

OEM Worldwide

200

Report No. OEMW0008

Report Prepared By



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

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: October 28, 2010

OEM Worldwide

Model: 200

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Occupied Bandwidth	FCC 15.247:2010	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2010	ANSI C63.10:2009	Pass
Band Edge Compliance	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 15.247:2010	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2010	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.
41 Tesla Ave.
Irvine, CA 92618

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 #2834B-2).

Approved By:

Don Fecteau, IS Manager



NVLAP Lab Code: 200676-0

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).



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



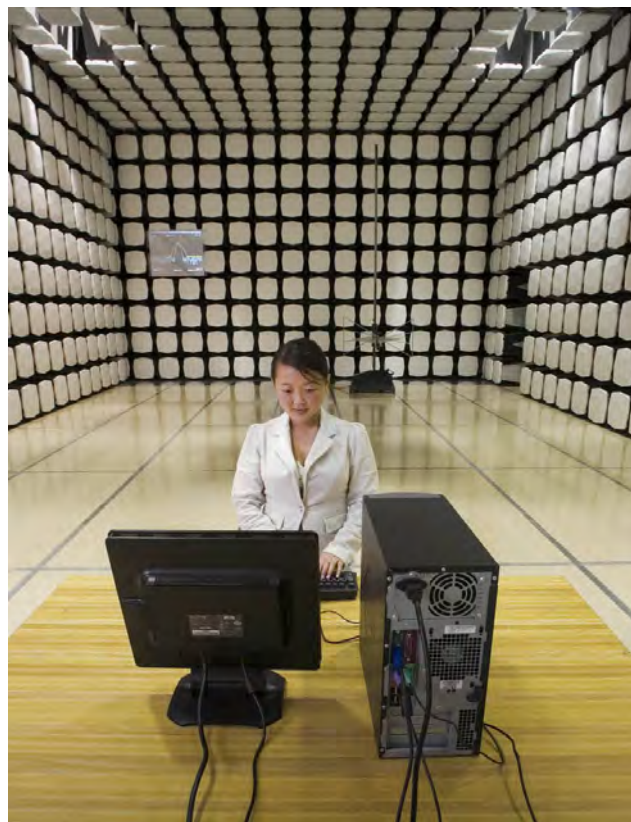
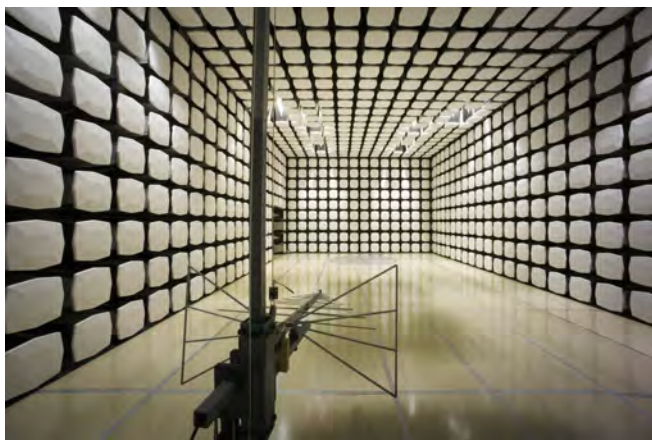
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

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:	OEM Worldwide
Address:	2920 Kelly Avenue, POB 430
City, State, Zip:	Watertown, SD 57201
Test Requested By:	Andy Livingston
Model:	200
First Date of Test:	October 25, 2010
Last Date of Test:	October 28, 2010
Receipt Date of Samples:	October 25, 2010
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

902-928 MHz radio. +13 dBm expected output power.

Testing Objective:

Demonstrate compliance to FCC 15.247 specifications

CONFIGURATION 1 OEMW0008

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Streamer - 904 MHz	OEM Worldwide	200	None
Streamer - 924 MHz	OEM Worldwide	200	None
Streamer - 926 MHz	OEM Worldwide	200	None
Streamer - Blank	OEM Worldwide	200	None

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	HON-KWANG	HK-U-05A100-CP	0810C
Microphone	N/A	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Microphone Cable	No	1.2m	No	Microphone	Streamer
AC Cable	No	1.6m	No	Streamer	AC Mains
Audio Cable	No	2.0m	No	Streamer	Non-Terminated
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	10/25/2010	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.
2	10/25/2010	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.
3	10/25/2010	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.
4	10/27/2010	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.
5	10/28/2010	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	10/28/2010	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
Antenna, Biconilog	EMCO	3142	AXJ	2/24/2010	13
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	4/1/2010	13
Spectrum Analyzer	Agilent	E4446A	AAY	1/15/2010	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 occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made in a radiated configuration in a semi-anechoic chamber with the fundamental of the carrier full maximized for its highest radiated power. The EUT was transmitting at its maximum data rate with the typical modulation and a test duty cycle.

EMC

Occupied Bandwidth

EUT:	200	Work Order:	OEMW0008
Serial Number:	None	Date:	10/25/10
Customer:	OEM Worldwide	Temperature:	22.84
Attendees:	None	Humidity:	48%
Project:	None	Barometric Pres.:	1012.2
Tested by:	Jaemi Suh	Power:	120V/60Hz
		Job Site:	OC11

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

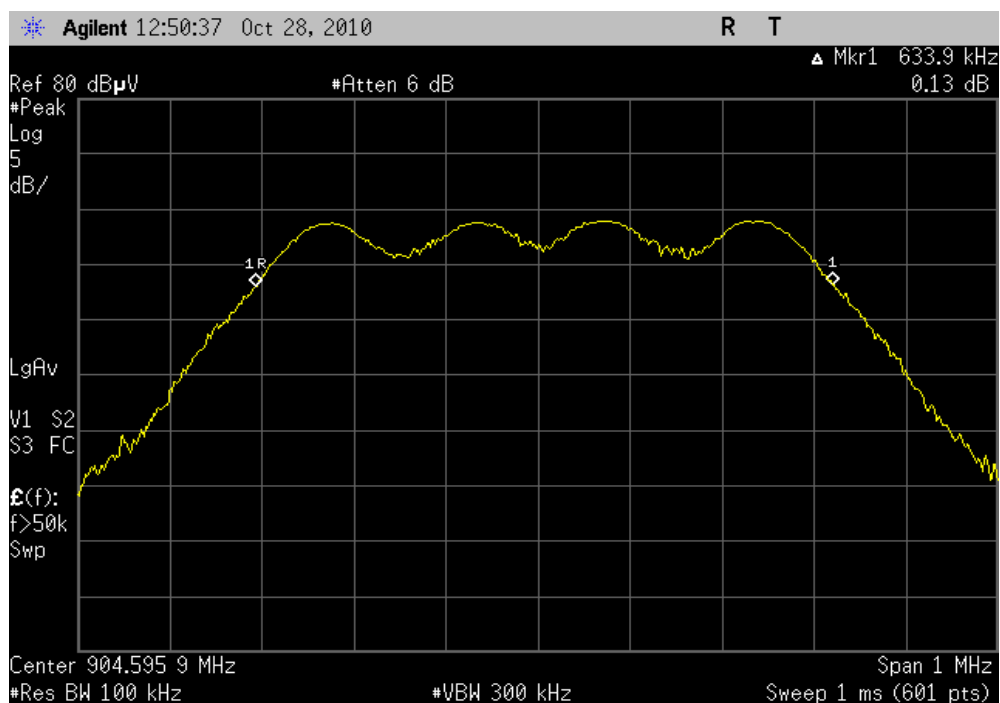
COMMENTS
None

DEVIATIONS FROM TEST STANDARD
No Deviations

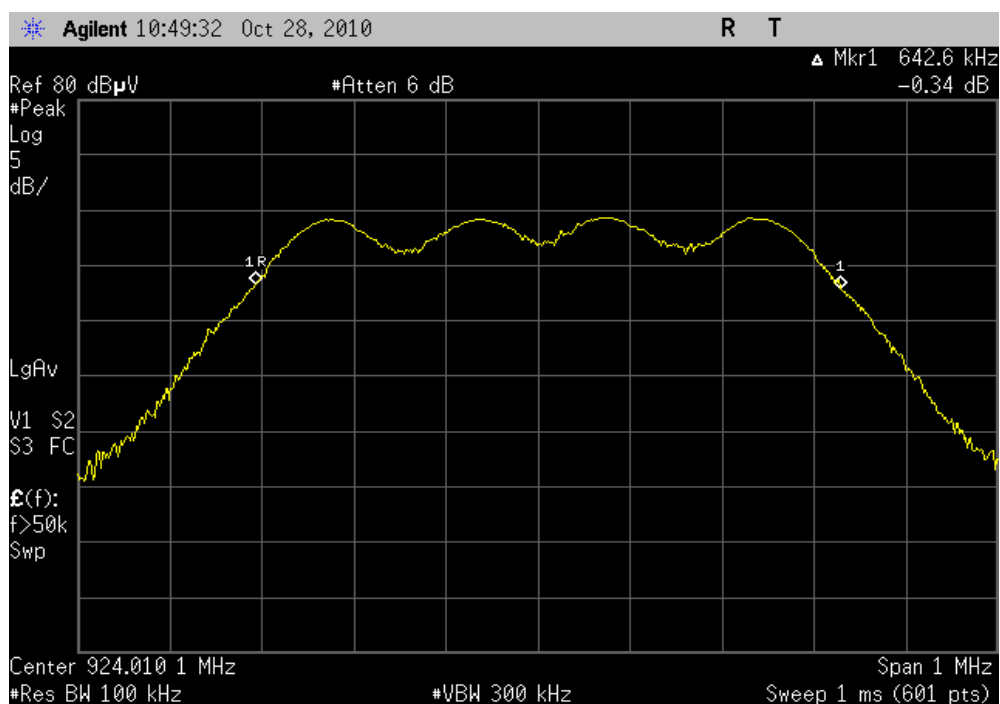
Configuration #	1	Signature 
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	Value	Limit	Results
Low 904 MHz	633.9 kHz	>= 500 kHz	Pass
Mid 924 MHz	642.6 kHz	>= 500 kHz	Pass
High 926 MHz	629.5 kHz	>= 500 kHz	Pass

