GSL Solutions, Inc.

INTPV01

Report #: GSLS0002.1

Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: December 13, 2011
GSL Solutions, Inc.
Model: INTPV01

Emissions

Test Description	Specification	Test Method	Pass/Fail
Field Strength of Fundamental	FCC 15.225:2011	ANSI C63.10:2009	**Pass**
Frequency Stability	FCC 15.225:2011	ANSI C63.10:2009	**Pass**
Field Strength of Emissions	FCC 15.225:2011	ANSI C63.10:2009	**Pass**
AC Powerline Conducted Emissions	FCC 15.225:2011	ANSI C63.10:2009	**Pass**

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager

NVLAP Lab Code: 200630-0

Test Facility

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

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

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

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

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

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

Revision History

Revision Number	Description	Date	Page Number
00	None		

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 National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. 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.

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.

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).

Accreditations and Authorizations

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-3265, 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).

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, Brooklyn Park: US0175)*

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/

Explanation of NWEMC Performance Criteria

How important is it to understand performance criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. As the responsible party (manufacturer, importer, etc) it is your responsibility to take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity. As the responsible party it makes sense that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria is used when performing immunity or susceptibility tests:

Performance Criteria 1:

- The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.
- In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.
- In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

Performance Criteria 4:

- The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.
- In most cases there is no specific criterion to compare this to; it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.

Locations

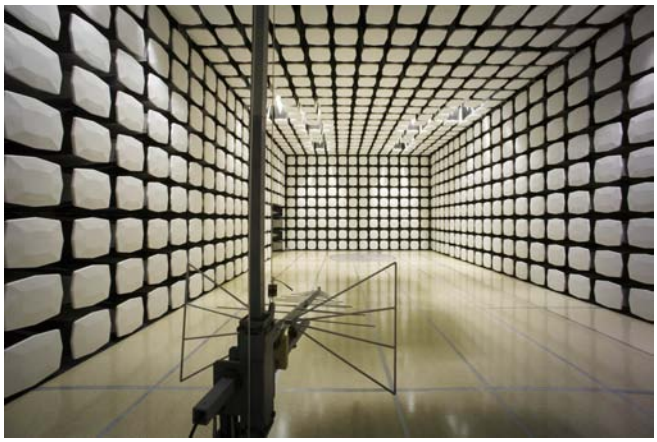
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

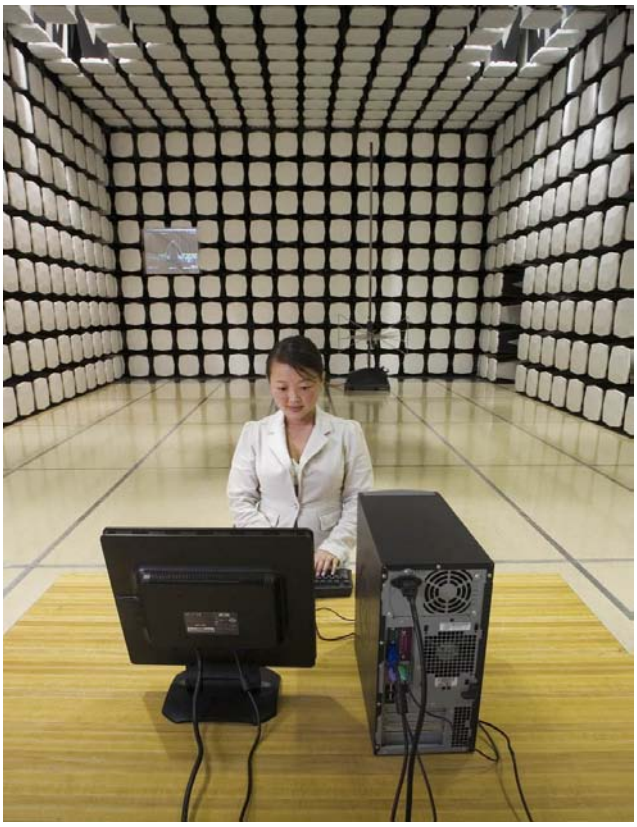
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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





Product Description

Client and Equipment Under Test (EUT) Information

Company Name:	GSL Solutions, Inc.
Address:	2414 SE 125th Avenue
City, State, Zip:	Vancouver, WA 98683
Test Requested By:	Steve Garrett
Model:	INTPV01
First Date of Test:	October 18, 2011
Last Date of Test:	December 13, 2011
Receipt Date of Samples:	October 17, 2011
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
Intelligent storage and retrieval system containing a 13.56 MHz radio.

