Nemko USA, Inc.
2210 Faraday Ave, Suite 150
Carlsbad, CA 92008
Phone (760) 444-3500 Fax (760) 444-3005

EMC TEST REPORT

For The

Unisyn Voting Solutions

Model: OVI-VC / OVO

Prepared for:
Pro V & V
700 Boulevard South
Huntsville, AL 35802

Testing performed per the following:

Volume I: Voluntary Voting System Guidelines
Volume 2: Voluntary Voting System Guidelines

PREPARED on 12/7/2016

REPORT NUMBER: 2016 11318009 EMC R3

PROJECT NUMBER: 102107271

NEX NUMBER: 318009

Nemko USA, Inc.
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1 Contents

APPENDICES

Nemko USA, Inc.
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2 Document History and Certification

2.1 Document History

REVISION	DATE	COMMENTS	
-	11/2/2016	Prepared By:	Lan Sayasane
-	11/21/2016	Initial Release:	James Morris
1	12/1/2016	Corrected titles:	James Morris
2	12/2/2016	Corrected per customer request:	Lan Sayasane
3	12/5/2016	Additional corrections:	Lan Sayasane

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to the Subclause 5.10 Requirements of ISO/IEC 17025 "General Criteria for the Competence of Testing and Calibration Laboratories":

- The unit described in this report was received at Nemko USA, Inc.'s facilities on 11/2/2016.
- Testing was performed on the unit described in this report on 11/2/2016 to 11/8/2016.
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

2.2 Test Site Accreditation

Nemko USA, Inc. is accredited through National Voluntary Laboratory Accreditation Program.

NVLAP LAB CODE 200116-0

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

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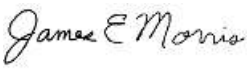
2.3 Certification

The compatibility testing and this report have been prepared by Nemko USA, Inc., an independent electromagnetic compatibility consulting and test laboratory.

Testing and data collection were accomplished in accordance with the test methods listed in this report.

I certify the data evaluation and equipment configuration herein to be a true and accurate representation of the sample's test characteristics, as of the test date(s), and for the design of the test sample utilized to compile this report.



James Morris
EMC Division Manager, Nemko USA, Inc.

3 Administrative Data and Test Summary

3.1 Administrative Test Data

CLIENT:	Pro V & V 700 Boulevard South Huntsville, AL 35802 (256) 714-4402
CONTACT:	Michael L. Walker mwalker@provandv.com
DATE(S) OF TEST:	11/2/2016 to 11/8/2016
EQUIPMENT UNDER TEST (EUT):	Unisyn Voting Solutions
MODEL:	OVI-VC / OVO
SERIAL NUMBER:	UVS211027 / UVS000036
SOFTWARE REVISION:	1.3.0.2_QA_R5 / 1.3
HIGHEST FREQUENCY GENERATED OR USED:	1.9 GHz
CONDITION UPON RECEIPT:	Acceptable
TEST SPECIFICATION:	Volume I: Voluntary Voting System Guidelines Volume II: Voluntary Voting System Guidelines

3.2 Referenced Standards for Radiated Emissions

Test Type	In Accordance with Document	Document Title
Conducted and Radiated Emissions	FCC 15B, Sec. 107, FCC 15B, Sec. 109	Title 47 -- Telecommunications, Federal Communications Commission Part 15 – Radio Frequency Devices

3.3 Referenced Standards for Immunity Tests

Test Type	In Accordance with Document VVSG Vol. 1	Document Title
Electrostatic Disruption	IEC 61000-4-2: 2008 ESD Immunity	Electromagnetic Compatibility—Testing and measurement techniques - Electrostatic discharge immunity test
Electromagnetic Susceptibility	IEC 61000-4-3: 1996 Radio Frequency Immunity	Electromagnetic Compatibility—Testing and measurement techniques - Radiated radio frequency electromagnetic field immunity test
Electrical Fast Transient	IEC 61000-4-4: 1995-01 Electrical Fast Transient Immunity	Electromagnetic Compatibility—Testing and measurement techniques - Electrical fast transient / burst immunity
Lighting Surge	IEC 61000-4-5: 1995-02 Surge Immunity	Electromagnetic Compatibility—Testing and measurement techniques - Surge immunity test
Conducted RF Immunity	IEC 61000-4-6: 1996-04 RF Common Mode Immunity	Electromagnetic Compatibility—Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
Power Disturbance	IEC 61000-4-11: 1994-06 Voltage Dips and Short Interruptions	Electromagnetic Compatibility—Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests

3.4 Test Summary

3.4.1 Emissions Test Summary

The Compliance Status is a judgment based on the calculated highest emissions to appropriate standard limits. Measurement uncertainty values, provided on calibration certificates, were not be used in the judgment of the final status of compliance.

Test Methods	Frequency Range	Compliance Status
FCC 15B, Sec. 107, Class "B" Conducted Emissions	0.15 MHz – 30 MHz	**PASS**
FCC 15B, Sec. 109, Class "B" Radiated Emissions	30 MHz – 18 GHz	**PASS**

3.5 Device Performance Criteria for Immunity Tests

Criterion A - The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion B - During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention. The performance level may be replaced by a permissible loss of performance. If the manufacturer does not specify the minimal performance level (or the permissible performance loss), then either of these may be derived from the product description and documentation, or by what the user may reasonably expect from the equipment if used as intended.

Criterion C - Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

For each test method, the test standard specifies the appropriate criterion to be met.

3.5.1 Immunity Test Summary

Test Methods	Minimum Criterion Level	Criterion Level Tested	Compliance Status
IEC 61000-4-2: 2008 Electrostatic Disruption	**Criterion B** ±2, ±4, ±8 and ±15 kV Air Discharge, ±8 kV Contact Discharge	**Criterion B** ±2, ±4, ±8 and ±15 kV Air Discharge, ±8 kV Contact Discharge	**PASS**
IEC 61000-4-3: 1996 Electromagnetic Susceptibility	**Criterion A** 10 V/m from 80-1000 MHz (80% AM at 1kHz)	**Criterion A** 10 V/m from 80-1000 MHz (80% AM at 1kHz)	**PASS**
IEC 61000-4-4: 1995-01 Electrical Fast Transient	**Criterion B** Power line pulses of ± 2 kV	**Criterion B** Power line pulses of ± 2 kV	**PASS**
IEC 61000-4-5: 1995-02 Lighting Surge	**Criterion B** ±2kV Common mode and Differential mode	**Criterion B** ±2kV Common mode and Differential mode	**PASS**
IEC 61000-4-6: 1996-04 Conducted RF Immunity	**Criterion A** 150 kHz - 80 MHz at 10 Vrms 1 kHz 80% amplitude modulated	**Criterion A** 150 kHz - 80 MHz at 10 Vrms 1 kHz 80% amplitude modulated	**PASS**
IEC 61000-4-11: 1994-06 Power Disturbance	**Criterion B and C** Voltage Dips of 30% and 60%; Interruptions of >95%, Surges ±15%, Power increase +7.5% and Power reductions -12.5%	**Criterion B and C** Voltage Dips of 30% and 60%; Interruptions of >95%, Surges ±15%, Power increase +7.5% and Power reductions -12.5%	**PASS**

Refer to the test results section for further details.

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4 SYSTEM CONFIGURATION

4.1 System Components and Power Cables

Device	Manufacturer	Length
	Model	Shield?/# of Cond/Guage
	SN	Connector type
EUT 1	Unisyn Voting Solutions	3 m
	OVI-VC	Shielded/3 wire/18 AWG
	UVS211027	IEC connector
EUT 2	Unisyn Voting Solutions	3 m
	OVO	Shielded/3 wire/18 AWG
	UVS000036	IEC connector
Support - UPS 1	MinuteMan Power Technologies	3 m
	ETR1500	Shielded/3 wire/14 AWG
	AE58080900496	IEC connector
Support - UPS 2	MinuteMan Power Technologies	3 m
	ETR1500	Shielded/3 wire/14 AWG
	AE58080900498	IEC connector

4.2 Description and Method of Exercising the EUT

The OpenElect Voting Interface (OVI) is a multi-faceted and robust ADA voting device which can also accommodate early voting and non-geographical use. During Emissions and Immunity testing, the OVI continuously plays audio.

The OpenElect Voting Optical Scan (OVO) is a comprehensive and secure precinct-count digital scan voting device. During Emissions and Immunity testing, the OVO continuously scans ballot (shoeshine).

4.3 Design Modifications for Compliance

Device: Unisyn Voting Solutions
Model: OVI-VC / OVO

The following design modifications were made to the EUT during testing.

None. No design modifications were made to the EUT during testing.

4.3.1 Front of EUT

4.3.2 Rear of EUT

4.3.3 Configuration of the EUT

5 Description of Test Site

5.1 Description of Test Site

The test site is located at 2210 Faraday Ave., Suite 150, Carlsbad, CA 92008. Radiated emissions measurements are performed in the 10 meter Semi-Anechoic chamber, which conforms to the volumetric normalized site attenuation (VNSA) for three and ten-meter measurements. The chamber also conforms to the SVSWR compliance requirements for 1-18 GHz measurements. The VNSA and SVSWR meet the technical requirements, as set, in the CISPR 16 and ANSI C63.4 documents. Facility test areas for conducted emissions and immunity testing also meet the construction and characteristics, as required by CISPR 16 and ANSI C63.4 documents.

Emissions measurements are performed using EMC32 V10.00.00 for radiated and conducted.

5.2 Test Site Registrations

Organization	Registration and Recognition numbers
Federal Communications Commission	392943 / US5058
Industry Canada	2040B-3
VCCI	A-0217
Korean Ministry (APEC Tel MRA)	US0088

This report does not imply the endorsement of the recognizing organizations or any other government agency.