Low		
Result: Pass	Value: 633.9 kHz	Limit: ≥ 500 kHz



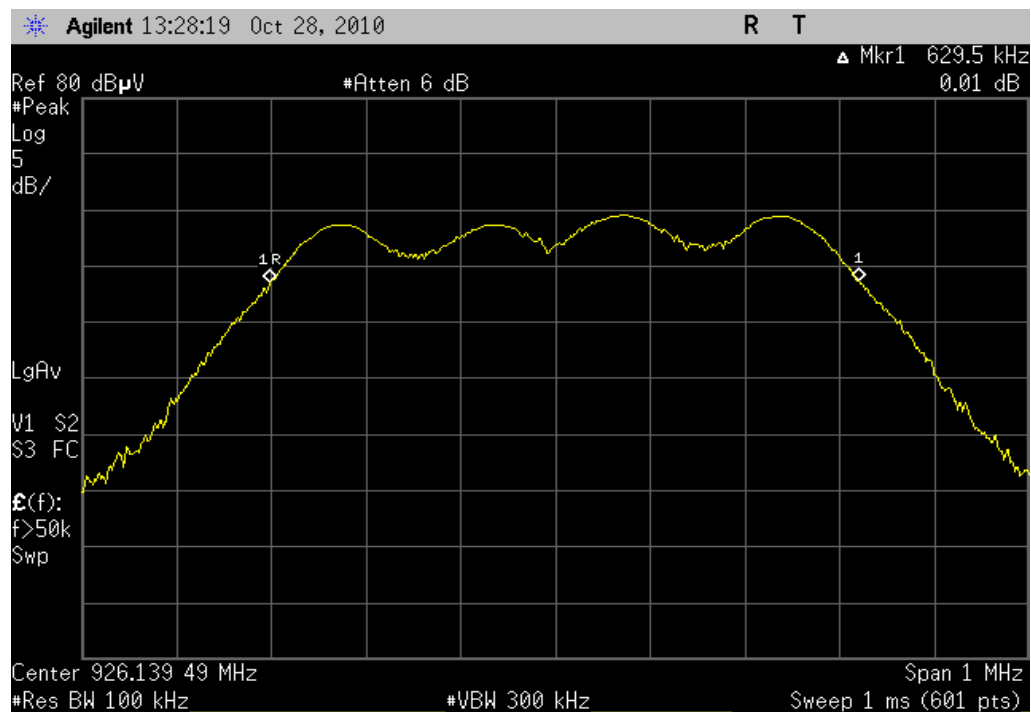
Mid		
Result: Pass	Value: 642.6 kHz	Limit: ≥ 500 kHz



High

Result: Pass

Value: 629.5 kHz

Limit: ≥ 500 kHz

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 at 904 MHz
Transmitting at 924 MHz
Transmitting at 926 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency 904 MHz Stop Frequency 928 MHz

CLOCKS AND OSCILLATORS

904 MHz, 924 MHz, 926 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna, Biconilog	EMCO	3142	AXJ	2/24/2010	13
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	4/1/2010	13
Spectrum Analyzer	Agilent	E4446A	AAY	1/15/2010	12

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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


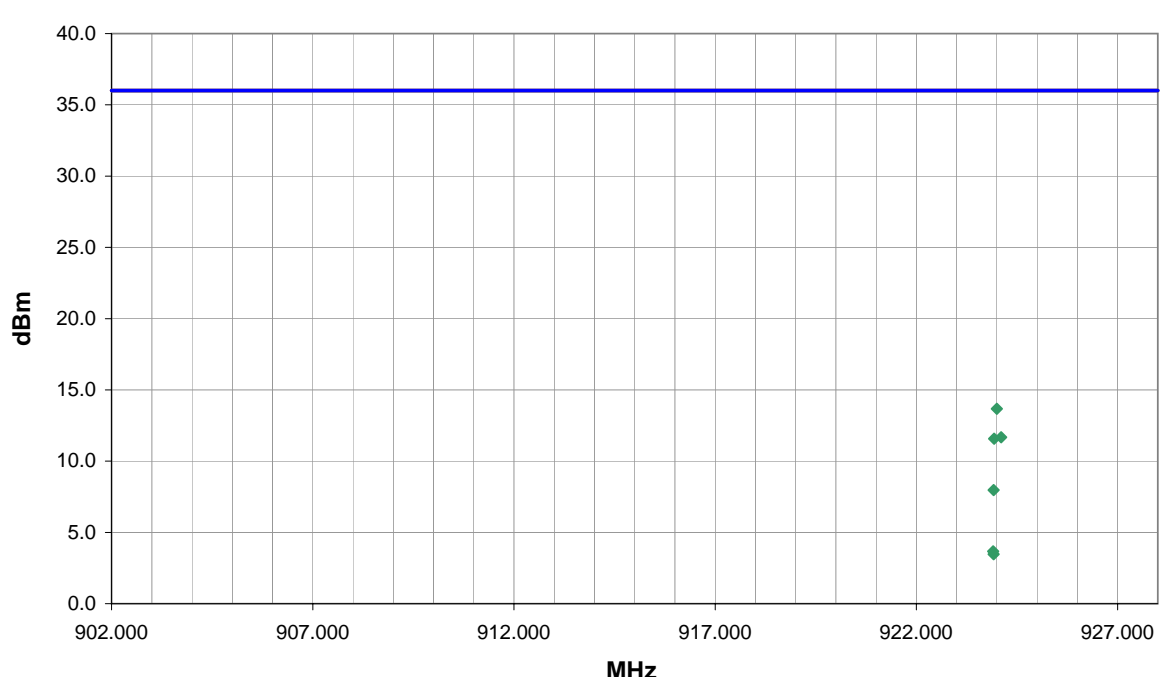
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.