Testing Objective:
RFID seeking TCB certification under FCC 15.225

Configurations

Configuration 1 GSLS0002

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Intelligent storage and retrieval system	GSL Solutions, Inc.	INTPV01	None
Antenna	GSL Solutions, Inc.	Unknown	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Power Supply	GlobTek, Inc.	GTM21089-1512-T3	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	2.1m	No	AC Mains	Power Supply
DC Power	No	1.8m	No	Power Supply	Intelligent storage and retrieval system
Ethernet	No	3.0m	No	Intelligent storage and retrieval system	Unterminated
Antenna Coax	Yes	1.8m	No	Intelligent storage and retrieval system	Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration 5 GSLS0002

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Intelligent storage and retrieval system	GSL Solutions, Inc.	INTPV01	None
Antenna	GSL Solutions, Inc.	Unknown	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Power Supply	GlobTek, Inc.	GTM21089-1512-T3	None

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Hub	LinkSys	EEHUB16	S41001603

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	2.1m	No	AC Mains	Power Supply
DC Power	No	1.8m	No	Power Supply	Intelligent storage and retrieval system
Ethernet	No	3.0m	No	Intelligent storage and retrieval system	Unterminated
Antenna Coax	Yes	1.8m	No	Intelligent storage and retrieval system	Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Modifications

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	10/18/2011	Frequency Stability	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	12/8/2011	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	12/8/2011	Field Strength of Spurious Emissions Above 30MHz	Modified from delivered configuration.	Added a larger ferrite (Steward 28A3851-0A2)with three passes on the DC lead and a ferrite on the LAN cable (Customer had this ferrite with him). Modification authorized by Steve.	EUT remained at Northwest EMC following the test.
4	12/13/2011	Field Strength of Fundamental	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	12/13/2011	Field Strength of Spurious Emissions below 30 MHz	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Field Strength of Fundamental

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

MODES OF OPERATION

Continuous Tx

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

GSLS0002 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	490 kHz	Stop Frequency	30 MHz

CLOCKS AND OSCILLATORS

13.561MHz

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	E4443A	AFB	1/24/2011	12 mo
Antenna, Loop	EMCO	6502	AOA	6/28/2011	24 mo
EV11 Cables	N/A	3m Test Distance Cables	EVM	3/17/2011	12 mo
EV11 Cables	N/A	10m Test Distance Cables	EVL	8/3/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth 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

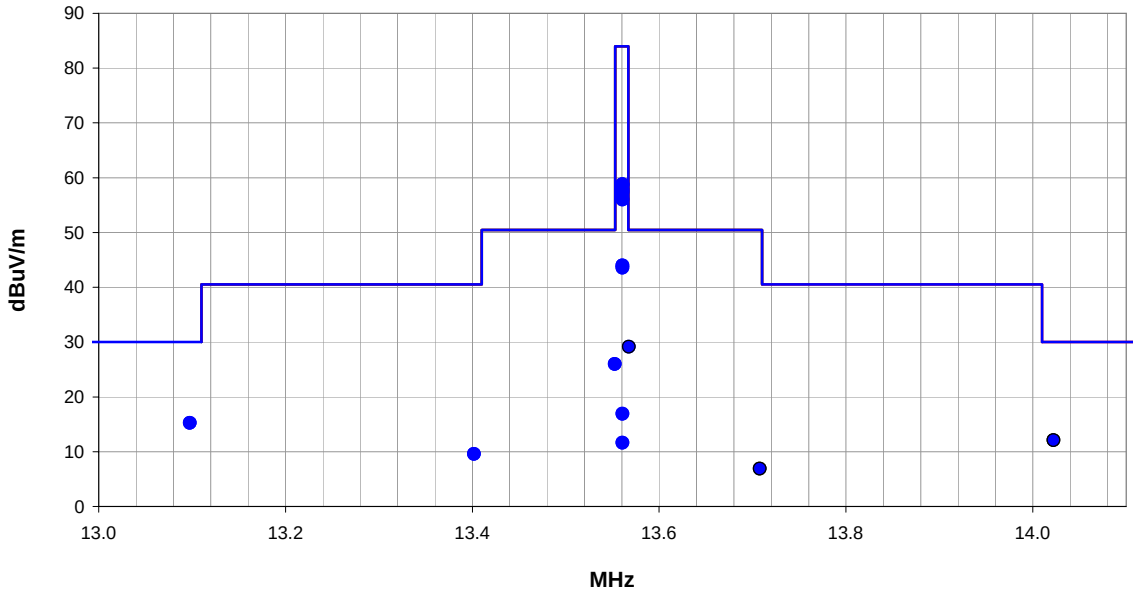
The antenna to be used with the EUT was tested. The EUT was transmitting and receiving while set at its single channel. While scanning, emissons from the EUT were maximized by rotating the EUT and adjusting the measurement antenna height and orientation in 3 orthogonal planes (per ANSI C63.10:2009). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

Field Strength of Fundamental

Work Order:	GSLS0002	**Date:**	12/13/11		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	EV11	**Humidity:**	26.3% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1021 mbar	**Tested by:**	Ethan Schoonover
EUT:	INTPV01				
Configuration:	1				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Tx				
Deviations:	None				
Comments:	EUT Horz				