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5.3 Equipment List

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
Conducted Emissions						
E1026	EMI Test Receiver 9kHz to 7GHz	Rohde & Schwarz	ESCI 7	100800	3/17/2016	3/17/2017
E1019	Two Line V-Network	Rohde & Schwarz	ENV216	101045	6/15/2016	6/15/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Radiated Emissions						
E1121	EMI Receiver	Rohde & Schwarz	ESU40	100064	4/28/2016	4/28/2017
D1480	Antenna, Bilog	Schaffner-Chase	CBL6111C	2572	7/21/2016	7/21/2017
529	Antenna, DRWG	EMCO	3115	2505	2/1/2016	2/1/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Electrostatic Discharges						
818	ESD Gun	Schaffner	NSG 435	5111	3/3/2016	3/3/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Continuous Radiated Disturbances						
E1128	Signal Generator	Rohde & Schwarz	SMB100A	1406.6000K03-177768-JY	8/9/2016	8/9/2017
D1789	Broadband Field Meter	Narda	NBM-520	B-0295	6/27/2016	6/27/2017
D1791	E-Field Probe 100kHz to 3GHz	Narda	EF 0391	A-0512	6/27/2016	6/27/2017
740	Amplifier	Amplifier Research	500W1000M5	23680	NCR	NCR
D1818	Antenna, Biconical, high power	TDK RF Solutions	HBA-2030	130496	NCR	NCR
E1014	DRG Horn Antenna	A.H.Systems, Inc.	SAS-570	174	12/12/2014	12/12/2016
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Electrical Fast Transients						
E1124	Multitest Generator	TESEQ	NSG 3060	1845	5/28/2016	5/28/2017
E1125	Coupling Network	TESEQ	CDN 3061-C16	1584	5/28/2016	5/28/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Power Line Surge						
E1124	Multitest Generator	TESEQ	NSG 3060	1845	5/28/2016	5/28/2017
E1125	Coupling Network	TESEQ	CDN 3061-C16	1584	5/28/2016	5/28/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Continuous Conducted Disturbances						
729	Signal Generator	Hewlett Packard	8656A	2402A05973	4/27/2016	4/27/2017
913	RF Amplifier	EIN	3100L	103	NCR	NCR
846	CDN	FCC	FCC-801-M3-25A	5015	2/9/2016	2/9/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016
Voltage Dips and Interruptions						
D1851	Power Source Analyzer IX Series	California Instruments/Ametek	9003ix	59380(master)	7/2/2015	7/2/2017
S1171	Humidity & Temperature Data Logger	Omega	RF2000A	P81988	10/10/2015	12/30/2016

6 Test Results

6.1 Conducted Emissions

This test measures the levels emanating from the EUT into the AC Mains, evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. The description of the tests, the test methods, and the test set-ups are given in the standards referenced in the test summary section of this report. The EUT was configured based upon the requirements of the applicable test standard.

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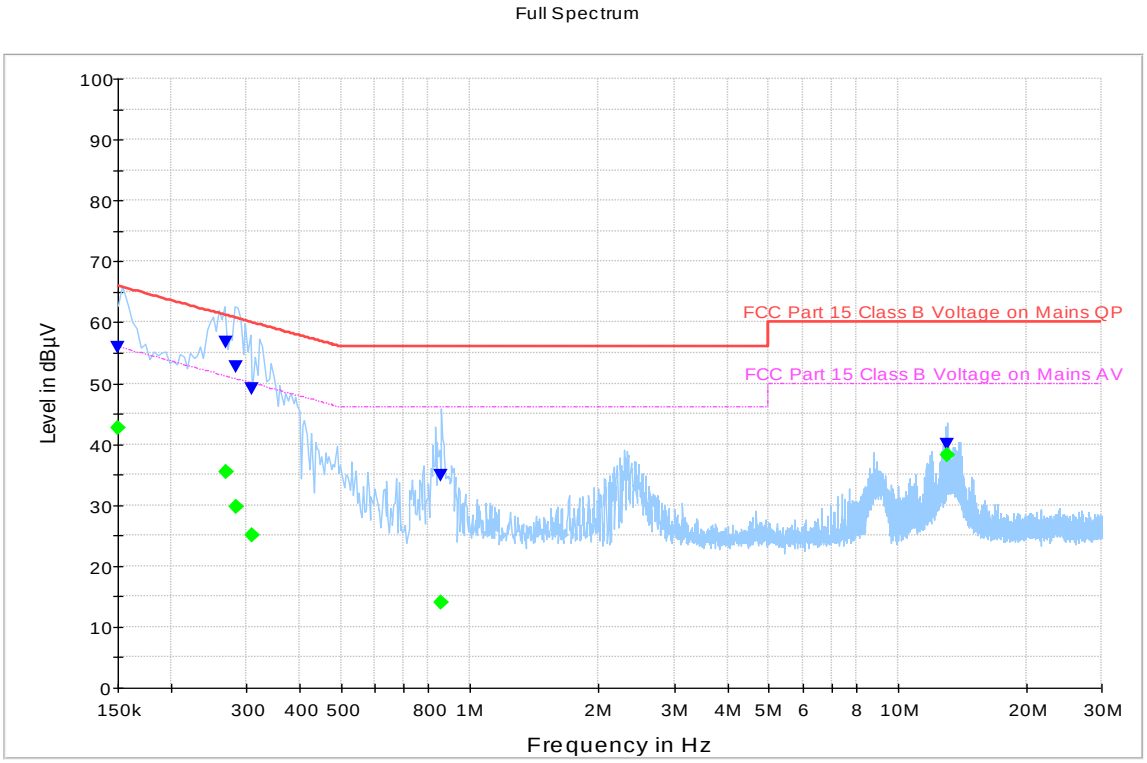
6.1.1 Test Results, FCC, High and Neutral Line

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVI-VC	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	Ground Plane 3	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.150000	---	42.73	56.00	13.27	5000.0	9.000	L1	ON	19.5	9:08:35 AM -
0.150000	55.85	---	66.00	10.15	5000.0	9.000	L1	ON	19.5	9:08:35 AM -
0.268500	---	35.53	51.16	15.63	5000.0	9.000	L1	ON	19.5	9:08:45 AM -
0.268500	56.74	---	61.16	4.42	5000.0	9.000	L1	ON	19.5	9:08:45 AM -
0.284500	---	29.63	50.68	21.05	5000.0	9.000	N	ON	19.5	9:09:05 AM -
0.284500	52.66	---	60.68	8.02	5000.0	9.000	N	ON	19.5	9:09:05 AM -
0.308500	---	24.99	50.01	25.02	5000.0	9.000	N	ON	19.5	9:09:15 AM -
0.308500	49.08	---	60.01	10.93	5000.0	9.000	N	ON	19.5	9:09:15 AM -
0.856500	---	13.99	46.00	32.01	5000.0	9.000	N	ON	19.5	9:09:25 AM -
0.856500	34.81	---	56.00	21.19	5000.0	9.000	N	ON	19.5	9:09:25 AM -
13.024500	---	38.30	50.00	11.70	5000.0	9.000	N	ON	19.7	9:09:35 AM -
13.024500	39.82	---	60.00	20.19	5000.0	9.000	N	ON	19.7	9:09:35 AM -

Compliancy			
Compliant?	Yes	Additional Comments	N/A

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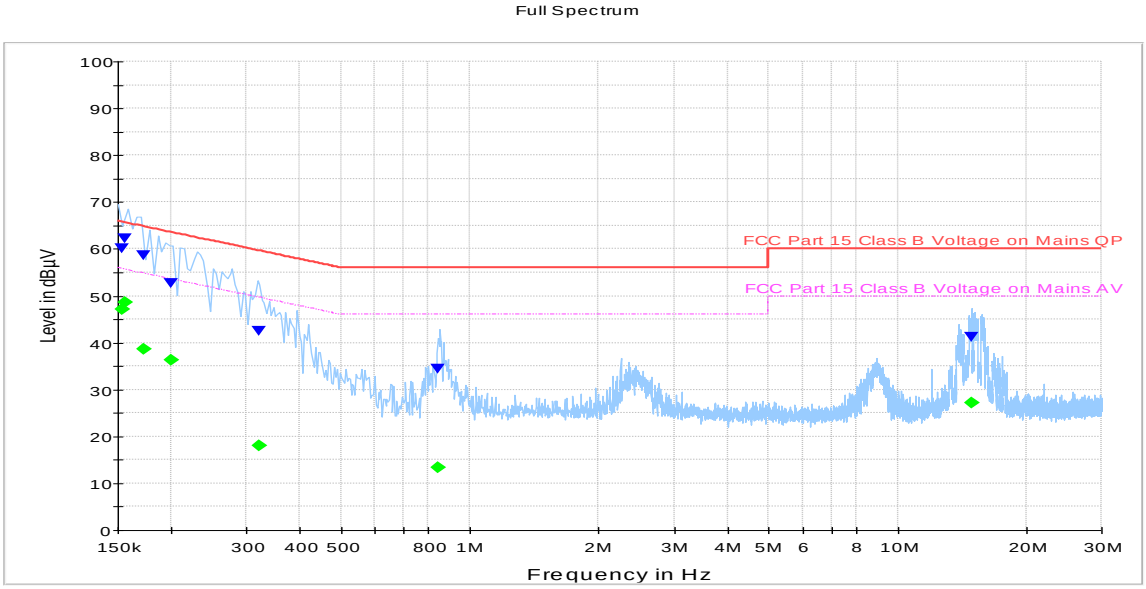
6.1.2 Test Results, FCC, High and Neutral Line