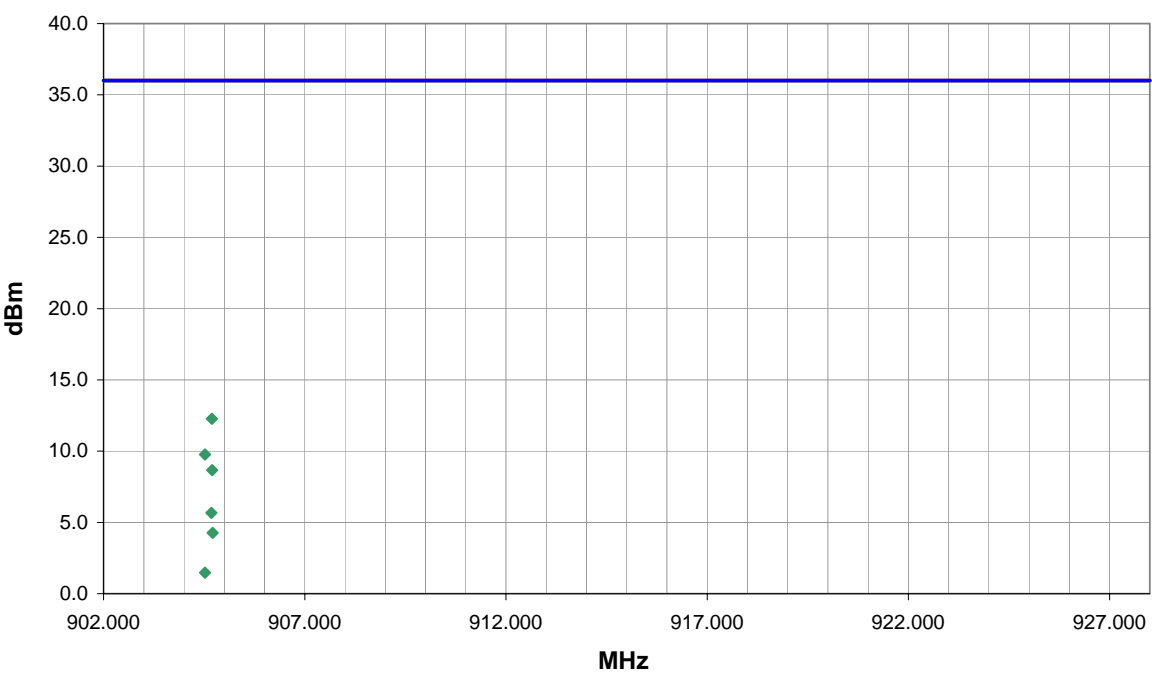
TEST DESCRIPTION


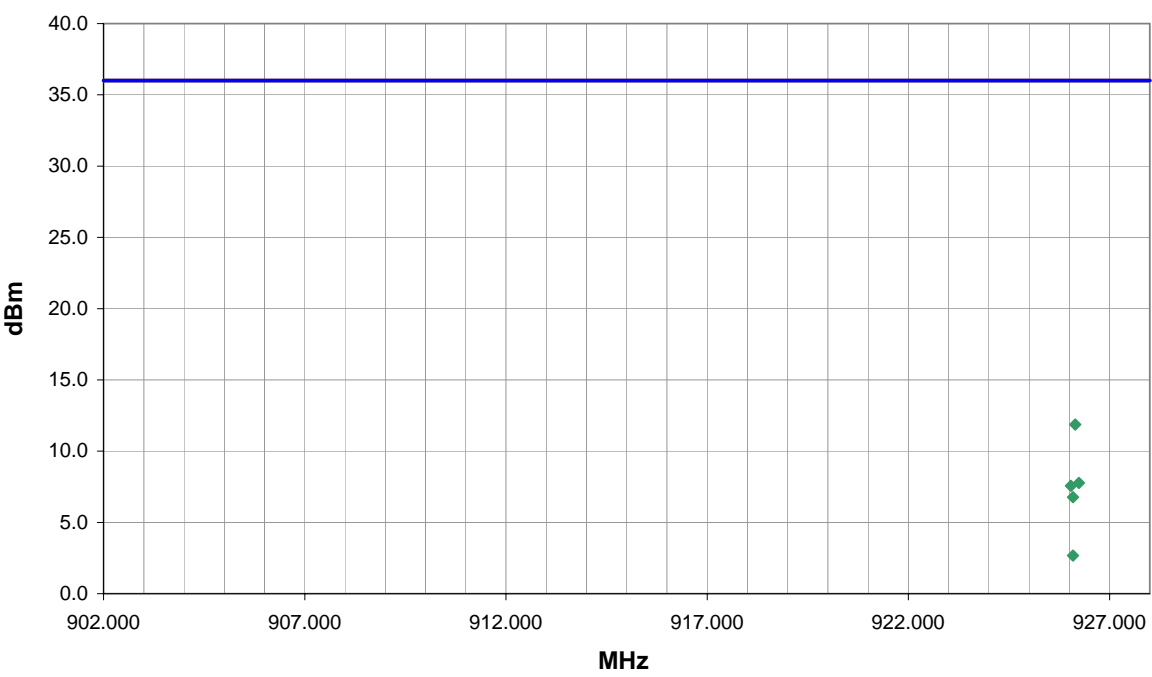
The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The radiated power was measured using a spectrum analyzer and horn antenna in a semi-anechoic chamber. The resolution bandwidth was set to 3 MHz and the video bandwidth was set to 8 MHz. A peak detector was used. The EUT was transmitting at its maximum data rate. The level of fundamental emission was maximized by rotating the turntable and moving the measurement antenna from 1 – 4 meters in height.

The field strength measurement was converted to effective radiated power (EIRP) using the Friis transmission equation. A simplified version is found in ANSI C63.10:2009, Equation 5.

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

NORTHWEST		Effective Radiated Power (EIRP)		PSA 2008.07.21 EMI 2010.9.21					
EMC									
EUT: 200		Work Order: OEMW0008							
Serial Number: None		Date: 10/28/10							
Customer: OEM Worldwide		Temperature: 22.94							
Attendees: None		Humidity: 48%							
Project: None		Barometric Pres.: 1012.2							
Tested by: Jaemi Suh		Power: 120VAC/60Hz		Job Site: OC10					
TEST SPECIFICATIONS		Test Method							
FCC 15.247:2010		ANSI C63.10:2009							
TEST PARAMETERS									
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3					
COMMENTS									
None									
EUT OPERATING MODES									
Transmitting at 924 MHz									
DEVIATIONS FROM TEST STANDARD									
No deviations.									
Run #	1	<div style="text-align: right;">  Signature </div>							
Configuration #	1								
Results	Pass								
									
Freq (MHz)		Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
924.000		0.0	1.0	V-Bilog	PK	2.33E-02	13.7	36.0	-32.3
924.107		0.0	1.0	H-Bilog	PK	1.47E-02	11.7	36.0	-34.3
923.933		27.0	1.0	H-Bilog	PK	1.44E-02	11.6	36.0	-34.4
923.920		289.0	1.5	V-Bilog	PK	6.27E-03	8.0	36.0	-38.0
923.907		133.0	2.5	V-Bilog	PK	2.33E-03	3.7	36.0	-42.3
923.920		312.0	1.8	H-Bilog	PK	2.22E-03	3.5	36.0	-42.5

NORTHWEST		Effective Radiated Power (EIRP)		PSA 2008.07.21 EMI 2010.9.21							
EMC											
EUT: 200		Work Order: OEMW0008									
Serial Number: None		Date: 10/28/10									
Customer: OEM Worldwide		Temperature: 22.94									
Attendees: None		Humidity: 48%									
Project: None		Barometric Pres.: 1012.2									
Tested by: Jaemi Suh		Power: 120VAC/60Hz		Job Site: OC10							
TEST SPECIFICATIONS		Test Method									
FCC 15.247:2010		ANSI C63.10:2009									
TEST PARAMETERS											
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3							
COMMENTS											
None											
EUT OPERATING MODES											
Transmitting at 904 MHz											
DEVIATIONS FROM TEST STANDARD											
No deviations.											
Run #	1		<div style="text-align: right;"> <i>Signature</i>  </div>								
Configuration #	1										
Results	Pass										
											
Freq (MHz)			Azimuth (degrees)	Height (meters)		Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
904.690			0.0	1.0		V-Bilog	PK	1.69E-02	12.3	36.0	-33.7
904.520			41.0	1.6		H-Bilog	PK	9.49E-03	9.8	36.0	-36.2
904.700			0.0	1.0		V-Bilog	PK	7.36E-03	8.7	36.0	-37.3
904.680			105.0	1.8		V-Bilog	PK	3.69E-03	5.7	36.0	-40.3
904.710			237.0	1.9		H-Bilog	PK	2.67E-03	4.3	36.0	-41.7
904.520			360.0	2.9		V-Bilog	PK	1.40E-03	1.5	36.0	-44.5

NORTHWEST		Effective Radiated Power (EIRP)		PSA 2008.07.21 EMI 2010.9.21					
EMC									
EUT: 200		Work Order: OEMW0008							
Serial Number: None		Date: 10/28/10							
Customer: OEM Worldwide		Temperature: 22.94							
Attendees: None		Humidity: 48%							
Project: None		Barometric Pres.: 1012.2							
Tested by: Jaemi Suh		Power: 120VAC/60Hz		Job Site: OC06					
TEST SPECIFICATIONS		Test Method							
FCC 15.247:2010		ANSI C63.10:2009							
TEST PARAMETERS									
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3					
COMMENTS									
None									
EUT OPERATING MODES									
Transmitting at 926 MHz									
DEVIATIONS FROM TEST STANDARD									
No deviations.									
Run #	2	<div style="text-align: right;"> <i>Signature</i>  </div>							
Configuration #	1								
Results	Pass								
									
Freq (MHz)		Azimuth (degrees)	Height (meters)	Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)
926.147		339.0	1.0	V-Bilog	PK	1.54E-02	11.9	36.0	-34.1
926.240		37.0	2.4	H-Bilog	PK	5.99E-03	7.8	36.0	-38.2
926.040		302.0	1.3	V-Bilog	PK	5.72E-03	7.6	36.0	-38.4
926.093		256.0	1.0	H-Bilog	PK	4.75E-03	6.8	36.0	-39.2
926.093		44.0	1.7	H-Bilog	PK	1.85E-03	2.7	36.0	-43.3
926.133		231.0	1.0	V-Bilog	PK	9.27E-04	-0.3	36.0	-46.3

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
Antenna, Biconilog	EMCO	3142	AXJ	2/24/2010	13
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	4/1/2010	13
Spectrum Analyzer	Agilent	E4446A	AAY	1/15/2010	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

Since the EUT has an integral antenna, the radiated emissions at the edges of the authorized bands were measured. The EUT was set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The EUT was transmitting at its only data rate available.

The spectrum was scanned across each band edge from at least 10 MHz below the band edge to 10 MHz above the band edge.

EMC

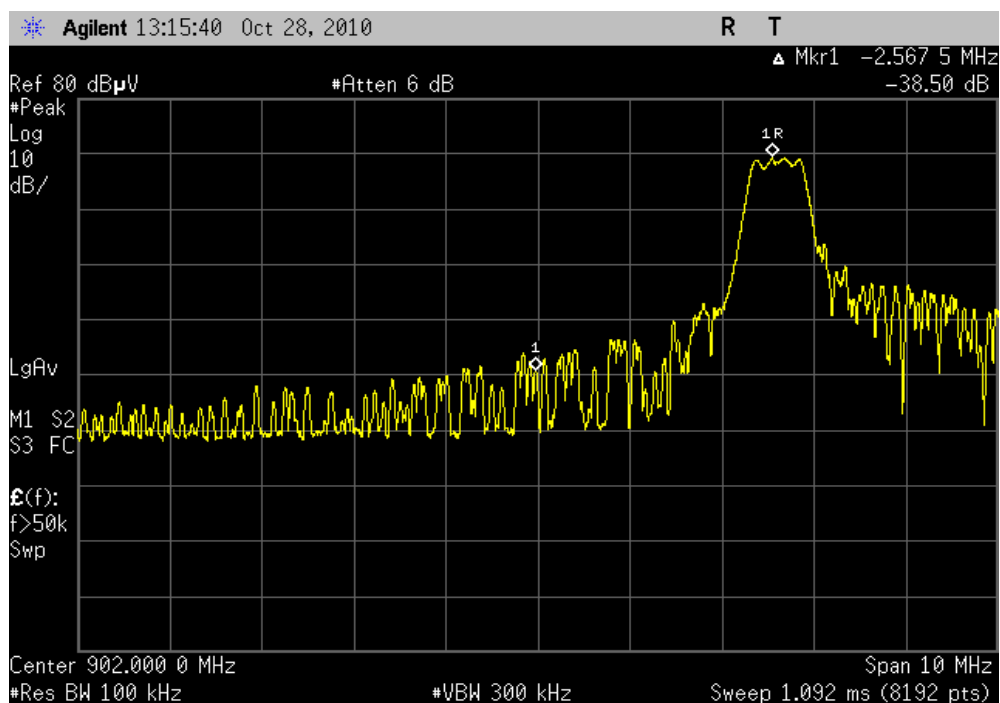
Band Edge Compliance

EUT: 200		Work Order: OEMW0008	
Serial Number: None		Date: 10/25/10	
Customer: OEM Worldwide		Temperature: 22.84	
Attendees: None		Humidity: 48%	
Project: None		Barometric Pres.: 1012.2	
Tested by: Jaemi Suh		Power: 120V/60Hz	Job Site: OC11
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2010		ANSI C63.10:2009	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
No Deviations			
Configuration #	1	Signature 	
		Value	Limit
Low 902 MHz		-38.50 dB	<= -20dB
High 926 MHz		-26.15 dB	<= -20dB
			Results
			Pass
			Pass