Test Specifications	**Test Method**
FCC 15.225:2011	ANSI C63.10:2009

Run #	11	**Test Distance (m)**	3 & 10	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
13.098	32.4	11.3	1.0	242.0	3.0	0.0	Par/Perp	QP	28.5	15.2	30.0	-14.8
13.098	17.5	11.3	1.0	280.0	10.0	0.0	Par/Perp	QP	13.6	15.2	30.0	-14.8
13.402	53.9	11.3	1.0	272.0	3.0	0.0	Par/Perp	QP	55.7	9.6	40.5	-30.9
13.402	24.8	11.3	1.0	310.0	10.0	0.0	Par/Perp	QP	26.6	9.6	40.5	-30.9
13.553	68.2	11.3	1.2	87.0	3.0	0.0	Par/Perp	QP	53.5	26.0	50.5	-24.5
13.553	40.2	11.3	1.0	92.0	10.0	0.0	Par/Perp	QP	25.5	26.0	50.5	-24.5
13.561	88.0	11.3	1.0	91.0	3.0	0.0	Par/Perp	QP	82.4	16.9	84.0	-67.1
13.561	44.9	11.3	1.0	92.0	10.0	0.0	Par/Perp	QP	39.3	16.9	84.0	-67.1
13.561	83.1	11.3	2.2	90.0	3.0	0.0	Perp/Par	QP	82.8	11.6	84.0	-72.4
13.561	39.8	11.3	1.2	54.0	10.0	0.0	Perp/Par	QP	39.5	11.6	84.0	-72.4
13.561	55.6	11.3	2.4	57.0	3.0	0.0	Perp/Perp	QP	22.9	44.0	84.0	-40.0
13.561	43.6	11.3	1.2	-5.0	10.0	0.0	Perp/Perp	QP	10.9	44.0	84.0	-40.0
13.561	81.9	11.3	1.0	160.0	3.0	0.0	Perp/Perp	QP	34.6	58.6	84.0	-25.4
13.561	63.8	11.3	1.0	168.0	10.0	0.0	Perp/Perp	QP	16.5	58.6	84.0	-25.4
13.561	73.0	11.3	2.5	91.0	3.0	0.0	Par/Perp	QP	28.3	56.0	84.0	-28.0
13.561	58.2	11.3	1.0	89.0	10.0	0.0	Par/Perp	QP	13.5	56.0	84.0	-28.0
13.561	82.9	11.3	2.2	0.0	3.0	0.0	Perp/Par	QP	36.9	57.3	84.0	-26.7
13.561	63.6	11.3	1.8	365.0	10.0	0.0	Perp/Par	QP	17.6	57.3	84.0	-26.7
13.561	88.1	11.3	1.0	96.0	3.0	0.0	Par/Perp	QP	55.8	43.6	84.0	-40.4
13.561	58.9	11.3	1.0	110.0	10.0	0.0	Par/Perp	QP	26.6	43.6	84.0	-40.4

Distance Adjustment Factor for Emissions below 30 MHz

Method: Per 47 CFR 15.31(f)(2), the data was extrapolated based upon a the measured fall-off (at each frequency / polarity).

EUT: INTPV01
S/N: None
Date:

Frequency (MHz)	EUT and Loop Antenna Polarity	Test Distance (meters)	Adjusted Level (dBuV/m)	Fall-Off from 3 to 10 m (dB)	Extrapolation Factor for Specification Limit (dB / decade)	Test Distance of Spec. Limit (meters)	Distance Adjustment Factor (dB)
13.098	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	32.4	14.9	28.5	30.0	28.5
13.098	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	17.5				13.6
13.402	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	53.9	29.1	55.7	30.0	55.7
13.402	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	24.8				26.6
13.553	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	68.2	28.0	53.5	30.0	53.5
13.553	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	40.2				25.5
13.561	EUT Horz. Antenna Par to EUT, Perp to Ground.	3	88.0	43.1	82.4	30.0	82.4
13.561	EUT Horz. Antenna Par to EUT, Perp to Ground.	10	44.9				39.3
13.561	EUT Horz. Antenna Perp to EUT, Par to Ground.	3	83.1	43.3	82.8	30.0	82.8
13.561	EUT Horz. Antenna Perp to EUT, Par to Ground.	10	39.8				39.5
13.561	EUT Horz. Antenna Perp to EUT, Perp to Ground.	3	55.6	12.0	22.9	30.0	22.9
13.561	EUT Horz. Antenna Perp to EUT, Perp to Ground.	10	43.6				10.9
13.561	EUT On Edge. Antenna Perp to EUT, Perp to Ground.	3	81.9	18.1	34.6	30.0	34.6
13.561	EUT On Edge. Antenna Perp to EUT, Perp to Ground.	10	63.8				16.5
13.561	EUT On Edge. Antenna Par to EUT, Perp to Ground.	3	73.0	14.8	28.3	30.0	28.3
13.561	EUT On Edge. Antenna Par to EUT, Perp to Ground.	10	58.2				13.5
13.561	EUT On Edge. Antenna Perp to EUT, Par to Ground.	3	82.9	19.3	36.9	30.0	36.9
13.561	EUT On Edge. Antenna Perp to EUT, Par to Ground.	10	63.6				17.6
13.561	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	88.1	29.2	55.8	30.0	55.8
13.561	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	58.9				26.6
13.561	EUT Vert. Antenna Perp to EUT, Par to Ground.	3	78.8	16.9	32.3	30.0	32.3
13.561	EUT Vert. Antenna Perp to EUT, Par to Ground.	10	61.9				15.4
13.561	EUT Vert. Antenna Perp to EUT, Perp to Ground.	3	82.1	18.1	34.6	30.0	34.6
13.561	EUT Vert. Antenna Perp to EUT, Perp to Ground.	10	64.0				16.5
13.568	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	73.1	28.9	55.3	30.0	55.3
13.568	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	44.2				26.4
13.708	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	42.4	24.5	46.9	30.0	46.9
13.708	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	17.9				22.4
14.022	EUT Vert. Antenna Par to EUT, Perp to Ground.	3	34.8	17.8	34.0	30.0	34.0
14.022	EUT Vert. Antenna Par to EUT, Perp to Ground.	10	17.0				16.2