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVO	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	Ground Plane 3	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.154000	---	47.06	55.78	8.72	5000.0	9.000	N	ON	19.5	10:27:02 AM -
0.154000	60.15	---	65.78	5.63	5000.0	9.000	N	ON	19.5	10:27:01 AM -
0.156500	---	48.66	55.65	6.99	5000.0	9.000	N	ON	19.5	10:27:11 AM -
0.156500	62.30	---	65.65	3.35	5000.0	9.000	N	ON	19.5	10:27:11 AM -
0.172500	---	38.54	54.84	16.30	5000.0	9.000	L1	ON	19.5	10:26:42 AM -
0.172500	58.58	---	64.84	6.25	5000.0	9.000	L1	ON	19.5	10:26:42 AM -
0.200500	---	36.39	53.59	17.20	5000.0	9.000	N	ON	19.5	10:27:21 AM -
0.200500	52.63	---	63.59	10.96	5000.0	9.000	N	ON	19.5	10:27:21 AM -
0.320500	---	18.02	49.69	31.67	5000.0	9.000	L1	ON	19.5	10:26:52 AM -
0.320500	42.42	---	59.69	17.28	5000.0	9.000	L1	ON	19.5	10:26:52 AM -
0.844500	---	13.28	46.00	32.72	5000.0	9.000	N	ON	19.5	10:27:31 AM -
0.844500	34.32	---	56.00	21.68	5000.0	9.000	N	ON	19.5	10:27:31 AM -
14.908500	---	27.25	50.00	22.75	5000.0	9.000	N	ON	19.7	10:27:41 AM -
14.908500	41.15	---	60.00	18.85	5000.0	9.000	N	ON	19.7	10:27:41 AM -

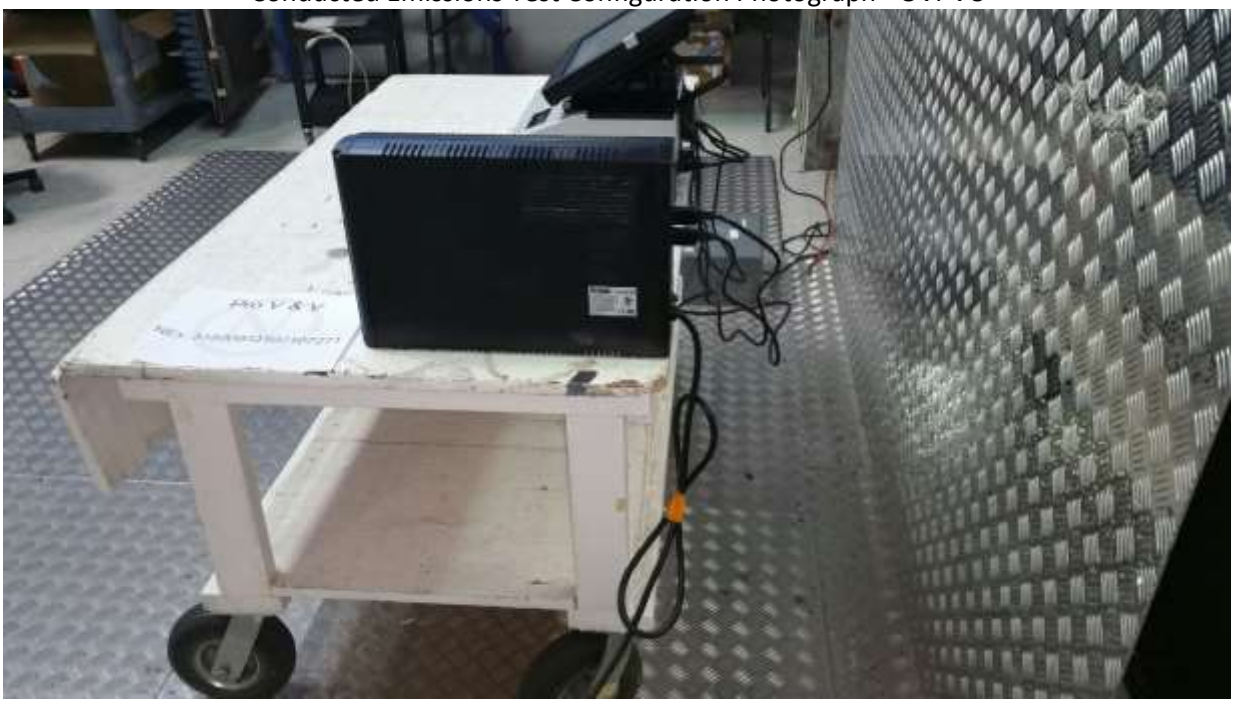
Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.1.3 List of Equipment

E1026, EMI Test Receiver 9kHz to 7GHz; E1019, Two Line V-Network; S1171, Humidity & Temperature Data Logger.

6.1.4 Reference Photos

Conducted Emissions Test Configuration Photograph - OVI-VC



Conducted Emissions Test Configuration Photograph - OVI-VC

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Conducted Emissions Test Configuration Photograph - OVO

Conducted Emissions Test Configuration Photograph - OVO

6.2 Radiated Emissions

This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. Measurement methods were used in accordance with the test standard(s) referenced in the test summary section of this report.

The antenna is positioned at several heights while the EUT is rotated 360°. At each antenna height, the receiver scans and records the maximum peak emissions. From the recorded scans, a list of discrete frequencies is developed for that antenna polarity. The antenna is then rotated in polarity and the scan repeated. For each discrete frequency, the turntable is rotated to the determined worst angle and the receive antenna is varied in height from one to four meters for the final maximum emissions.

For EUT's with auto ranging power supplies, a prescan evaluation may be performed to determine "worst-case" radiated emissions.

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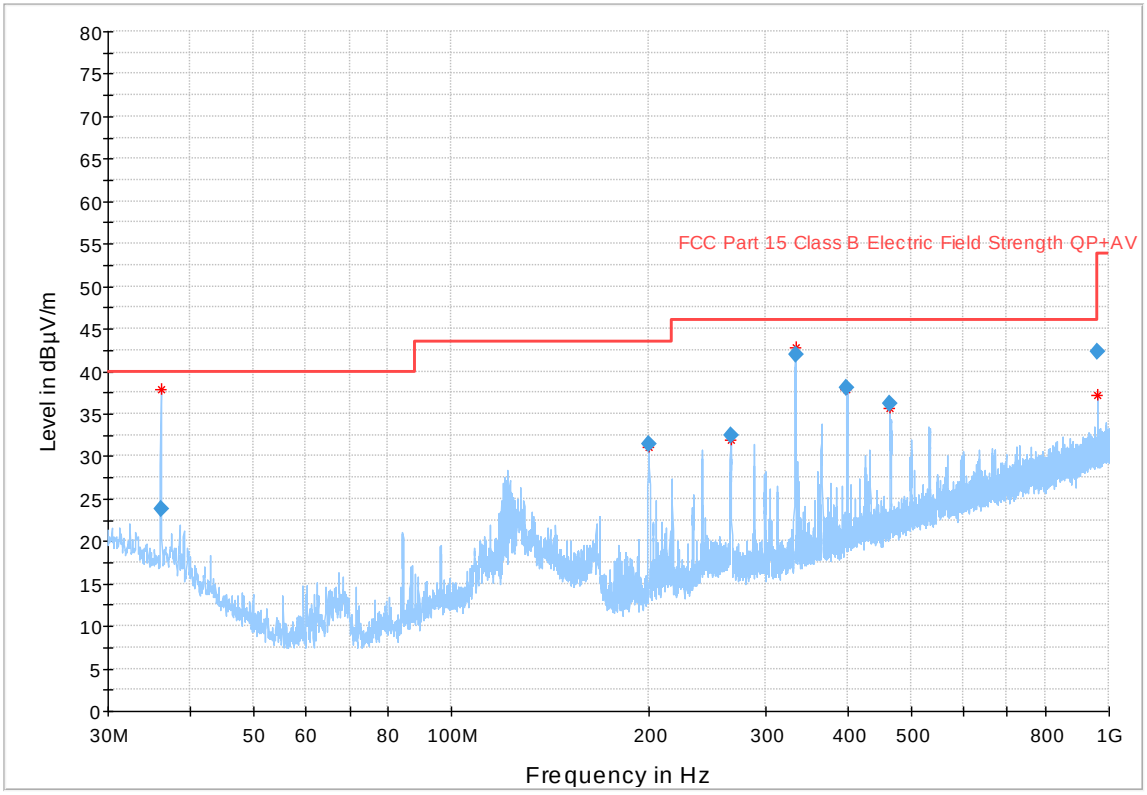
6.2.1 Radiated Emissions, FCC, <1GHz

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVI-VC	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	10 Meter Chamber	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
36.191000	23.81	40.00	16.19	5000.0	120.000	107.5	V	140.0	17.2	11:03:55 AM
199.119500	31.41	43.50	12.09	5000.0	120.000	155.0	H	164.0	12.3	10:40:22 AM
265.476000	32.47	46.00	13.53	5000.0	120.000	110.0	H	175.0	16.4	10:51:54 AM
333.222000	41.87	46.00	4.13	5000.0	120.000	104.9	H	284.0	17.8	10:57:40 AM
398.203500	38.01	46.00	7.99	5000.0	120.000	102.8	H	176.0	19.8	10:46:10 AM
464.520000	36.15	46.00	9.85	5000.0	120.000	279.5	H	93.0	21.1	10:28:50 AM
959.956000	42.22	46.00	3.78	5000.0	120.000	118.9	H	162.0	29.4	10:34:47 AM