Low 904 MHz

Result: Pass

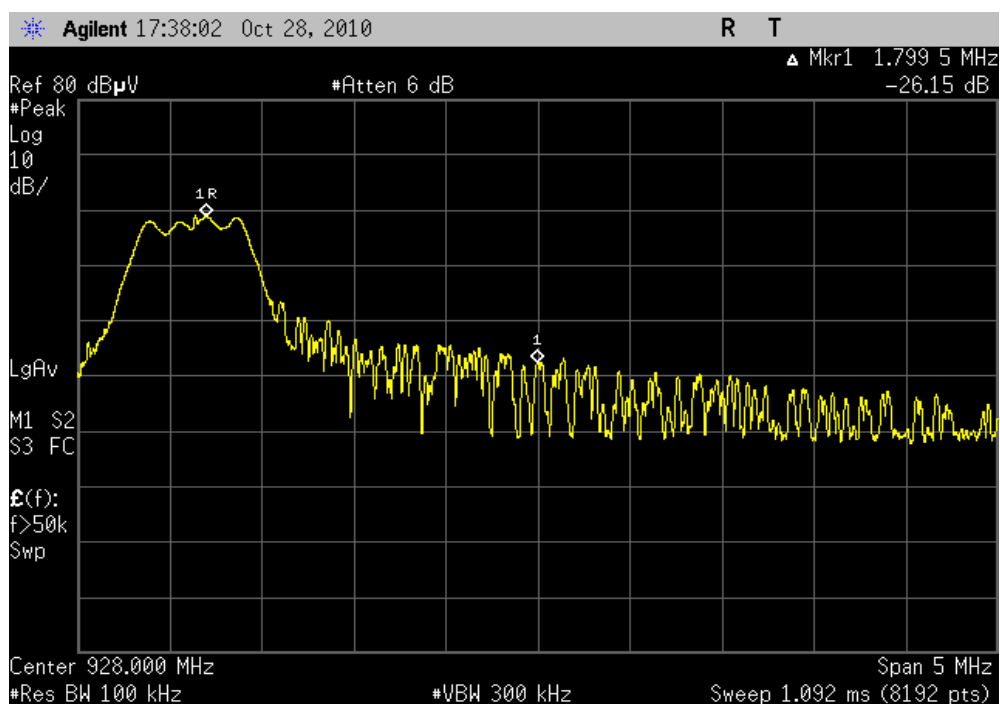
Value: -38.50 dB

Limit: ≤ -20 dB

High 927 MHz

Result: Pass

Value: -26.15 dB

Limit: ≤ -20 dB

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
Antenna, Biconilog	EMCO	3142	AXJ	2/24/2010	13
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	4/1/2010	13
Spectrum Analyzer	Agilent	E4446A	AAY	1/15/2010	12

MEASUREMENT UNCERTAINTY

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TEST DESCRIPTION

The peak power spectral density was measured with the EUT set to low, medium, and high transmit frequencies. The radiated power spectral density was measured using a spectrum analyzer and horn antenna in a semi-anechoic chamber. The EUT was transmitting at its maximum data rate for each modulation type available. The level of fundamental emission was maximized by rotating the turntable and moving the measurement antenna from 1 – 4 meters in height. Per the procedure outlined in ANSI C63.10:2009, the spectrum analyzer was used as follows:

The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be $1.5 \times 10^6 \div 3 \times 10^3 = 500$ seconds. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 35 dB for correction to 3 kHz."

The field strength measurement of power spectral density was converted to effective radiated power spectral density (dBm/3kHz) (EIRP) using the Friis transmission equation. A simplified version is found in ANSI C63.10:2009, Equation 6.

EMC

POWER SPECTRAL DENSITY

EUT:	200	Work Order:	OEMW0008
Serial Number:	None	Date:	10/25/10
Customer:	OEM Worldwide	Temperature:	22.84
Attendees:	None	Humidity:	48%
Project:	None	Barometric Pres.:	1012.2
Tested by:	Jaemi Suh	Power:	120V/60Hz
		Job Site:	OC11

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

COMMENTS
904, 924, 926 MHz

DEVIATIONS FROM TEST STANDARD
No Deviations

Configuration #	1	Signature 
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	Value	Limit	Results
Low Channel	-38.7 dBm/3kHz, EIRP	<= 8 dBm/3kHz	Pass
Mid Channel	-38.0 dBm/3kHz, EIRP	<= 8 dBm/3kHz	Pass
High Channel	-48.8 dBm/3kHz, EIRP	<= 8 dBm/3kHz	Pass

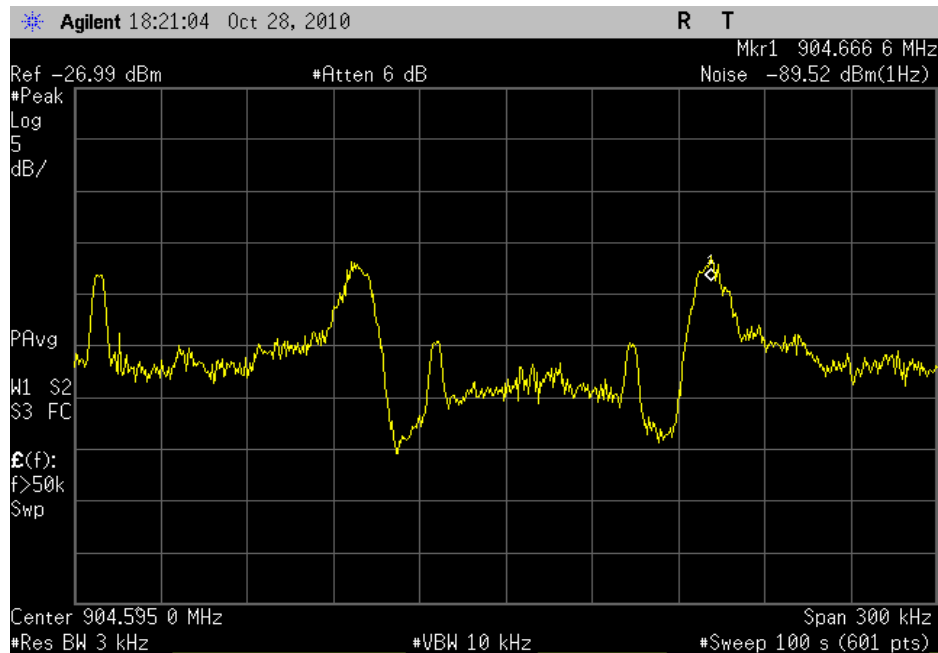
EMC

POWER SPECTRAL DENSITY

Low Channel

Result: Pass **Value:** -38.7 dBm/3kHz, EIRP **Limit:** <= 8 dBm/3kHz

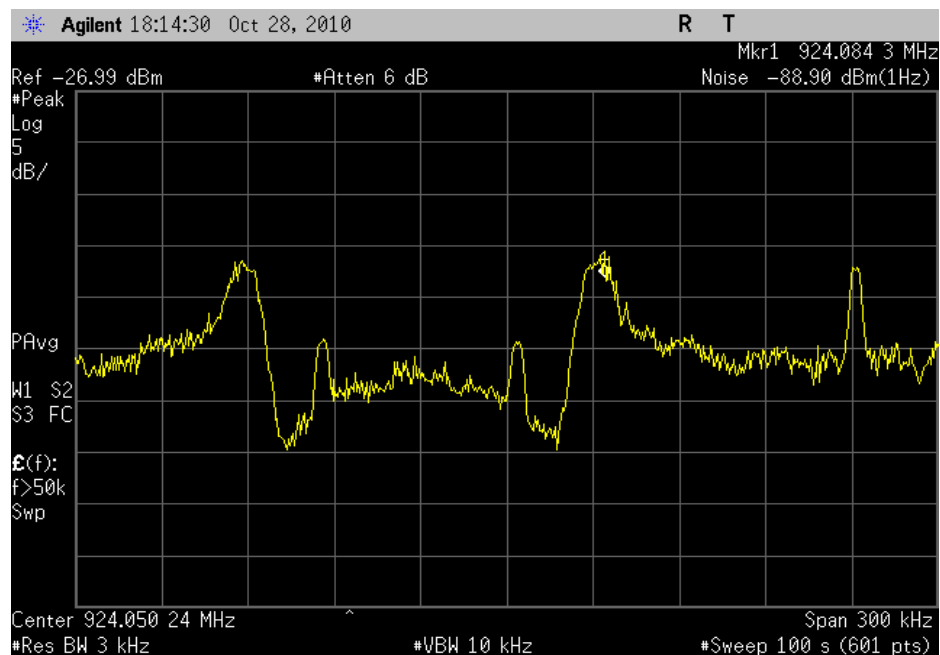
Meter Reading (dBm/Hz)	Meter Reading (dBm/3kHz)	Factor (dB)	Field Strength PSD (dBm/3kHz/meter)	PSD EIRP (dBm/3kHz) (EIRP)
-89.52	-54.52	4.1	-50.42	-38.7