FREQUENCY STABILITY

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2011	12
40GHz DC Block	Miteq	DCB4000	AMD	8/5/2010	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Multimeter	Tektronix	DMM912	MMH	1/28/2011	24
Chamber Temp. & Humidity Controller	ESZ / Eurotherm	Dimension II	TBC	NCR	0
Chamber, Temp./Humidity Chamber	Cincinnati Sub Zero (CSZ)	ZH-32-2-2-H/AC	TBA	8/20/2010	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

Variation of Supply Voltage

The primary supply voltage was varied from the nominal of 120 VAC. An AC lab supply was used to vary the supply voltage 0.85% to 1.15% of the nominal voltage..

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30° to +50° C) and at 10°C intervals.

The antenna is integral to the EUT, so a radiated measurement was made using a spectrum analyzer and a near field probe. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

NORTHWEST EMC

FREQUENCY STABILITY

XMit 2010.11.03

EUT:	INTPV01			**Work Order:**	GLGS0002
Serial Number:	IC0900198			**Date:**	10/18/11
Customer:	GSL Solutions, INC.			**Temperature:**	23.3°C
Attendees:	None			**Humidity:**	29%
Project:	None			**Barometric Pres.:**	30.11 in
Tested by:	Ethan Schoonover	**Power:**	120VAC/ 60Hz	**Job Site:**	EV06 & EV09

TEST SPECIFICATIONS	Test Method
FCC 15.225:2011	ANSI C63.10:2009

COMMENTS

Transmit mode with modulation, no RFID Tag.

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	1	Signature

FREQUENCY STABILITY

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20° C)

Voltage (VAC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
102 (Max)	13.560000	13.560491	36.21	100
120 (100%)	13.560000	13.560497	36.65	100
138 (Min)	13.560000	13.560493	36.36	100

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 24 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	13.560000	13.560460	33.92	100
40	13.560000	13.560453	33.41	100
30	13.560000	13.560453	33.41	100
20	13.560000	13.560497	36.65	100
10	13.560000	13.560477	35.18	100
0	13.560000	13.560503	37.09	100
-10	13.560000	13.560523	38.57	100
-20	13.560000	13.560410	30.24	100
-30	13.560000	13.560367	27.06	100

Field Strength of Spurious Emissions < 30 MHz

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

MODES OF OPERATION

Continuous Tx

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

GSLS0001-1

FREQUENCY RANGE INVESTIGATED

Start Frequency	150 kHz	Stop Frequency	30 MHz

CLOCKS AND OSCILLATORS

13.561 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	3141	AXE	2/18/2011	12 mo
Pre-Amplifier	Miteq	AM-1551	AOY	8/3/2011	12 mo
EV11 Cables	N/A	3m Test Distance Cables	EVM	3/17/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth 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

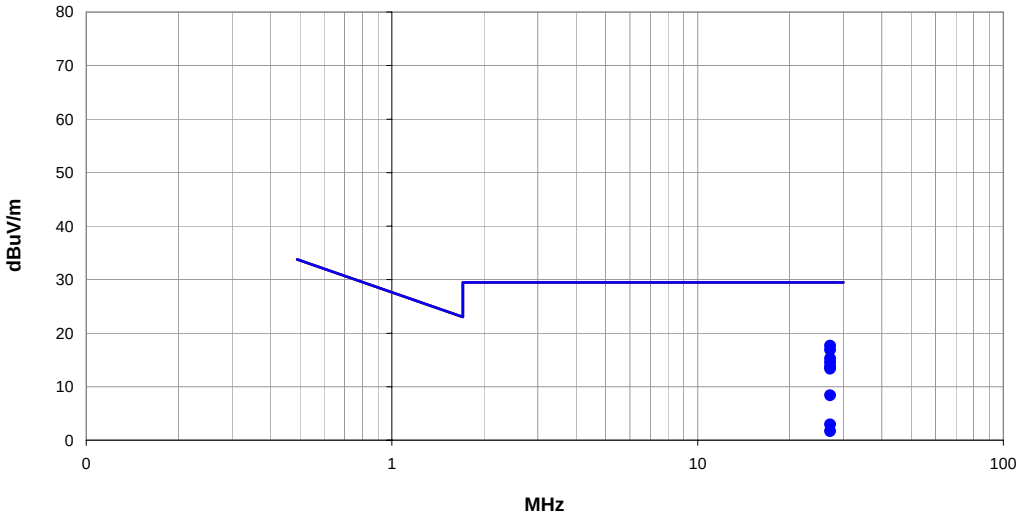
The antenna to be used with the EUT was tested. The EUT was transmitting and receiving while set at its single channel. While scanning, emissons from the EUT were maximized by rotating the EUT and adjusting the measurement antenna height and orientation in 3 orthogonal planes (per ANSI C63.10:2009). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