Compliancy			
Compliant?	Yes	Additional Comments	N/A

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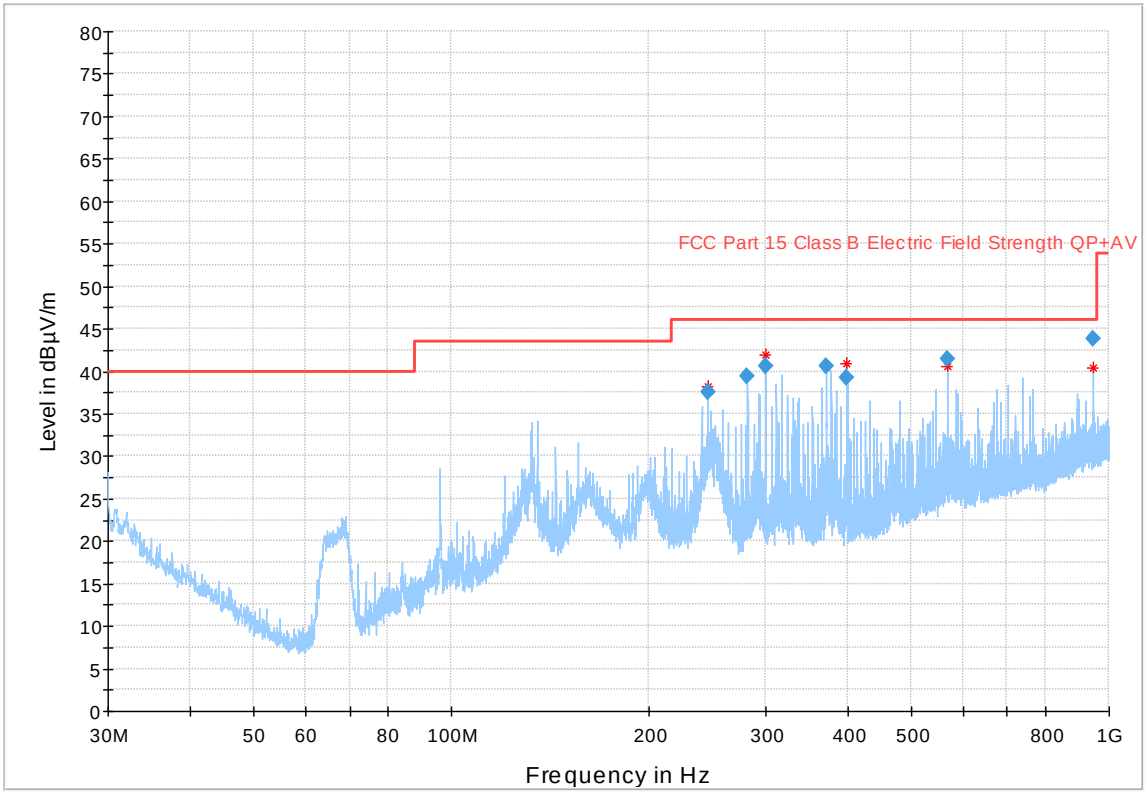
6.2.2 Radiated Emissions, FCC, <1GHz

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVO	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	10 Meter Chamber	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
246.010500	37.58	46.00	8.42	5000.0	120.000	100.7	H	308.0	15.3	9:38:06 AM -
282.006000	39.46	46.00	6.54	5000.0	120.000	104.1	H	291.0	16.2	9:32:26 AM -
299.999500	40.67	46.00	5.33	5000.0	120.000	110.5	H	16.0	16.6	9:09:38 AM -
371.982000	40.63	46.00	5.37	5000.0	120.000	100.0	H	345.0	19.2	9:15:04 AM -
398.172000	39.29	46.00	6.71	5000.0	120.000	99.0	H	188.0	19.8	9:26:40 AM -
567.000500	41.46	46.00	4.54	5000.0	120.000	123.5	H	328.0	23.6	9:43:47 AM -
944.969500	43.78	46.00	2.22	5000.0	120.000	102.3	H	166.0	29.3	9:20:54 AM -

Compliancy			
Compliant?	Yes	Additional Comments	N/A

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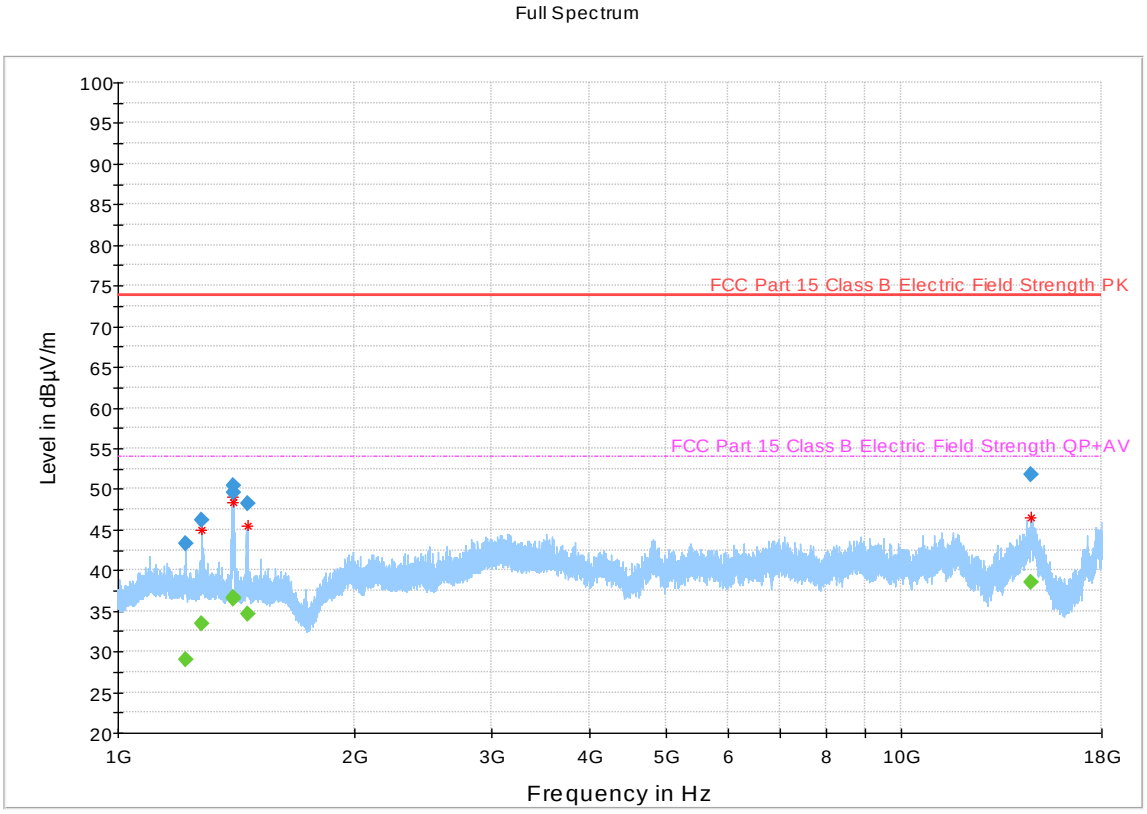
6.2.3 Radiated Emissions, FCC, >1GHz

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVI-VC	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	10 Meter Chamber	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	



Final_Result

Frequency (MHz)	MaxPeak (dBµV/	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1218.840000	43.27	---	73.90	30.63	1000.	1000.000	201.7	V	304.0	0.6	11:45:09
1218.840000	---	28.97	53.90	24.93	1000.	1000.000	201.7	V	304.0	0.6	11:45:09
1279.893333	---	33.47	53.90	20.43	1000.	1000.000	150.4	V	323.0	0.2	11:53:19
1279.893333	46.23	---	73.90	27.67	1000.	1000.000	150.4	V	323.0	0.2	11:53:19
1401.620000	---	36.70	53.90	17.20	1000.	1000.000	239.3	V	322.0	0.1	11:49:15
1401.620000	50.42	---	73.90	23.48	1000.	1000.000	239.3	V	322.0	0.1	11:49:14
1401.786667	---	36.48	53.90	17.42	1000.	1000.000	245.0	V	321.0	0.1	12:01:55
1401.786667	49.61	---	73.90	24.29	1000.	1000.000	245.0	V	321.0	0.1	12:01:55
1461.400000	---	34.65	53.90	19.25	1000.	1000.000	173.2	V	342.0	0.1	11:41:03
1461.400000	48.23	---	73.90	25.67	1000.	1000.000	173.2	V	342.0	0.1	11:41:03
14646.36000	51.72	---	73.90	22.18	1000.	1000.000	99.0	V	163.0	29.7	11:57:40
14646.36000	---	38.43	53.90	15.47	1000.	1000.000	99.0	V	163.0	29.7	11:57:40

Compliancy			
Compliant?	Yes	Additional Comments	N/A

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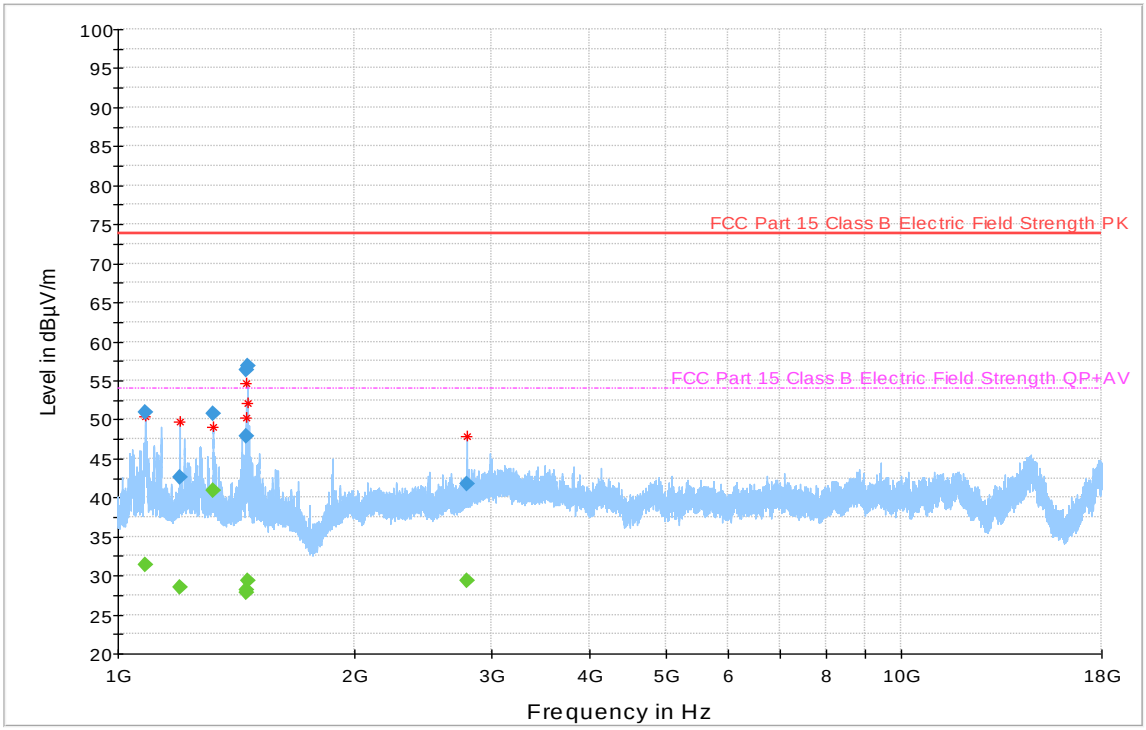
6.2.4 Radiated Emissions, FCC, >1GHz