Mid Channel

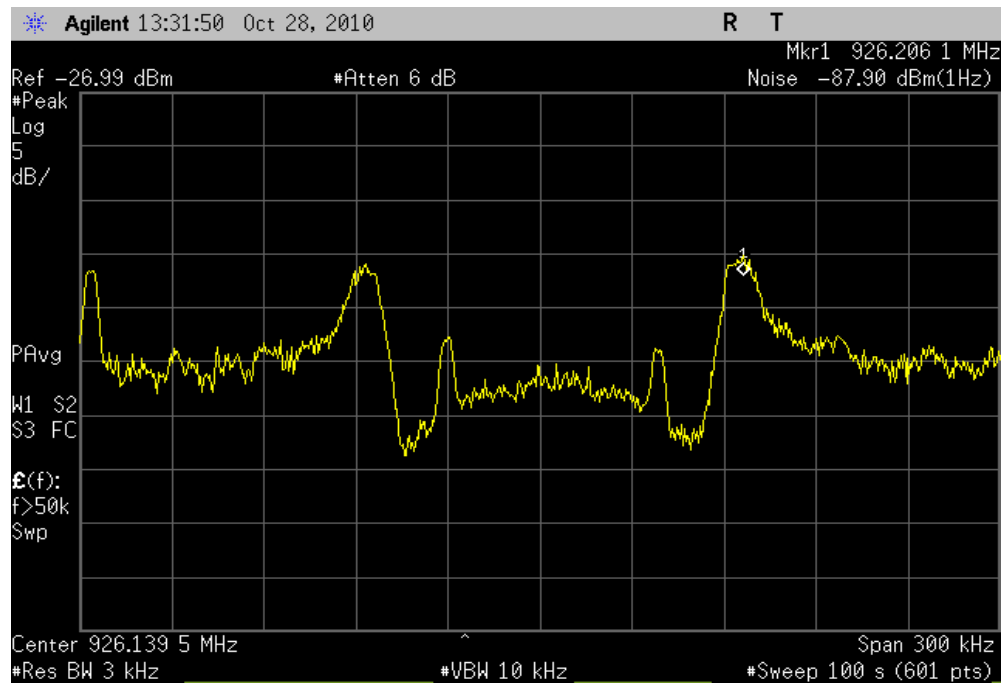
Result: Pass **Value:** -38.0 dBm/3kHz, EIRP **Limit:** <= 8 dBm/3kHz

Meter Reading (dBm/Hz)	Meter Reading (dBm/3kHz)	Factor (dB)	Field Strength PSD (dBm/3kHz/meter)	PSD EIRP (dBm/3kHz) (EIRP)
-88.9	-53.9	4.1	-49.8	-38.0



High Channel			
Result:	Pass	Value:	-48.8 dBm/3kHz, EIRP
		Limit:	<= 8 dBm/3kHz

Meter Reading (dBm/Hz)	Meter Reading (dBm/3kHz)	Factor (dB)	Field Strength PSD (dBm/3kHz/meter)	PSD EIRP (dBm/3kHz) (EIRP)
-87.9	-52.9	4.1	-48.8	-37.0



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 at 904 MHz
Transmitting at 924 MHz
Transmitting at 927 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency 1 GHz Stop Frequency 18 GHz

CLOCKS AND OSCILLATORS

904, 924, 927 MHz

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
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	12/21/2009	13
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	4/11/2010	13
Antenna, Horn	ETS	3160-07	AHX	NCR	0
OC11 Cables	N/A	12-18GHz RE Cables	OCS	4/11/2010	13
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	9/10/2009	13
Antenna, Horn	EMCO	3115	AHB	9/11/2009	24
OC11 Cables	N/A	1-8GHz RE Cables	OCR	3/19/2010	13
Spectrum Analyzer	Agilent	E4440A	AFA	2/9/2010	12

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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.

EUT:	Streamer	Work Order:	OEMW0008
Serial Number:	None	Date:	10/27/10
Customer:	OEM Worldwide	Temperature:	22.84
Attendees:	None	Humidity:	48%
Project:	None	Barometric Pres.:	1012.2
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC11

TEST SPECIFICATIONS

FCC 15.247:2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

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


None

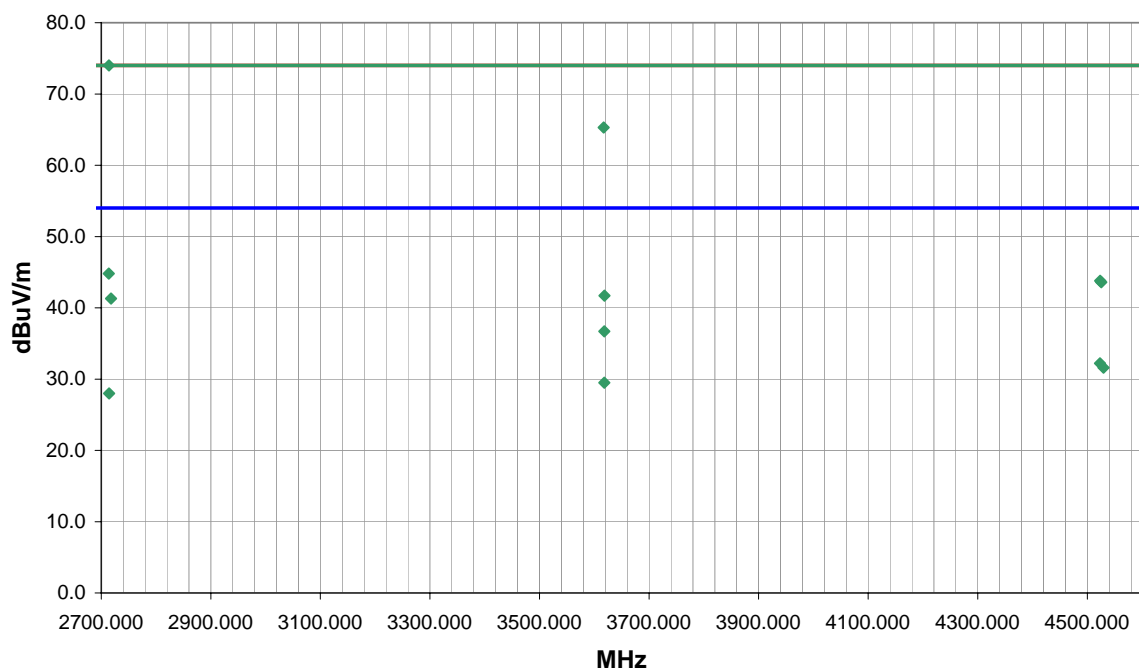
EUT OPERATING MODES

Transmitting at 904 MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3	Signature 
Configuration #	1	
Results	Pass	



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)
2714.000	77.2	-3.2	360.0	1.1	3.0	0.0	H-Horn	PK	0.0	74.0	74.0	0.0
3617.280	63.2	2.1	360.0	1.1	3.0	0.0	H-Horn	PK	0.0	65.3	74.0	-8.7
2713.862	48.0	-3.2	360.0	1.1	3.0	0.0	H-Horn	AV	0.0	44.8	54.0	-9.2
3618.315	34.6	2.1	360.0	1.1	3.0	0.0	H-Horn	AV	0.0	36.7	54.0	-17.3
4523.075	28.6	3.6	347.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.2	54.0	-21.8
4529.487	28.0	3.6	23.0	1.6	3.0	0.0	V-Horn	AV	0.0	31.6	54.0	-22.4
3618.307	27.4	2.1	58.0	1.0	3.0	0.0	V-Horn	AV	0.0	29.5	54.0	-24.5
2714.200	31.1	-3.1	146.0	1.0	3.0	0.0	V-Horn	AV	0.0	28.0	54.0	-26.0
4523.370	40.2	3.6	347.0	1.0	3.0	0.0	H-Horn	PK	0.0	43.8	74.0	-30.2
4525.470	40.0	3.6	23.0	1.6	3.0	0.0	V-Horn	PK	0.0	43.6	74.0	-30.4
3618.480	39.6	2.1	58.0	1.0	3.0	0.0	V-Horn	PK	0.0	41.7	74.0	-32.3
2717.850	44.5	-3.2	146.0	1.0	3.0	0.0	V-Horn	PK	0.0	41.3	74.0	-32.7