Field Strength of Spurious Emissions < 30 MHz

Work Order:	GSLS0002	**Date:**	12/13/11		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	EV11	**Humidity:**	26.3% RH		
Serial Number:	None	**Barometric Pres.:**	1021 mbar	**Tested by:**	Ethan Schoonover
EUT:	INTPV01				
Configuration:	1				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Tx				
Deviations:	None				
Comments:	EUT Horz				

Test Specifications	**Test Method**
FCC 15.209:2011	ANSI C63.10:2009

Run #	12	**Test Distance (m)**	10	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
27.121	27.2	9.5	3.0	77.0	10.0	0.0	Horz	QP	-19.1	17.6	29.5	-11.9	EUT On Edge. Antenna Perp to EUT, Perp to Ground.
27.121	26.4	9.5	3.0	124.0	10.0	0.0	Vert	QP	-19.1	16.8	29.5	-12.7	EUT On Edge. Antenna Perp to EUT, Par to Ground.
27.121	24.8	9.5	3.0	354.0	10.0	0.0	Horz	QP	-19.1	15.2	29.5	-14.3	EUT Horz. Antenna Perp to EUT, Perp to Ground.
27.121	24.1	9.5	2.9	340.0	10.0	0.0	Horz	QP	-19.1	14.5	29.5	-15.0	EUT Vert. Antenna Perp to EUT, Perp to Ground.
27.121	23.3	9.5	3.0	40.0	10.0	0.0	Vert	QP	-19.1	13.7	29.5	-15.8	EUT Horz. Antenna Perp to EUT, Par to Ground.
27.121	22.9	9.5	3.0	123.0	10.0	0.0	Vert	QP	-19.1	13.3	29.5	-16.2	EUT Vert. Antenna Perp to EUT, Par to Ground.
27.121	17.9	9.5	3.0	84.0	10.0	0.0	Horz	QP	-19.1	8.3	29.5	-21.2	EUT On Edge. Antenna Par to EUT, Perp to Ground.
27.121	12.5	9.5	1.2	294.0	10.0	0.0	Horz	QP	-19.1	2.9	29.5	-26.6	EUT Horz. Antenna Par to EUT, Perp to Ground.
27.120	11.2	9.5	2.9	364.0	10.0	0.0	Horz	QP	-19.1	1.6	29.5	-27.9	EUT Vert. Antenna Par to EUT, Perp to Ground.

Field Strength of Spurious Emissions > 30 MHz

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

MODES OF OPERATION

Continuous Tx

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

GSLS0002 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	1000 MHz

CLOCKS AND OSCILLATORS

13.561 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	3141	AXE	2/18/2011	12 mo
Pre-Amplifier	Miteq	AM-1551	AOY	8/3/2011	12 mo
EV11 Cables	N/A	3m Test Distance Cables	EVM	3/17/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth 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

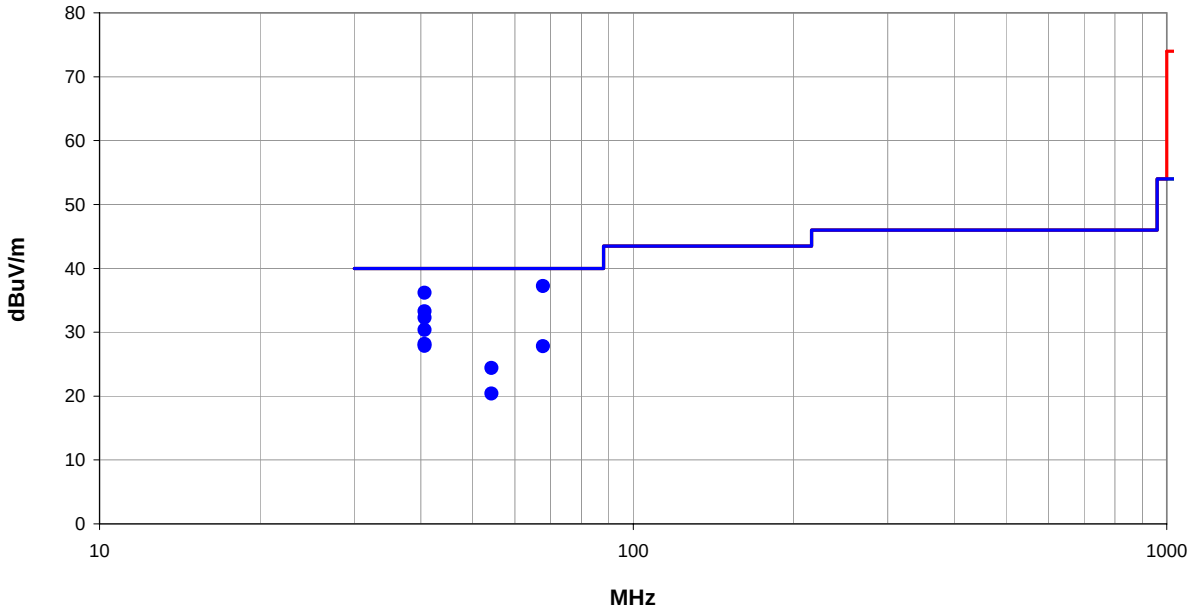
The antenna to be used with the EUT was tested. The EUT was transmitting and receiving while set at its single channel. While scanning, emissons from the EUT were maximized by rotating the EUT and adjusting the measurement antenna height and orientation in 3 orthogonal planes (per ANSI C63.10:2009). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

