	-10.7
4.952	14.5	20.3	34.8	46.0	-11.2
8.350	18.1	20.4	38.5	50.0	-11.5
5.530	18.2	20.3	38.5	50.0	-11.5
4.552	14.2	20.3	34.5	46.0	-11.6
4.128	13.8	20.2	34.0	46.0	-12.0
8.890	17.1	20.4	37.5	50.0	-12.5
5.140	17.2	20.3	37.5	50.0	-12.5
1.056	12.6	20.2	32.8	46.0	-13.2

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2010.04.06
Version 2010.3.17

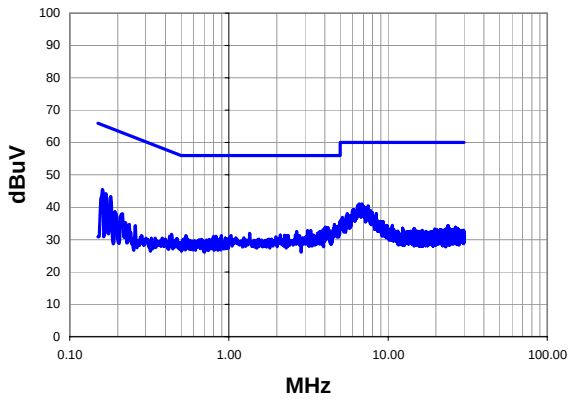
Work Order:	FOCU0094	**Date:**	10/01/10	
Project:	None	**Temperature:**	22.7 °C	
Job Site:	EV07	**Humidity:**	46.1	
Serial Number:	2C	**Barometric Pres.:**	1016.6 mb	**Tested by:** Rod Peloquin

EUT:	Silverton
Configuration:	3 - AC Conducted Emissions
Customer:	Summit Semiconductor
Attendees:	None
EUT Power:	3.3 VDC
Operating Mode:	Continuous transmit. 6 Mbps, Channel 165 (5825 MHz)
Deviations:	No deviations.
Comments:	36 inch I/O cable

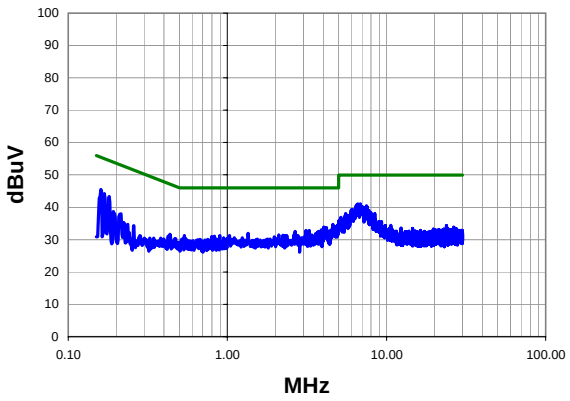
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	20	**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)
6.840	20.7	20.4	41.1	60.0	-18.9
6.590	20.7	20.3	41.0	60.0	-19.0
7.490	20.1	20.4	40.5	60.0	-19.5
0.160	25.3	20.2	45.5	65.5	-20.0
7.250	19.2	20.4	39.6	60.0	-20.4
6.110	19.0	20.3	39.3	60.0	-20.7
0.169	24.1	20.2	44.3	65.0	-20.8
7.750	18.6	20.4	39.0	60.0	-21.0
0.181	23.2	20.2	43.4	64.5	-21.1
4.944	14.4	20.3	34.7	56.0	-21.3
4.600	14.4	20.3	34.7	56.0	-21.4
7.970	18.0	20.4	38.4	60.0	-21.6
4.840	13.9	20.3	34.2	56.0	-21.8
5.550	17.8	20.3	38.1	60.0	-21.9
8.440	17.6	20.4	38.0	60.0	-22.0
4.064	13.6	20.2	33.8	56.0	-22.2
4.192	13.5	20.2	33.7	56.0	-22.3
3.896	12.8	20.2	33.0	56.0	-23.0
5.770	16.6	20.3	36.9	60.0	-23.1
5.170	16.6	20.3	36.9	60.0	-23.1

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
6.840	20.7	20.4	41.1	50.0	-8.9
6.590	20.7	20.3	41.0	50.0	-9.0
7.490	20.1	20.4	40.5	50.0	-9.5
0.160	25.3	20.2	45.5	55.5	-10.0
7.250	19.2	20.4	39.6	50.0	-10.4
6.110	19.0	20.3	39.3	50.0	-10.7
0.169	24.1	20.2	44.3	55.0	-10.8
7.750	18.6	20.4	39.0	50.0	-11.0
0.181	23.2	20.2	43.4	54.5	-11.1
4.944	14.4	20.3	34.7	46.0	-11.3
4.600	14.4	20.3	34.7	46.0	-11.4
7.970	18.0	20.4	38.4	50.0	-11.6
4.840	13.9	20.3	34.2	46.0	-11.8
5.550	17.8	20.3	38.1	50.0	-11.9
8.440	17.6	20.4	38.0	50.0	-12.0
4.064	13.6	20.2	33.8	46.0	-12.2
4.192	13.5	20.2	33.7	46.0	-12.3
3.896	12.8	20.2	33.0	46.0	-13.0
5.770	16.6	20.3	36.9	50.0	-13.1
5.170	16.6	20.3	36.9	50.0	-13.1

BURST DURATION

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	6/1/2009	24
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	8/6/2010	13
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

Per ANSI C63.10, for unlicensed wireless devices unable to be configured for 100 % duty cycle even in test mode, the system should be configured for the longest duration duty cycle supported. The transmission pulse duration is that time over which the unlicensed wireless device is on and transmitting at its maximum output power.

Measurement methods defined in ANSI C63.10 are often based upon the relationship between the EUT transmission pulse duration and the sweep speed of the measurement analyzer.