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	37	%
EUT Model	OVO	Pressure	100.6	kPa
Governing Doc	FCC Part 15 B	Test Location	10 Meter Chamber	
Basic Standard	ANSI C63.4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016	

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
1085.22000	---	31.45	53.90	22.45	1000.	1000.000	210.7	H	282.0	0.4	1:05:11
1085.22000	50.90	---	73.90	23.00	1000.	1000.000	210.7	H	282.0	0.4	1:05:11
1200.31333	---	28.55	53.90	25.35	1000.	1000.000	165.2	V	16.0	0.6	1:30:13
1200.31333	42.58	---	73.90	31.32	1000.	1000.000	165.2	V	16.0	0.6	1:30:13
1322.66666	50.75	---	73.90	23.15	1000.	1000.000	100.0	V	0.0	0.1	1:09:33
1322.66666	---	40.96	53.90	12.94	1000.	1000.000	100.0	V	0.0	0.1	1:09:33
1459.72666	---	28.22	53.90	25.68	1000.	1000.000	108.5	V	284.0	0.1	1:17:47
1459.72666	56.41	---	73.90	17.49	1000.	1000.000	108.5	V	284.0	0.1	1:17:47
1460.31333	---	27.89	53.90	26.01	1000.	1000.000	211.6	V	243.0	0.1	1:21:40
1460.31333	47.90	---	73.90	26.00	1000.	1000.000	211.6	V	243.0	0.1	1:21:40
1461.80666	---	29.30	53.90	24.60	1000.	1000.000	108.3	V	283.0	0.1	1:13:46
1461.80666	56.79	---	73.90	17.11	1000.	1000.000	108.3	V	283.0	0.1	1:13:46
2786.82000	41.75	---	73.90	32.15	1000.	1000.000	146.6	V	260.0	4.2	1:25:53
2786.82000	---	29.27	53.90	24.63	1000.	1000.000	146.6	V	260.0	4.2	1:25:53

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.2.5 List of Equipment

E1121, EMI Receiver; D1480, Antenna, Bilog; 529, Antenna, DRWG; S1171, Humidity & Temperature Data Logger.

6.2.6 Reference Photos

Radiated Emissions Test Configuration Photograph - Below 1GHz - OVI-VC

Radiated Emissions Test Configuration Photograph - Below 1GHz - OVI-VC

Radiated Emissions Test Configuration Photograph - Below 1GHz - OVI-VC

Radiated Emissions Test Configuration Photograph - Below 1GHz - OVO

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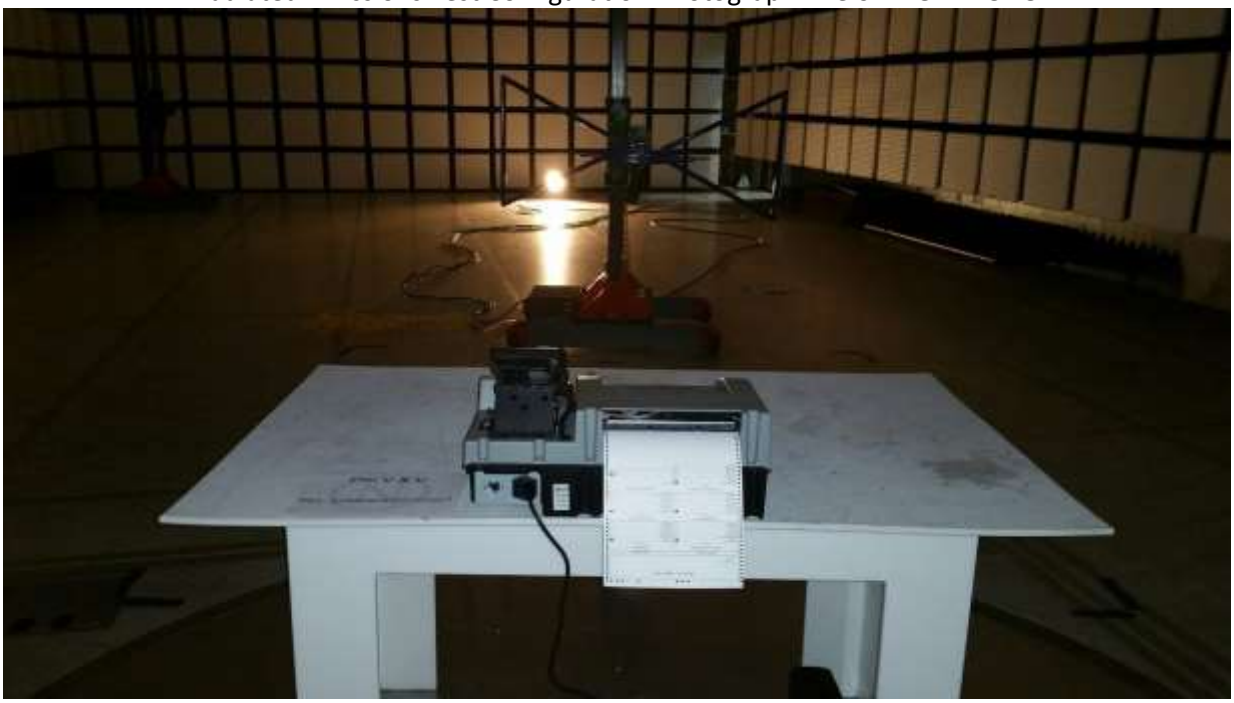
Radiated Emissions Test Configuration Photograph - Below 1GHz - OVO



Radiated Emissions Test Configuration Photograph - Below 1GHz - OVO

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Radiated Emissions Test Configuration Photograph - Above 1GHz - OVI-VC

Radiated Emissions Test Configuration Photograph - Above 1GHz - OVI-VC

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Radiated Emissions Test Configuration Photograph - Above 1GHz - OVO

Radiated Emissions Test Configuration Photograph - Above 1GHz - OVO

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6.3 Electrostatic Disruption

This test simulates electrostatic events and evaluates the ability of the EUT to tolerate such events. Testing was performed in accordance with IEC/EN 61000-4-2. All accessible enclosure surfaces and ports are evaluated unless specified as a static sensitive surface. The product specific standard sets the level and the number of test strikes to apply.

6.3.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	22	˚C
EUT Name	Unisyn Voting Solutions	Humidity	46	%
EUT Model	OVI-VC / OVO	Pressure	100.5	kPa
Governing Doc	VVSG	Test Location	ESD Ground Plane	
Basic Standard	IEC 61000-4-2	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/7/2016 and 11/8/2016	

Test Conditions	
Discharge Rep. Rate	1 per second
Number of Discharges	20 per location (Contact Discharge) / 20 per location (Air Discharge)
Performance Criteria:	B
EUT Mode:	OVI: Audio continuously playing / OVO: Ballot continuously scanning

Contact Discharge						
Voltage: (+/- kV)	2 ☐	4 ☐	6 ☐	8 ☒	Other ☐	

Location	Comments
Vertical Coupling Plane	No susceptibility noted.
Horizontal Coupling Plane	No susceptibility noted.
Contact Locations	No susceptibility noted.

Air Discharge						
Voltage: (+/- kV)	2 ☒	4 ☒	8 ☒	15 ☒	Other ☐	

Location	Comments
Air Locations	No susceptibility noted.
“Spark” event(s)	No spark events noted. No susceptibility noted.

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.3.2 List of Equipment

818, ESD Gun; S1171, Humidity & Temperature Data Logger.

6.3.3 Reference Photos

ESD Test Configuration Photograph - OVI-VC

Horizontal Coupling Plane - OVI-VC

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Vertical Coupling Plane - OVI-VC

Contact Discharge - OVI-VC

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Air Discharge - OVI-VC

ESD Test Point Locations - OVI-VC

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ESD Test Point Locations - OVI-VC

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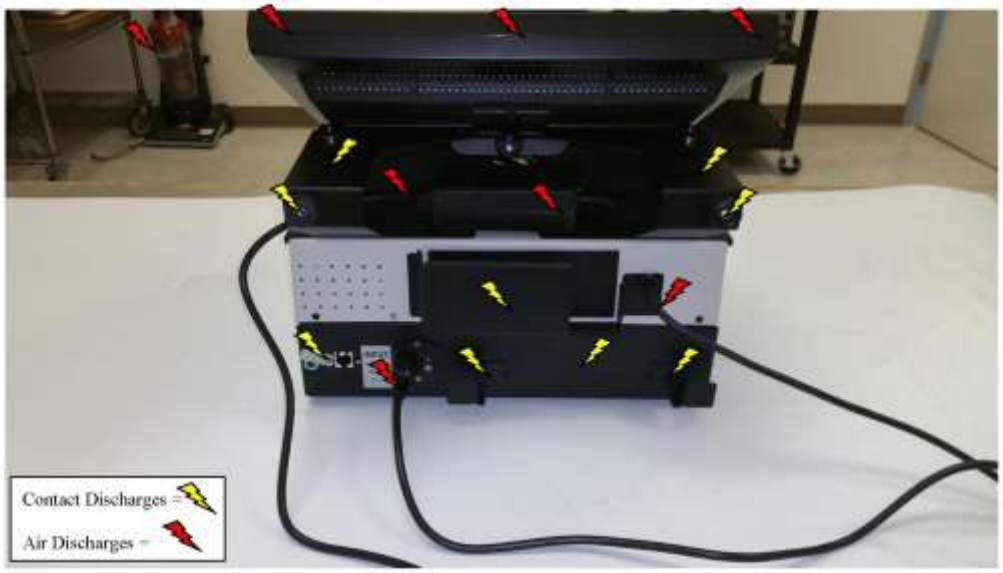