NORTHWEST										PSA 2008.07.21 EMI 2009.8.29			
EMC SPURIOUS RADIATED EMISSIONS DATA SHEET													
EUT: Streamer						Work Order: OEMW0008							
Serial Number: None						Date: 10/27/10							
Customer: OEM Worldwide						Temperature: 22.84							
Attendees: None						Humidity: 48%							
Project: None						Barometric Pres.: 1012.2							
Tested by: Jaemi Suh				Power: 120VAC/60Hz		Job Site: OC11							
TEST SPECIFICATIONS													
FCC 15.247:2010						Test Method ANSI C63.10:2009							
TEST PARAMETERS													
Antenna Height(s) (m)				1 - 4		Test Distance (m)				3			
COMMENTS													
None													
EUT OPERATING MODES													
Transmitting at 927 MHz													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		4		<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Signature</div> </div>									
Configuration #		1											
Results		Pass											
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)	
2782.300	76.2	-2.9	-1.0	1.0	3.0	0.0	H-Horn	PK	0.0	73.3	74.0	-0.7	
3708.800	64.0	2.7	360.0	1.0	3.0	0.0	H-Horn	PK	0.0	66.7	74.0	-7.3	
2778.407	46.0	-2.9	0.0	1.0	3.0	0.0	H-Horn	AV	0.0	43.1	54.0	-10.9	
3704.622	40.1	2.7	360.0	1.0	3.0	0.0	H-Horn	AV	0.0	42.8	54.0	-11.2	
7405.968	28.9	10.2	85.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.1	54.0	-14.9	
7408.414	28.9	10.2	110.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.1	54.0	-14.9	
4631.444	29.6	3.6	5.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.2	54.0	-20.8	
7407.440	42.1	10.2	110.0	1.0	3.0	0.0	V-Horn	PK	0.0	52.3	74.0	-21.7	
4631.633	28.3	3.6	139.0	1.0	3.0	0.0	V-Horn	AV	0.0	31.9	54.0	-22.1	
7406.907	40.3	10.2	85.0	1.0	3.0	0.0	H-Horn	PK	0.0	50.5	74.0	-23.5	
3704.764	27.1	2.7	182.0	3.0	3.0	0.0	V-Horn	AV	0.0	29.8	54.0	-24.2	
4631.020	44.4	3.6	5.0	1.0	3.0	0.0	H-Horn	PK	0.0	48.0	74.0	-26.0	
2778.687	29.4	-2.9	227.0	2.4	3.0	0.0	V-Horn	AV	0.0	26.5	54.0	-27.5	
4633.873	40.2	3.6	139.0	1.0	3.0	0.0	V-Horn	PK	0.0	43.8	74.0	-30.2	
3707.133	40.6	2.7	182.0	3.0	3.0	0.0	V-Horn	PK	0.0	43.3	74.0	-30.7	
2775.675	41.5	-2.9	227.0	2.4	3.0	0.0	V-Horn	PK	0.0	38.6	74.0	-35.4	

NORTHWEST										PSA 2008.07.21 EMI 2009.8.29			
EMC SPURIOUS RADIATED EMISSIONS DATA SHEET													
EUT: Streamer								Work Order: OEMW0008					
Serial Number: None								Date: 10/27/10					
Customer: OEM Worldwide								Temperature: 22.84					
Attendees: None								Humidity: 48%					
Project: None								Barometric Pres.: 1012.2					
Tested by: Jaemi Suh				Power: 120VAC/60Hz				Job Site: OC11					
TEST SPECIFICATIONS													
FCC 15.247:2010								Test Method ANSI C63.10:2009					
TEST PARAMETERS													
Antenna Height(s) (m)				1 - 4				Test Distance (m)				3	
COMMENTS													
None													
EUT OPERATING MODES													
Transmitting at 924 MHz													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		5		<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Signature</div> </div>									
Configuration #		1											
Results		Pass											
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)	
2769.217	75.6	-2.9	0.0	1.0	3.0	0.0	H-Horn	PK	0.0	72.7	74.0	-1.3	
3696.200	63.9	2.7	0.0	1.0	3.0	0.0	H-Horn	PK	0.0	66.6	74.0	-7.4	
3696.200	39.8	2.7	0.0	1.0	3.0	0.0	H-Horn	AV	0.0	42.5	54.0	-11.5	
2772.017	44.8	-2.9	0.0	1.0	3.0	0.0	H-Horn	AV	0.0	41.9	54.0	-12.1	
7385.560	29.0	10.2	141.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.2	54.0	-14.8	
7389.280	29.0	10.1	345.0	3.1	3.0	0.0	V-Horn	AV	0.0	39.1	54.0	-14.9	
4620.130	30.2	3.6	6.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.8	54.0	-20.2	
4619.317	28.3	3.6	217.0	1.0	3.0	0.0	V-Horn	AV	0.0	31.9	54.0	-22.1	
7385.440	41.3	10.2	345.0	3.1	3.0	0.0	V-Horn	PK	0.0	51.5	74.0	-22.5	
7387.293	40.5	10.2	141.0	1.0	3.0	0.0	H-Horn	PK	0.0	50.7	74.0	-23.3	
3696.707	27.5	2.6	360.0	1.4	3.0	0.0	V-Horn	AV	0.0	30.1	54.0	-23.9	
4620.650	44.1	3.6	6.0	1.0	3.0	0.0	H-Horn	PK	0.0	47.7	74.0	-26.3	
2772.123	29.6	-2.9	138.0	1.4	3.0	0.0	V-Horn	AV	0.0	26.7	54.0	-27.3	
4615.143	40.4	3.6	217.0	1.0	3.0	0.0	V-Horn	PK	0.0	44.0	74.0	-30.0	
3694.013	39.4	2.7	360.0	1.4	3.0	0.0	V-Horn	PK	0.0	42.1	74.0	-31.9	
2769.563	41.5	-2.9	138.0	1.4	3.0	0.0	V-Horn	PK	0.0	38.6	74.0	-35.4	

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 at 926 MHz

Transmitting at 904 MHz

Transmitting at 924 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

OEMW0008 - 1

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-24-BNC	LIB	5/5/2010	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFP	3/8/2010	13 mo
OC06 Cables	N/A	CE Cables	OCM	3/8/2010	13 mo
Receiver	Rohde & Schwarz	ESCI	ARF	3/30/2010	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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

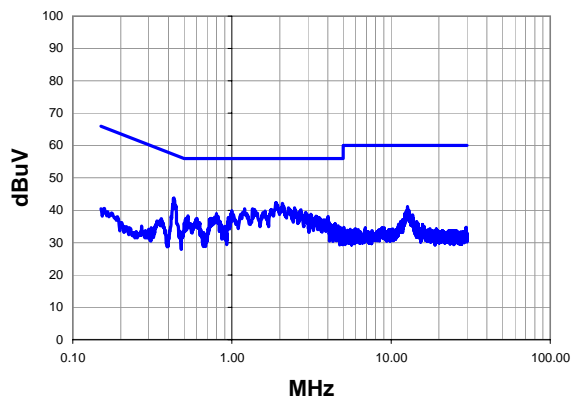
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 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

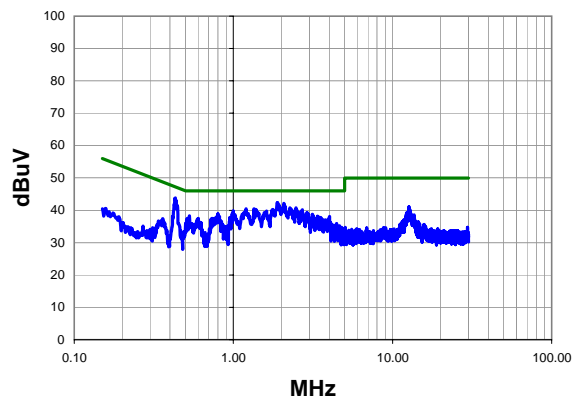
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

Work Order:	OEMW0008	Date:	10/28/10				
Project:	None	Temperature:	22.94				
Job Site:	OC06	Humidity:	48.29				
Serial Number:	None	Barometric Pres.:	1012.2				
EUT:	200						
Configuration:	1 - Basic Configuration						
Customer:	OEM Worldwide						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting at 924 MHz						
Deviations:	None						
Comments:	None						
Test Specifications FCC 15.207:2010			Test Method ANSI C63.10:2009				
Run #	1	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

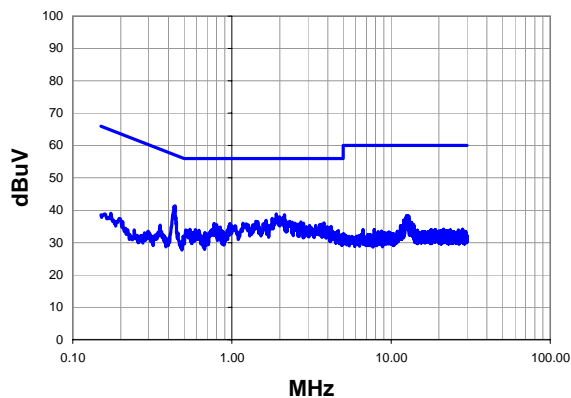
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.432	23.7	20.1	43.8	57.2	-13.4
1.880	22.2	20.1	42.3	56.0	-13.7
2.072	22.0	20.1	42.1	56.0	-13.9
2.264	20.7	20.1	40.8	56.0	-15.2
2.472	20.6	20.1	40.7	56.0	-15.3
1.200	20.4	20.1	40.5	56.0	-15.5
1.352	20.4	20.1	40.5	56.0	-15.5
2.712	20.0	20.2	40.2	56.0	-15.8
1.000	19.7	20.1	39.8	56.0	-16.2
1.616	19.7	20.1	39.8	56.0	-16.2
2.896	19.1	20.2	39.3	56.0	-16.7
0.799	18.8	20.1	38.9	56.0	-17.1
3.136	18.6	20.2	38.8	56.0	-17.2
0.529	18.2	20.1	38.3	56.0	-17.7
3.376	18.0	20.2	38.2	56.0	-17.8
4.016	17.8	20.3	38.1	56.0	-17.9
0.951	17.7	20.1	37.8	56.0	-18.2
3.520	17.6	20.2	37.8	56.0	-18.2
0.512	17.4	20.1	37.5	56.0	-18.5
0.602	17.4	20.1	37.5	56.0	-18.5