Field Strength of Spurious Emissions > 30 MHz

Work Order:	GSLS0002	**Date:**	12/08/11		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV11	**Humidity:**	32% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1025.5 mbar	**Tested by:**	Rod Peloquin
EUT:	INTPV01				
Configuration:	1				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Tx				
Deviations:	None				
Comments:	Re-installed the antenna after shield repair: Added larger Steward 28A3851-0A2 ferrite with three turns (passes) on DC power				

Test Specifications	**Test Method**
FCC 15.209:2011	ANSI C63.10:2009

Run #	7	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
67.812	64.5	-27.3	3.1	196.0	3.0	0.0	Horz	QP	0.0	37.2	40.0	-2.8
40.687	59.2	-23.0	1.0	40.0	3.0	0.0	Vert	QP	0.0	36.2	40.0	-3.8
40.686	56.3	-23.0	1.2	110.0	3.0	0.0	Vert	QP	0.0	33.3	40.0	-6.7
40.687	55.3	-23.0	1.2	108.0	3.0	0.0	Vert	QP	0.0	32.3	40.0	-7.7
40.688	53.4	-23.0	3.8	318.0	3.0	0.0	Horz	QP	0.0	30.4	40.0	-9.6
40.688	51.2	-23.0	3.9	2.0	3.0	0.0	Horz	QP	0.0	28.2	40.0	-11.8
40.688	50.9	-23.0	3.4	168.0	3.0	0.0	Horz	QP	0.0	27.9	40.0	-12.1
67.810	55.1	-27.3	2.0	223.0	3.0	0.0	Vert	QP	0.0	27.8	40.0	-12.2
54.248	50.8	-26.4	1.0	28.0	3.0	0.0	Vert	QP	0.0	24.4	40.0	-15.6
54.248	46.8	-26.4	3.8	316.0	3.0	0.0	Horz	QP	0.0	20.4	40.0	-19.6

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 with antenna attached
Continuous Transmit with the antenna removed and the antenna port terminated with a 50 ohm load

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

GSLS0002 - 5

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	ARH	3/30/2011	12 mo
LISN	Solar	9252-50-R-24-BNC	LIN	5/9/2011	12 mo
LISN	Solar	9252-50-R-24-BNC	LIP	5/9/2011	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	2/9/2011	24 mo
Attenuator, 20 dB, 'BNC'	SM Electronics	SA01B-20	REZ	1/10/2011	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	6/17/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

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

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. 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. The EUT was transmitting at its maximum data rate. 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.

Per the FCC Guidance, the FCC will accept measurements on a 13.56 MHz transmitter done with a dummy load under the following conditions. (1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band, and then retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. (2) For the second portion of these tests, only the fundamental emission band of the transmitter needs to be retested.

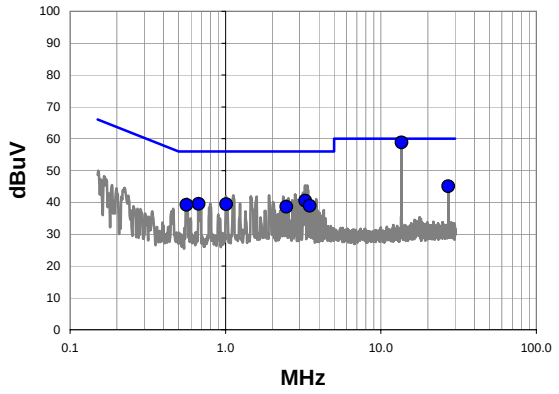
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	GSLS0002	**Date:**	12/08/11		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	32% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1025.5 mbar	**Tested by:**	Rod Peloquin
EUT:	INTPV01				
Configuration:	5				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit with antenna attached				
Deviations:	None				
Comments:	Re-installed the antenna after shield repair: Added larger Steward 28A3851-0A2 ferrite with three turns (passes) on DC power.				