ESD Test Point Locations - OVI-VC

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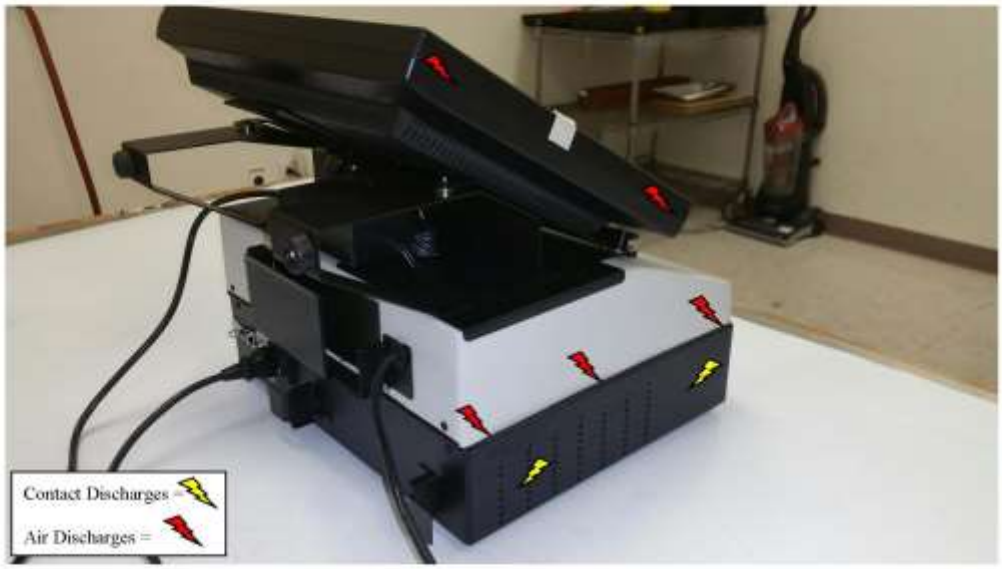

ESD Test Point Locations - OVI-VC

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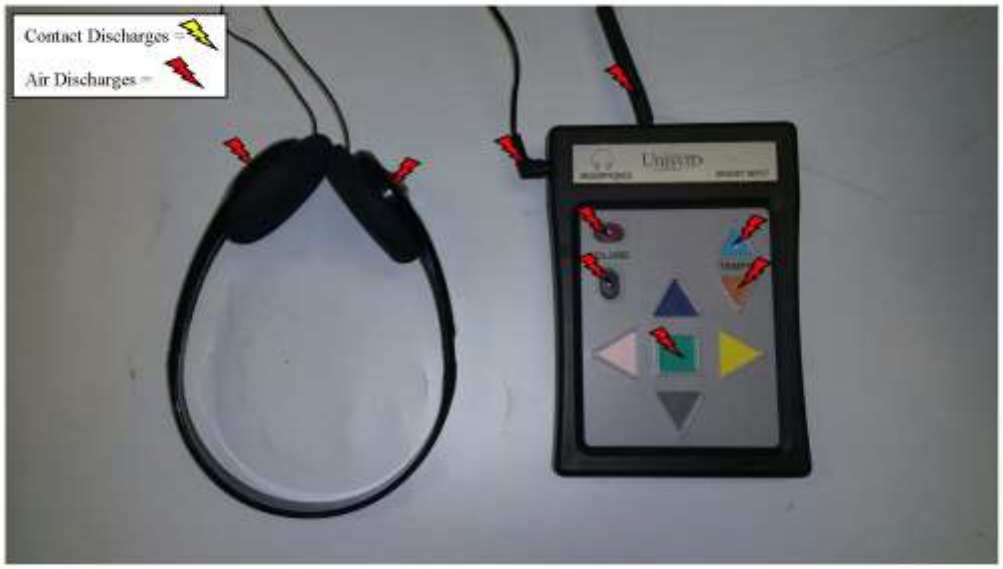

ESD Test Point Locations - OVI-VC

ESD Test Configuration Photograph - OVO

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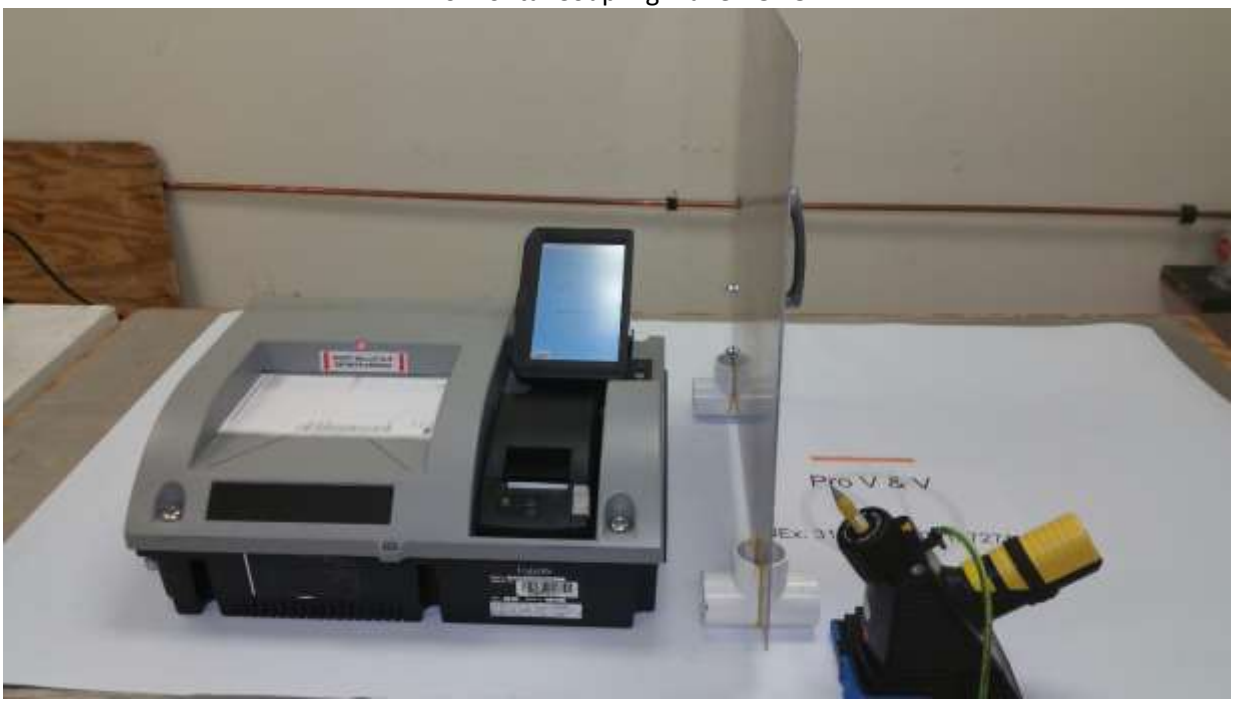
Horizontal Coupling Plane - OVO



Vertical Coupling Plane - OVO

Contact Discharge - OVO

Air Discharge - OVO

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ESD Test Point Locations - OVO

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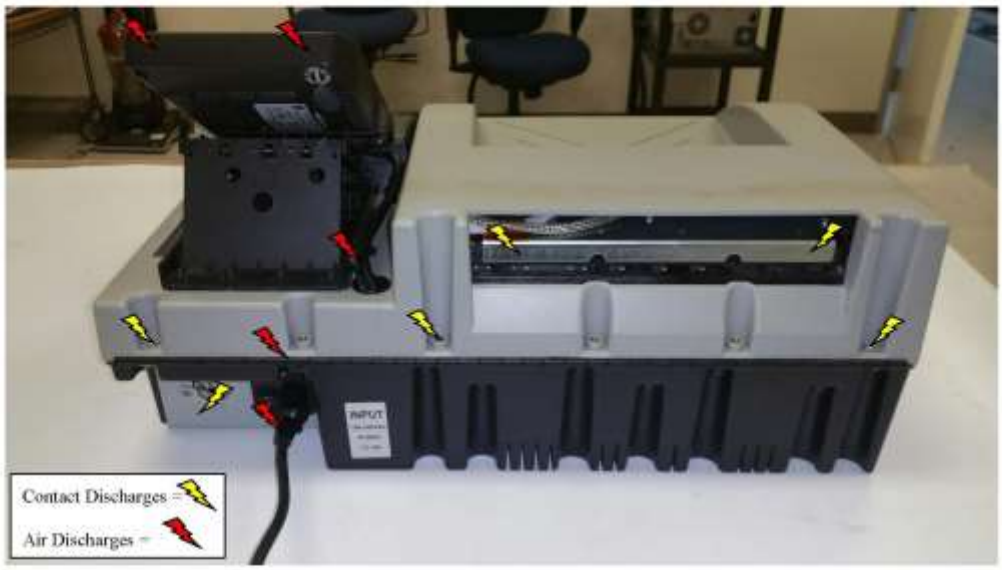

ESD Test Point Locations - OVO

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ESD Test Point Locations - OVO

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6.4 Electromagnetic Susceptibility

The Electromagnetic Susceptibility test exposes the equipment under test to a calibrated uniform field of radiated electromagnetic energy. The EUT is continuously monitored while exposed to the required frequency range and field strength. The test chamber, radiating antennas, and calibrated fields meet the requirements of referenced standards. The product specific standard sets the level, duration, and the frequency range to apply.