Peak Data - vs - Average Limit

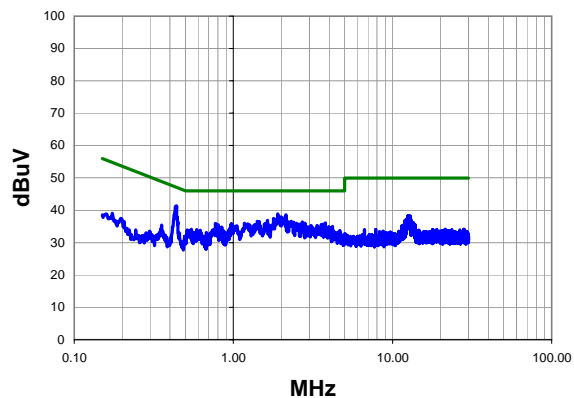
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.432	23.7	20.1	43.8	47.2	-3.4
1.880	22.2	20.1	42.3	46.0	-3.7
2.072	22.0	20.1	42.1	46.0	-3.9
2.264	20.7	20.1	40.8	46.0	-5.2
2.472	20.6	20.1	40.7	46.0	-5.3
1.200	20.4	20.1	40.5	46.0	-5.5
1.352	20.4	20.1	40.5	46.0	-5.5
2.712	20.0	20.2	40.2	46.0	-5.8
1.000	19.7	20.1	39.8	46.0	-6.2
1.616	19.7	20.1	39.8	46.0	-6.2
2.896	19.1	20.2	39.3	46.0	-6.7
0.799	18.8	20.1	38.9	46.0	-7.1
3.136	18.6	20.2	38.8	46.0	-7.2
0.529	18.2	20.1	38.3	46.0	-7.7
3.376	18.0	20.2	38.2	46.0	-7.8
4.016	17.8	20.3	38.1	46.0	-7.9
0.951	17.7	20.1	37.8	46.0	-8.2
3.520	17.6	20.2	37.8	46.0	-8.2
0.512	17.4	20.1	37.5	46.0	-8.5
0.602	17.4	20.1	37.5	46.0	-8.5

Work Order:	OEMW0008	Date:	10/28/10		
Project:	None	Temperature:	22.94		
Job Site:	OC06	Humidity:	48.29		
Serial Number:	None	Barometric Pres.:	1012.2		
EUT:	200				
Configuration:	1 - Basic Configuration				
Customer:	OEM Worldwide				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 924 MHz				
Deviations:	None				
Comments:	None				
Test Specifications FCC 15.207:2010			Test Method ANSI C63.10:2009		
Run #	2	Line:	Neutral	Ext. Attenuation:	20
Results				Pass	

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

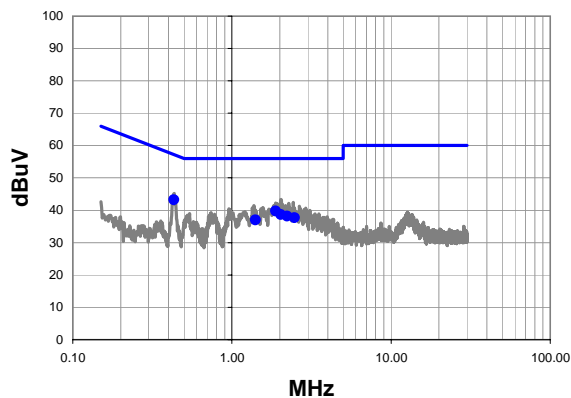
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.439	21.2	20.1	41.3	57.1	-15.8
1.896	18.8	20.1	38.9	56.0	-17.1
2.136	18.5	20.1	38.6	56.0	-17.4
1.792	17.4	20.1	37.5	56.0	-18.5
1.640	16.8	20.1	36.9	56.0	-19.1
2.176	16.7	20.1	36.8	56.0	-19.2
1.416	16.5	20.1	36.6	56.0	-19.4
2.304	16.5	20.1	36.6	56.0	-19.4
2.712	16.2	20.2	36.4	56.0	-19.6
2.400	16.2	20.1	36.3	56.0	-19.7
3.784	15.9	20.2	36.1	56.0	-19.9
2.488	15.9	20.1	36.0	56.0	-20.0
1.176	15.9	20.1	36.0	56.0	-20.0
2.816	15.8	20.2	36.0	56.0	-20.0
0.772	15.8	20.1	35.9	56.0	-20.1
0.969	15.8	20.1	35.9	56.0	-20.1
3.672	15.5	20.2	35.7	56.0	-20.3
0.782	15.6	20.1	35.7	56.0	-20.3
2.624	15.5	20.2	35.7	56.0	-20.3
3.560	15.4	20.2	35.6	56.0	-20.4

Peak Data - vs - Average Limit

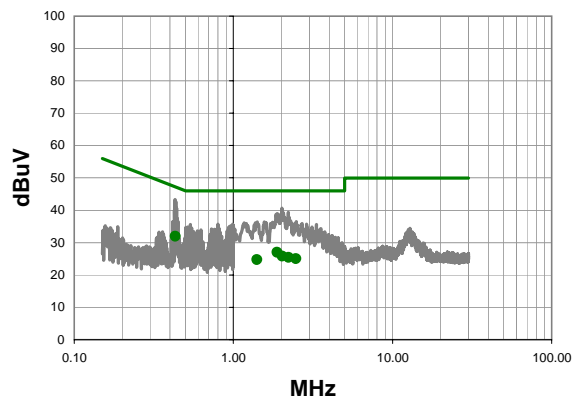
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.439	21.2	20.1	41.3	47.1	-5.8
1.896	18.8	20.1	38.9	46.0	-7.1
2.136	18.5	20.1	38.6	46.0	-7.4
1.792	17.4	20.1	37.5	46.0	-8.5
1.640	16.8	20.1	36.9	46.0	-9.1
2.176	16.7	20.1	36.8	46.0	-9.2
1.416	16.5	20.1	36.6	46.0	-9.4
2.304	16.5	20.1	36.6	46.0	-9.4
2.712	16.2	20.2	36.4	46.0	-9.6
2.400	16.2	20.1	36.3	46.0	-9.7
3.784	15.9	20.2	36.1	46.0	-9.9
2.488	15.9	20.1	36.0	46.0	-10.0
1.176	15.9	20.1	36.0	46.0	-10.0
2.816	15.8	20.2	36.0	46.0	-10.0
0.772	15.8	20.1	35.9	46.0	-10.1
0.969	15.8	20.1	35.9	46.0	-10.1
3.672	15.5	20.2	35.7	46.0	-10.3
0.782	15.6	20.1	35.7	46.0	-10.3
2.624	15.5	20.2	35.7	46.0	-10.3
3.560	15.4	20.2	35.6	46.0	-10.4

Work Order:	OEMW0008	Date:	10/28/10		
Project:	None	Temperature:	22.94		
Job Site:	OC06	Humidity:	48.29		
Serial Number:	None	Barometric Pres.:	1012.2		
EUT:	200				
Configuration:	1 - Basic Configuration				
Customer:	OEM Worldwide				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 904 MHz				
Deviations:	None				
Comments:	None				
Test Specifications FCC 15.207:2010				Test Method ANSI C63.10:2009	
Run #	3	Line:	High Line	Ext. Attenuation:	20
Results				Pass	

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

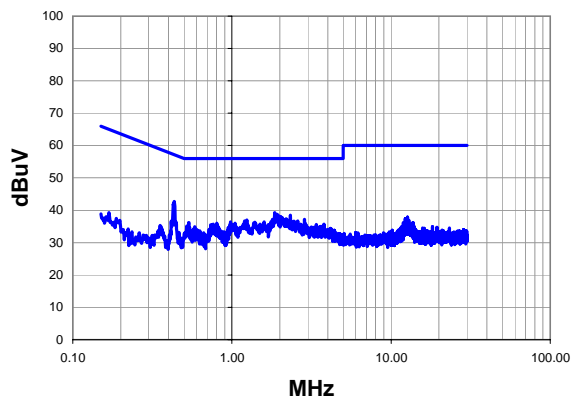
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.431	23.1	20.1	43.2	57.2	-14.0
1.880	19.7	20.1	39.8	56.0	-16.2
2.024	18.6	20.1	38.7	56.0	-17.3
2.228	18.1	20.1	38.2	56.0	-17.8
2.472	17.5	20.1	37.6	56.0	-18.4
1.408	16.9	20.1	37.0	56.0	-19.0

Average Data - vs - Average Limit

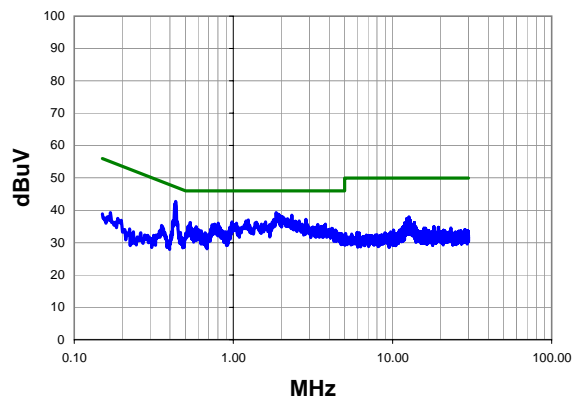
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.431	11.8	20.1	31.9	47.2	-15.3
1.880	6.9	20.1	27.0	46.0	-19.0
2.024	5.7	20.1	25.8	46.0	-20.2
2.228	5.3	20.1	25.4	46.0	-20.6
2.472	4.9	20.1	25.0	46.0	-21.0
1.408	4.6	20.1	24.7	46.0	-21.3

Work Order:	OEMW0008	Date:	10/28/10		
Project:	None	Temperature:	22.94		
Job Site:	OC06	Humidity:	48.29		
Serial Number:	None	Barometric Pres.:	1012.2		
EUT:	200				
Configuration:	1 - Basic Configuration				
Customer:	OEM Worldwide				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 904 MHz				
Deviations:	None				
Comments:	None				
Test Specifications FCC 15.207:2010				Test Method ANSI C63.10:2009	
Run #	4	Line:	Neutral	Ext. Attenuation:	20
Results				Pass	