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

NORTHWEST EMC

BURST DURATION

XMit 2010.07.29

EUT:	Silverton			Work Order:	FOCU0094
Serial Number:	2E			Date:	09/23/10
Customer:	Summit Semiconductor			Temperature:	22°C
Attendees:	Ponnappa Pasura			Humidity:	45%
Project:	None			Barometric Pres.:	30.10 in
Tested by:	Rod Peloquin	Power:	3.3 VDC	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

2.06 dB loss added for adapter cable and DC block

DEVIATIONS FROM TEST STANDARD

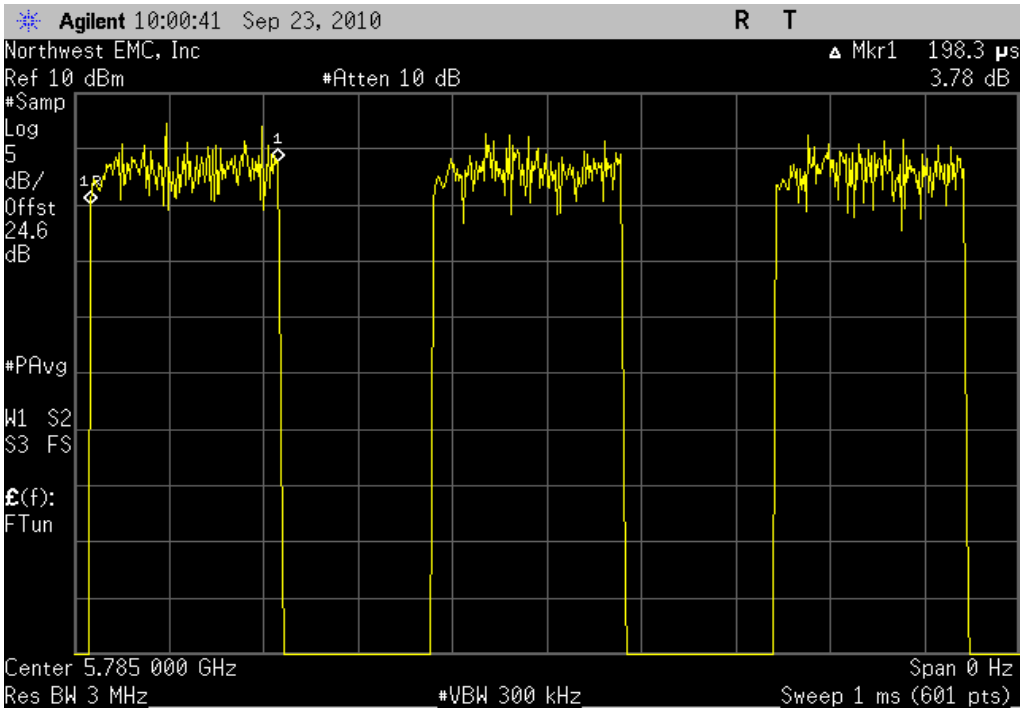
None

Configuration #	2	Signature

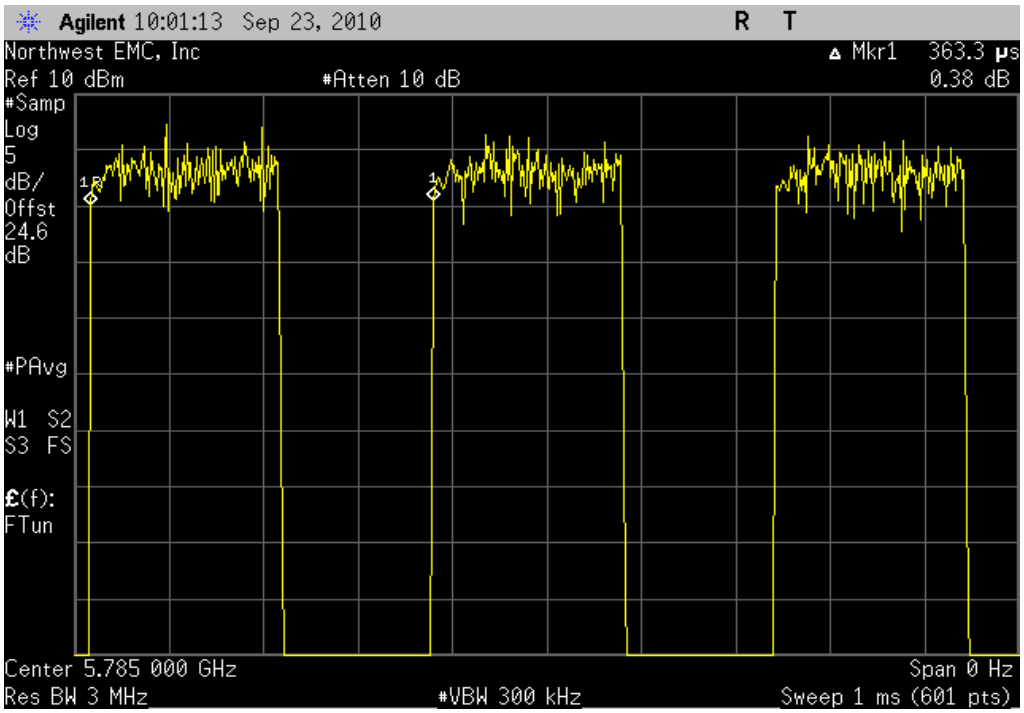
	Value
PULSE DURATION	198.3 µs
PERIOD	363.3 µs
RF GATING	See graph

BURST DURATION

PULSE DURATION
Value: 198.3 µs



PERIOD
Value: 363.3 µs



BURST DURATION

RF GATING
Value: See graph