6.4.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	21	˚C
EUT Name	Unisyn Voting Solutions	Humidity	35	%
EUT Model	OVI-VC / OVO	Pressure	100.7	kPa
Governing Doc	VVSG	Test Location	RF Imm Chamber	
Basic Standard	IEC 61000-4-3	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/4/2016	

Test Conditions	
Test Level	10 V/m
Frequency Swept	80 MHz to 1 GHz
Selected Frequencies	N/A
Modulation	1kHz modulated at 80% AM
Frequency Step	1%
Dwell Time	3 seconds
Performance Criteria	A
EUT Mode	OVI: Audio continuously playing / OVO: Ballot continuously scanning

Test Scans Accomplished				
Frequency (MHz)	Antenna Polarization	Compliant	Orientation	Comments
80 to 1000	Horizontal	Yes	Front	No susceptibility noted.
80 to 1000	Horizontal	Yes	Rear	No susceptibility noted.
80 to 1000	Horizontal	Yes	Side Left	No susceptibility noted.
80 to 1000	Horizontal	Yes	Side Right	No susceptibility noted.
80 to 1000	Vertical	Yes	Front	No susceptibility noted.
80 to 1000	Vertical	Yes	Rear	No susceptibility noted.
80 to 1000	Vertical	Yes	Side Left	No susceptibility noted.
80 to 1000	Vertical	Yes	Side Right	No susceptibility noted.

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.4.2 List of Equipment

E1128, Signal Generator; D1789, Broadband Field Meter; D1791, E-Field Probe 100kHz to 3GHz; 740, Amplifier; D1818, Antenna, Biconical, high power; E1014, DRG Horn Antenna; S1171, Humidity & Temperature Data Logger.

6.4.3 Reference Photos

Electromagnetic Susceptibility Test Configuration Photograph - OVI-VC

Electromagnetic Susceptibility Test Configuration Photograph - OVO

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6.5 Electrical Fast Transients

This test injects a transient/burst interference onto the Mains input power supply and signal I/O lines. The EUT and peripherals were placed on a non-conductive support platform, 10cm above the test ground plane. The EUT was monitored for disturbances during required exposure time of positive and negative bursts. The product specific standard sets the level and exposure time to apply.

6.5.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	20	˚C
EUT Name	Unisyn Voting Solutions	Humidity	57	%
EUT Model	OVI-VC / OVO	Pressure	100.7	kPa
Governing Doc	VVSG	Test Location	Ground Plane 2	
Basic Standard	IEC 61000-4-4	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/7/2016	

Test Conditions	
Power Port	AC Mains
Highest Power Port Test Level	+/- 2.0kV
Test Duration	60 seconds
Burst	100 kHz
Performance Criteria	B
EUT Mode	OVI: Audio continuously playing / OVO: Ballot continuously scanning

Direct Injection Output Path						
Test Level	L1	L2	PE	n/a	n/a	Comments
+/- 2.0kV	X					No susceptibility noted.
+/- 2.0kV		X				No susceptibility noted.
+/- 2.0kV			X			No susceptibility noted.
+/- 2.0kV	X	X				No susceptibility noted.
+/- 2.0kV		X	X			No susceptibility noted.
+/- 2.0kV	X		X			No susceptibility noted.
+/- 2.0kV	X	X	X			No susceptibility noted.

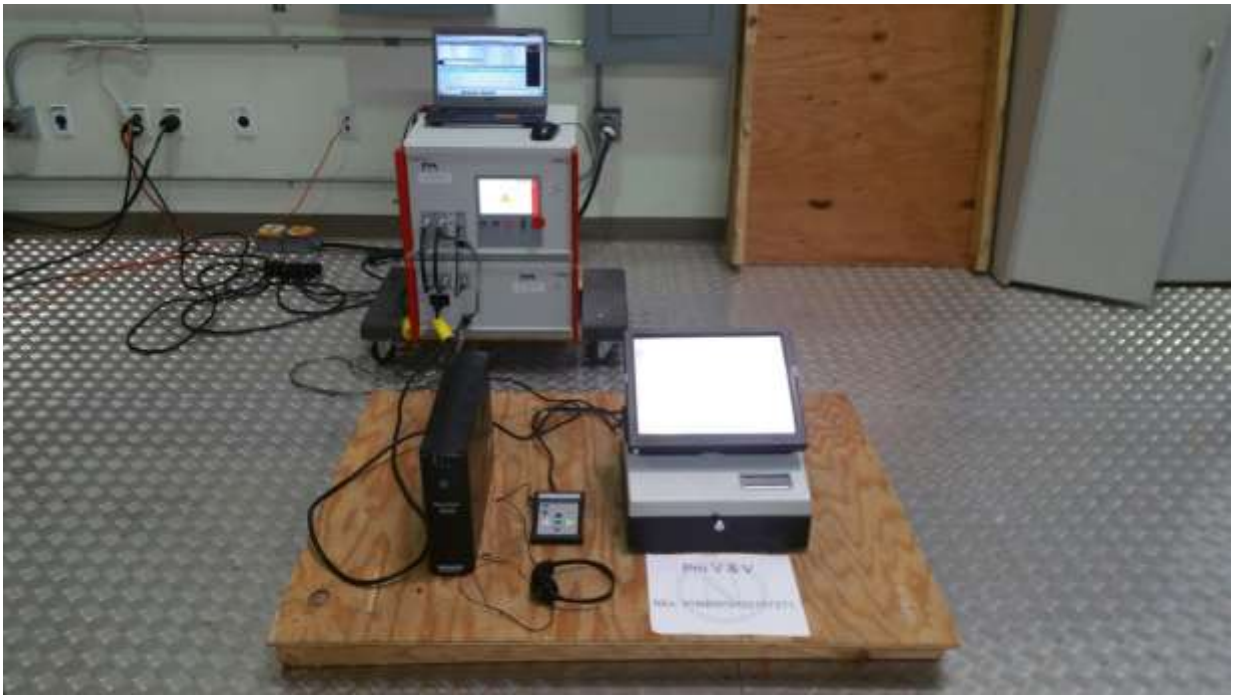
Test Level	Cable Description	Comments
N/A	No I/O cables	N/A

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.5.2 List of Equipment

E1124, Multitest Generator; E1125, Coupling Network; S1171, Humidity & Temperature Data Logger.

6.5.3 Reference Photos



EFT Test Configuration Photograph - OVI-VC

EFT Test Configuration Photograph - OVO

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6.6 Lighting Surge

This test simulates a lightning event by inducing transients onto the AC/DC power supply lines in common and differential mode. Testing was performed in accordance with IEC/EN 61000-4-5. The product specific standard determines the minimum requirement for the exposure to surge transient levels, as detailed below.

6.6.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	20	˚C
EUT Name	Unisyn Voting Solutions	Humidity	58	%
EUT Model	OVI-VC / OVO	Pressure	100.8	kPa
Governing Doc	VVSG	Test Location	Ground Plane 2	
Basic Standard	IEC 61000-4-5	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/7/2016 and 11/8/2016	

Test Conditions	
Power Port	AC Mains
Highest Power Port Test Level Line – Line	2.0 kV (Level 3)
Highest Power Port Test Level Line – Ground	2.0 kV (Level 3)
Highest Signal Port Test Level	None
Rest Duration between Strikes	60 Seconds
Number of Strikes per Voltage	Twenty (20)
Repetitions	5 each Polarity
Polarity	Negative And Positive
Strike Angles on power frequency phase	0º 90º 180º 270º
Waveform Generator Type	Combination
Performance Criteria	B
EUT Mode	OVI: Audio continuously playing / OVO: Ballot continuously scanning

Direct Injection Output Path											
Line	Level 1		Level 2		Level 3		Level 4		Special		Comments
	CM	DM	CM	DM	CM	DM	CM	DM	CM	DM	
	0.5 kV	0.5 kV	1 kV	1 kV	2 kV	2 kV	4 kV	4 kV	__kV	__kV	
N-Gnd	±		±		±						No susceptibility noted.
L1-Gnd	±		±		±						No susceptibility noted.
N-L1		±		±		±					No susceptibility noted.

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.6.2 List of Equipment

E1124, Multitest Generator; E1125, Coupling Network; S1171, Humidity & Temperature Data Logger.

6.6.3 Reference Photos

Lighting Surge Test Configuration Photograph - OVI-VC

Lighting Surge Test Configuration Photograph - OVO

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6.7 Conducted RF Immunity

This test injects a disturbance directly onto AC/DC power. Testing was performed in accordance with IEC/EN 61000-4-6. The product specific standard sets the level, duration, and the frequency range to apply.

6.7.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	20	˚C
EUT Name	Unisyn Voting Solutions	Humidity	58	%
EUT Model	OVI-VC / OVO	Pressure	100.8	kPa
Governing Doc	VVSG	Test Location	Ground Plane 2	
Basic Standard	IEC 61000-4-6	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/7/2016 and 11/8/2016	

Test Conditions	
Test Level	10 Vrms
Modulation	80% AM at 1kHz
Frequency Range	0.15 - 80 MHz
Selected Frequencies	None
Step	1%
Dwell Time	3 seconds
Performance Criteria	A
EUT Mode	OVI: Audio continuously playing / OVO: Ballot continuously scanning