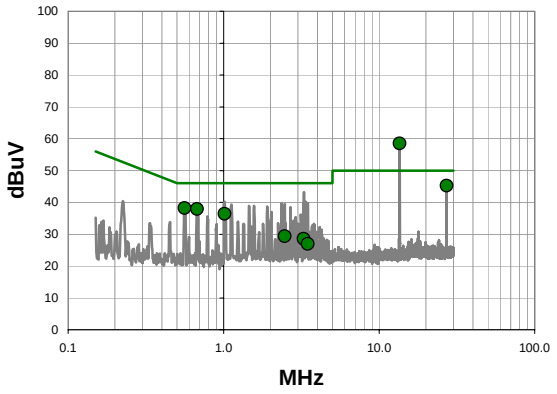
Test Specifications	**Test Method**
FCC 15.207:2011	ANSI C63.10:2009

Run #	12	**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)
13.560	38.3	20.5	58.8	60.0	-1.2
27.120	24.0	21.0	45.0	60.0	-15.0
3.268	20.3	20.2	40.5	56.0	-15.5
0.674	19.4	20.1	39.5	56.0	-16.5
1.012	19.3	20.1	39.4	56.0	-16.6
0.562	19.1	20.1	39.2	56.0	-16.8
3.482	18.7	20.2	38.9	56.0	-17.1
2.470	18.4	20.2	38.6	56.0	-17.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
13.560	38.0	20.5	58.5	50.0	8.5
27.120	24.2	21.0	45.2	50.0	-4.8
0.562	18.1	20.1	38.2	46.0	-7.8
0.674	17.8	20.1	37.9	46.0	-8.1
1.012	16.3	20.1	36.4	46.0	-9.6
2.470	9.1	20.2	29.3	46.0	-16.7
3.268	8.3	20.2	28.5	46.0	-17.5
3.482	6.7	20.2	26.9	46.0	-19.1

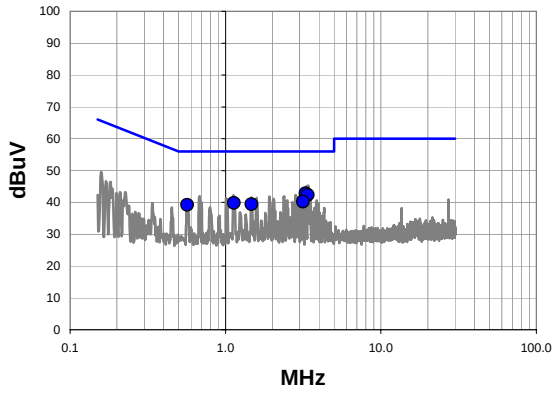
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	GSLS0002	**Date:**	12/08/11		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	32% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1025.5 mbar	**Tested by:**	Rod Peloquin
EUT:	INTPV01				
Configuration:	5				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit with the antenna removed and the antenna port terminated with a 50 ohm load				
Deviations:	None				
Comments:	Steward 28A3851-0A2 ferrite with three turns (passes) on DC power: Antenna removed and terminator installed.				

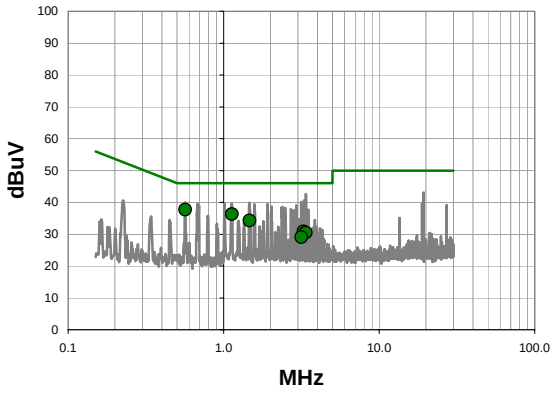
Test Specifications	**Test Method**
FCC 15.207:2011	ANSI C63.10:2009

Run #	13	**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)
3.276	22.6	20.2	42.8	56.0	-13.2
3.384	22.1	20.2	42.3	56.0	-13.7
3.160	20.0	20.2	40.2	56.0	-15.8
1.132	19.7	20.1	39.8	56.0	-16.2
1.468	19.2	20.2	39.4	56.0	-16.6
0.567	19.1	20.1	39.2	56.0	-16.8

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.567	17.6	20.1	37.7	46.0	-8.3
1.132	16.1	20.1	36.2	46.0	-9.8
1.468	14.1	20.2	34.3	46.0	-11.7
3.276	10.7	20.2	30.9	46.0	-15.1
3.384	10.3	20.2	30.5	46.0	-15.5
3.160	8.8	20.2	29.0	46.0	-17.0

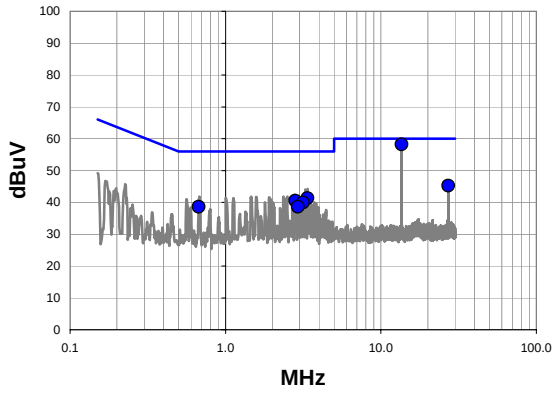
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	GSLS0002	**Date:**	12/08/11		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	32% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1025.5 mbar	**Tested by:**	Rod Peloquin
EUT:	INTPV01				
Configuration:	5				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit with antenna attached				
Deviations:	None				
Comments:	Steward 28A3851-0A2 ferrite with three turns (passes) on DC power: Antenna installed.				