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

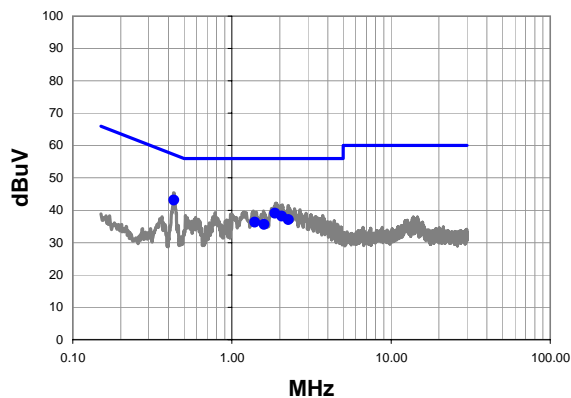
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.434	22.6	20.1	42.7	57.2	-14.5
1.856	19.2	20.1	39.3	56.0	-16.7
2.328	18.4	20.1	38.5	56.0	-17.5
2.032	18.0	20.1	38.1	56.0	-17.9
2.856	17.0	20.2	37.2	56.0	-18.8
1.240	16.9	20.1	37.0	56.0	-19.0
2.592	16.5	20.2	36.7	56.0	-19.3
0.978	16.3	20.1	36.4	56.0	-19.6
1.592	16.3	20.1	36.4	56.0	-19.6
1.392	16.2	20.1	36.3	56.0	-19.7
0.534	16.1	20.1	36.2	56.0	-19.8
0.804	15.9	20.1	36.0	56.0	-20.0
3.784	15.5	20.2	35.7	56.0	-20.3
0.764	15.6	20.1	35.7	56.0	-20.3
3.392	15.4	20.2	35.6	56.0	-20.4
0.519	15.0	20.1	35.1	56.0	-20.9
0.815	15.0	20.1	35.1	56.0	-20.9
3.608	14.8	20.2	35.0	56.0	-21.0
0.584	14.8	20.1	34.9	56.0	-21.1
3.168	14.6	20.2	34.8	56.0	-21.2

Peak Data - vs - Average Limit

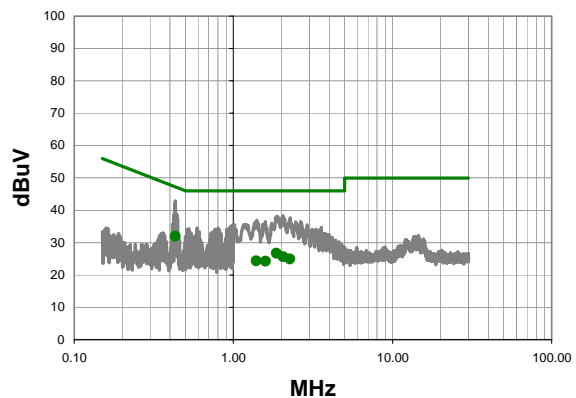
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.434	22.6	20.1	42.7	47.2	-4.5
1.856	19.2	20.1	39.3	46.0	-6.7
2.328	18.4	20.1	38.5	46.0	-7.5
2.032	18.0	20.1	38.1	46.0	-7.9
2.856	17.0	20.2	37.2	46.0	-8.8
1.240	16.9	20.1	37.0	46.0	-9.0
2.592	16.5	20.2	36.7	46.0	-9.3
0.978	16.3	20.1	36.4	46.0	-9.6
1.592	16.3	20.1	36.4	46.0	-9.6
1.392	16.2	20.1	36.3	46.0	-9.7
0.534	16.1	20.1	36.2	46.0	-9.8
0.804	15.9	20.1	36.0	46.0	-10.0
3.784	15.5	20.2	35.7	46.0	-10.3
0.764	15.6	20.1	35.7	46.0	-10.3
3.392	15.4	20.2	35.6	46.0	-10.4
0.519	15.0	20.1	35.1	46.0	-10.9
0.815	15.0	20.1	35.1	46.0	-10.9
3.608	14.8	20.2	35.0	46.0	-11.0
0.584	14.8	20.1	34.9	46.0	-11.1
3.168	14.6	20.2	34.8	46.0	-11.2

Work Order:	OEMW0008	Date:	10/28/10		
Project:	None	Temperature:	22.94		
Job Site:	OC06	Humidity:	48.29		
Serial Number:	None	Barometric Pres.:	1012.2		
EUT:	200				
Configuration:	1 - Basic Configuration				
Customer:	OEM Worldwide				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 926 MHz				
Deviations:	None				
Comments:	None				
Test Specifications FCC 15.207:2010				Test Method ANSI C63.10:2009	
Run #	5	Line:	High Line	Ext. Attenuation:	20
Results				Pass	

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

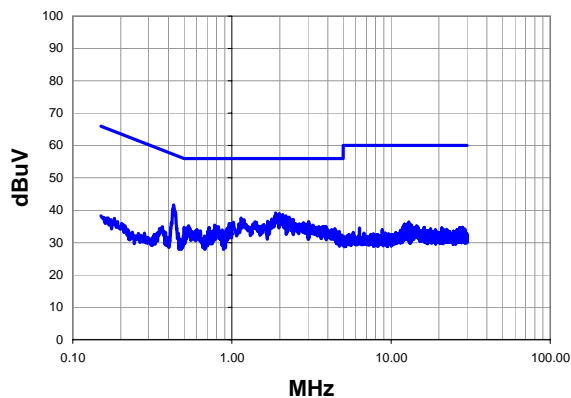
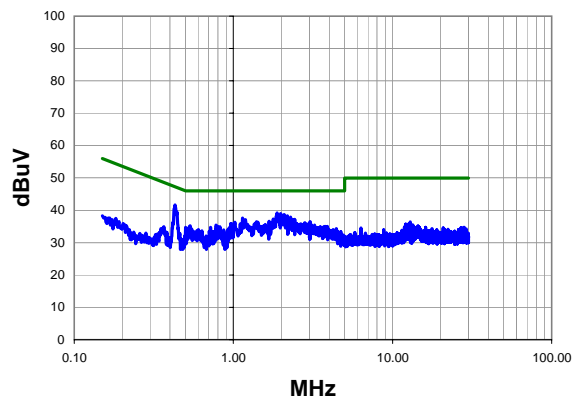
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.432	23.0	20.1	43.1	57.2	-14.1
1.868	19.0	20.1	39.1	56.0	-16.9
2.060	18.1	20.1	38.2	56.0	-17.8
2.264	17.0	20.1	37.1	56.0	-18.9
1.396	16.2	20.1	36.3	56.0	-19.7
1.596	15.5	20.1	35.6	56.0	-20.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.432	11.8	20.1	31.9	47.2	-15.3
1.868	6.6	20.1	26.7	46.0	-19.3
2.060	5.5	20.1	25.6	46.0	-20.4
2.264	4.8	20.1	24.9	46.0	-21.1
1.396	4.2	20.1	24.3	46.0	-21.7
1.596	4.1	20.1	24.2	46.0	-21.8

EMC**AC POWERLINE CONDUCTED EMISSIONS**

Work Order:	OEMW0008	Date:	10/28/10		
Project:	None	Temperature:	22.94		
Job Site:	OC06	Humidity:	48.29		
Serial Number:	None	Barometric Pres.:	1012.2		
EUT:	200				
Configuration:	1 - Basic Configuration				
Customer:	OEM Worldwide				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 926 MHz				
Deviations:	None				
Comments:	None				
Test Specifications FCC 15.207:2010				Test Method ANSI C63.10:2009	
Run #	6	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)
0.431	21.5	20.1	41.6	57.2	-15.6
1.880	19.1	20.1	39.2	56.0	-16.8
1.984	18.9	20.1	39.0	56.0	-17.0
2.080	18.6	20.1	38.7	56.0	-17.3
2.184	18.2	20.1	38.3	56.0	-17.7
2.288	17.8	20.1	37.9	56.0	-18.1
1.144	17.5	20.1	37.6	56.0	-18.4
2.432	17.1	20.1	37.2	56.0	-18.8
2.376	17.0	20.1	37.1	56.0	-18.9
2.208	16.8	20.1	36.9	56.0	-19.1
1.680	16.5	20.1	36.6	56.0	-19.4
3.040	16.3	20.2	36.5	56.0	-19.5
1.392	16.3	20.1	36.4	56.0	-19.6
1.024	16.2	20.1	36.3	56.0	-19.7
2.808	15.9	20.2	36.1	56.0	-19.9
0.963	15.7	20.1	35.8	56.0	-20.2
0.991	15.7	20.1	35.8	56.0	-20.2
1.584	15.5	20.1	35.6	56.0	-20.4
3.088	15.3	20.2	35.5	56.0	-20.5
0.779	15.3	20.1	35.4	56.0	-20.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.431	21.5	20.1	41.6	47.2	-5.6
1.880	19.1	20.1	39.2	46.0	-6.8
1.984	18.9	20.1	39.0	46.0	-7.0
2.080	18.6	20.1	38.7	46.0	-7.3
2.184	18.2	20.1	38.3	46.0	-7.7
2.288	17.8	20.1	37.9	46.0	-8.1
1.144	17.5	20.1	37.6	46.0	-8.4
2.432	17.1	20.1	37.2	46.0	-8.8
2.376	17.0	20.1	37.1	46.0	-8.9
2.208	16.8	20.1	36.9	46.0	-9.1
1.680	16.5	20.1	36.6	46.0	-9.4
3.040	16.3	20.2	36.5	46.0	-9.5
1.392	16.3	20.1	36.4	46.0	-9.6
1.024	16.2	20.1	36.3	46.0	-9.7
2.808	15.9	20.2	36.1	46.0	-9.9
0.963	15.7	20.1	35.8	46.0	-10.2
0.991	15.7	20.1	35.8	46.0	-10.2
1.584	15.5	20.1	35.6	46.0	-10.4
3.088	15.3	20.2	35.5	46.0	-10.5
0.779	15.3	20.1	35.4	46.0	-10.6