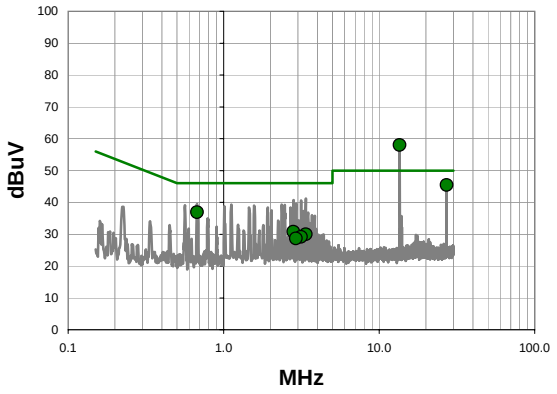
Test Specifications	**Test Method**
FCC 15.207:2011	ANSI C63.10:2009

Run #	14	**Line:**	Neutral	**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)
13.560	37.7	20.5	58.2	60.0	-1.8
3.372	21.1	20.2	41.3	56.0	-14.7
27.120	24.2	21.0	45.2	60.0	-14.8
2.812	20.3	20.2	40.5	56.0	-15.5
3.148	19.7	20.2	39.9	56.0	-16.1
2.920	18.4	20.2	38.6	56.0	-17.4
0.674	18.5	20.1	38.6	56.0	-17.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
13.560	37.5	20.5	58.0	50.0	8.0
27.120	24.4	21.0	45.4	50.0	-4.6
0.674	16.8	20.1	36.9	46.0	-9.1
2.812	10.6	20.2	30.8	46.0	-15.2
3.372	9.7	20.2	29.9	46.0	-16.1
3.148	8.9	20.2	29.1	46.0	-16.9
2.920	8.4	20.2	28.6	46.0	-17.4

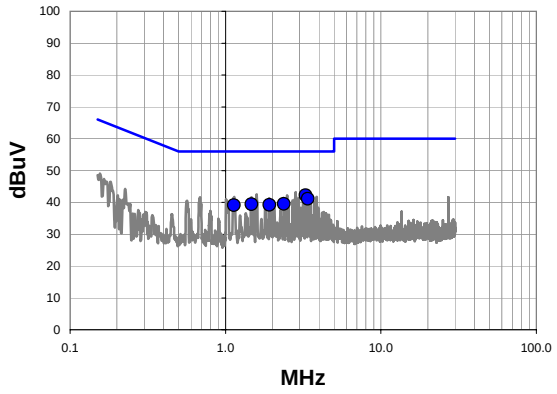
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	GSLS0002	**Date:**	12/08/11		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	32% RH		
Serial Number:	IC0900198	**Barometric Pres.:**	1025.5 mbar	**Tested by:**	Rod Peloquin
EUT:	INTPV01				
Configuration:	5				
Customer:	GSL Solutions, INC.				
Attendees:	Steve Garrett				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit with the antenna removed and the antenna port terminated with a 50 ohm load				
Deviations:	None				
Comments:	Steward 28A3851-0A2 ferrite with three turns (passes) on DC power: Antenna removed and port terminated.				

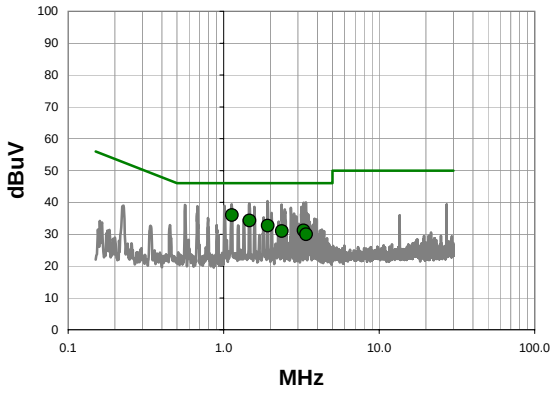
Test Specifications	**Test Method**
FCC 15.207:2011	ANSI C63.10:2009

Run #	15	**Line:**	Neutral	**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)
3.272	22.0	20.2	42.2	56.0	-13.8
3.388	20.9	20.2	41.1	56.0	-14.9
2.372	19.3	20.2	39.5	56.0	-16.5
1.468	19.2	20.2	39.4	56.0	-16.6
1.920	19.0	20.2	39.2	56.0	-16.8
1.132	19.0	20.1	39.1	56.0	-16.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
1.132	15.8	20.1	35.9	46.0	-10.1
1.468	14.1	20.2	34.3	46.0	-11.7
1.920	12.5	20.2	32.7	46.0	-13.3
3.272	11.0	20.2	31.2	46.0	-14.8
2.372	10.8	20.2	31.0	46.0	-15.0
3.388	9.7	20.2	29.9	46.0	-16.1