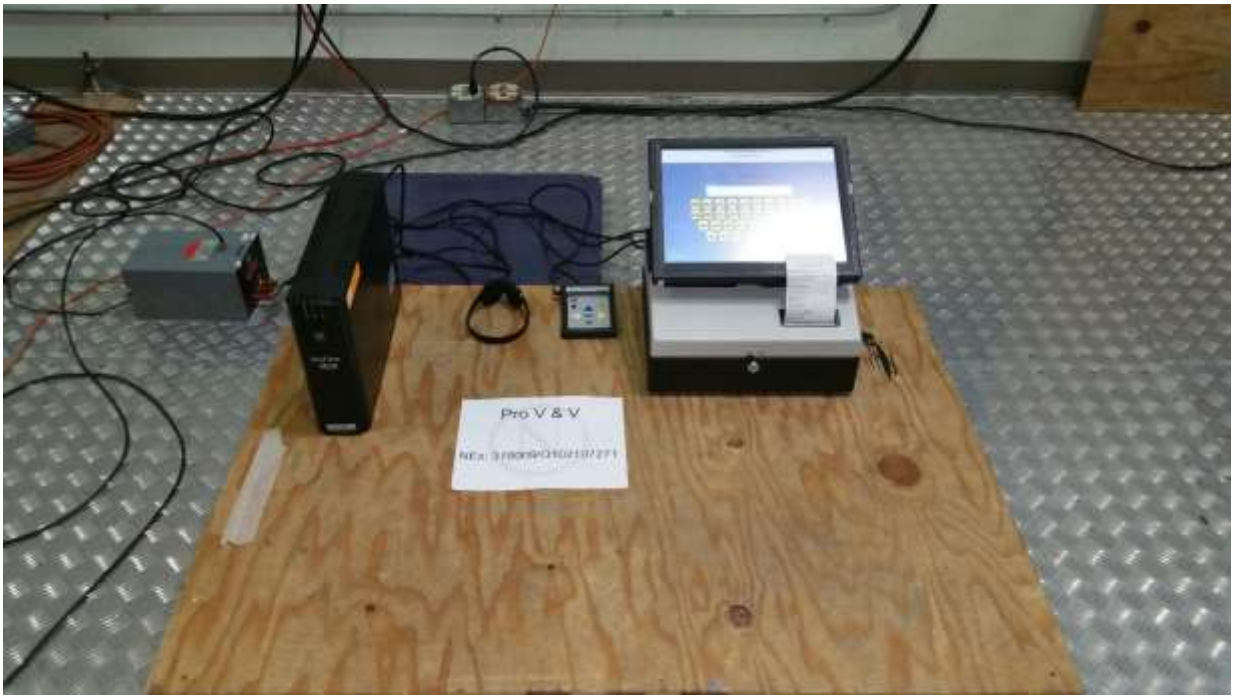
No.	Injection Point	Injection Method	Comments
1	AC Mains	CDN	No susceptibility noted.

Compliancy			
Compliant?	Yes	Additional Comments	N/A

6.7.2 List of Equipment

729, Signal Generator; 913, RF Amplifier; 846, CDN; S1171, Humidity & Temperature Data Logger.

6.7.3 Reference Photos



Conducted RF Immunity Test Configuration Photograph - OVI-VC

Conducted RF Immunity Test Configuration Photograph - OVO

6.8 Electrical Power Disturbance

This test subjects the EUT to power network faults and "brownouts". Testing was performed in accordance with IEC/EN 61000-4-11. The EUT is powered up to a nominal voltage, and then software-controlled voltage dips and interruptions are introduced. The product specific standard sets the level and duration of the voltage dips.

6.8.1 Test Results

Client	Pro V & V			
NEx #	318009	Temperature	23	˚C
EUT Name	Unisyn Voting Solutions	Humidity	36	%
EUT Model	OVI-VC / OVO	Pressure	100.4	kPa
Governing Doc	VVSG	Test Location	Ground Plane 3 / Ground Plane 1	
Basic Standard	IEC 61000-4-11	Test Engineer	Lan Sayasane	
Test Voltage	120V/60Hz	Date	11/3/2016 and 11/4/2016	

Voltage Dips	
Performance Criteria	B, C
Changes Occur At	zero crossing

% Reduction (Dip)	Duration in millisecond	Compliancy / Comments
30	10	No susceptibility noted.
60	100	No susceptibility noted.
60	1000	No susceptibility noted.
>95	5000	No susceptibility noted.

Overall Compliancy Voltage Dips			
Compliant?	Yes	Additional Comments	N/A

Surges	
Performance Criteria	B, C
Changes Occur At	zero crossing

% Reduction	Duration in second(s)	Compliancy / Comments
+15	1	No susceptibility noted.
-15	1	No susceptibility noted.
+7.5	14400	No susceptibility noted.
-12.5	14400	No susceptibility noted.

Overall Compliancy Voltage Interruptions			
Compliant?	Yes	Additional Comments	N/A

6.8.2 List of Equipment

D1851, Power Source Analyzer IX Series; S1171, Humidity & Temperature Data Logger.

6.8.3 Reference Photos

Electrical Power Disturbance Test Configuration Photograph - OVI-VC

Electrical Power Disturbance Test Configuration Photograph - OVO

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APPENDIX A

A. Radiated Emissions Measurement Uncertainties

1. Introduction

ISO/IEC 17025:2005 and ANSI/NCSL Z540.3: 2006 require that all measurements contained in a test report be “traceable”. “Traceability” is defined in the International Vocabulary of Basic and General Terms in Metrology (ISO: 1993) as: “the property of the result of a measurement… whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons, all having stated uncertainties”.

The purposes of this Appendix are to “state the Measurement Uncertainties” of the conducted emissions and radiated emissions measurements contained in Section 5 of this Test Report, and to provide a practical explanation of the meaning of these measurement uncertainties.

2. Statement of the Worst-Case Measurement Uncertainties for the Conducted and Radiated Emissions Measurements Contained in This Test Report

Table 1: Worst-Case Expanded Uncertainty "U" of Measurement for a k=2 Coverage Factor

Conducted and Radiated Emissions Measurement Detection Systems	Applicable Frequency Range	"U” for a k=2 Coverage Factor
Spectrum Analyzer and LISN	100 kHz – 30 MHz	+/-2.8 dB
Spectrum Analyzer and Telecom ISN	100 kHz – 30 MHz	+/-1.38dB
Spectrum Analyzer, Pre-amp, and Antenna	30 MHz-200 MHz	+/-3.9 dB
Spectrum Analyzer, Pre-amp, and Antenna	200 MHz-1000 MHz	+/- 3.5 dB
Spectrum Analyzer, Pre-amp, and Antenna	1 GHz - 18 GHz	+/-2.6 dB

NOTES:
1. Applies to 3 and 10 meter measurement distances
2. Applies to all valid combinations of Transducers (i.e. LISNs, Line Voltage Probes, and Antennas, as appropriate)
3. Excludes the Repeatability of the EUT

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3. Practical Explanation of the Meaning of Radiated Emissions Measurement Uncertainties

In general, a "Statement of Measurement Uncertainty" means that with a certain (specified) confidence level, the "true" value of a measurement will be between a (stated) upper bound and a (stated) lower bound.

In the specific case of EMC Measurements in this test report, the measurement uncertainties of the conducted emissions measurements and the radiated emissions measurements have been calculated in accordance with the method detailed in the following documents:

- ANSI Z540.2 (2002) Guide to the Expression of Uncertainty in Measurement
- NIS 81:1994, The Treatment of Uncertainty in EMC Measurements (NAMAS, 1994)
- NIST Technical Note 1297(1994), Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results (NIST, 1994)

The calculation method used in these documents requires that the stated uncertainty of the measurements be expressed as an "expanded uncertainty", U, with a k=2 coverage factor.

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APPENDIX B

B. Nemko USA, Inc. Test Equipment & Facilities Calibration Program

Nemko USA, Inc. operates a comprehensive Periodic Calibration Program in order to ensure the validity of all test data. Nemko USA's Periodic Calibration Program is fully compliant to the requirements of NVLAP Policy Guide PG-1-1988, ANSI/NCSL Z540.3: 2006, ISO 10012:2003, ISO/IEC 17025:2005, and ISO-9000: 2000.Nemko USA, Inc.'s calibrations program therefore meets or exceeds the US national commercial and military requirements [N.B. ANSI/NCSL Z540-1-1994 replaced MIL-STD-45662A].

Specifically, all of Nemko USA's primary reference standard devices (e.g. vector voltmeters, multimeters, attenuators and terminations, RF power meters and their detector heads, oscilloscope mainframes and plug-ins, spectrum analyzers, RF preselectors, quasi-peak adapters, interference analyzers, impulse generators, signal generators and pulse/function generators, field-strength meters and their detector heads, etc.) and certain secondary standard devices (e.g. RF Preamplifiers used in CISPR 11/22 and FCC Part 15/18 tests) are periodically recalibrated by:

- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratories by NIST; or,
- A Nemko USA-approved independent (third party) metrology laboratory that uses NIST-traceable standards and that is ISO Guide 25-accredited as a calibration laboratory by another accreditation body (such as A2LA) that is mutually recognized by NIST; or,
- A manufacturer of Measurement and Test Equipment (M&TE), if the manufacturer uses NIST-traceable standards and is ISO Guide 25-accredited as calibration laboratory either by NIST or by another accreditation body (such as A2LA) that is mutually recognized by NIST; or
- A manufacturer of M&TE (or by a Nemko USA-approved independent third party metrology laboratory) that is not ISO Guide 25-accredited.(In these cases, Nemko USA conducts an annual audit of the manufacturer or metrology laboratory for the purposes of proving traceability to NIST, ensuring that adequate and repeatable calibration procedures are being applied, and verifying conformity with the other requirements of ISO Guide 25).

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In all cases, the entity performing the Calibration is required to furnish Nemko USA with a calibration test report and/or certificate of calibration, and a "calibration sticker" on each item of M&TE that is successfully calibrated.

Calibration intervals are normally one year, except when the manufacture advises a shorter interval or if US Government directives or client requirements demand a shorter interval. Items of instrumentation/related equipment which fail during routine use, or which suffer visible mechanical damage (during use or while in transit), are sidelined pending repair and recalibration.(Repairs are carried out either in-house [if minor] or by a Nemko USA-approved independent [third party] metrology laboratory, or by the manufacturer of the item of M&TE).

Each antenna used for CISPR 11, CISPR 14, CISPR 22, and FCC Part 15 and Part 18 radiated emissions testing (and for testing to the equivalent European Norms) is calibrated annually by either a NIST (or A2LA) ISO Standard 17025-Accredited third-party Antenna Calibration Laboratory or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory. The antenna calibrations are performed using the methods specified in CISPR 16-1-4 or ANSI C63.5-2006, including the "Three-Antenna Method". Certain other kinds of antennas (e.g. magnetic-shielded loop antennas) are calibrated annually by either a NIST (or A2LA) ISO Standard 17025-accredited third-party antenna calibration laboratory, or by the antenna's OEM if the OEM is NIST or A2LA ISO Standard 17025-accredited as an antenna calibration laboratory using the procedures specified in the latest version of SAE ARP-958.

In accordance with FCC and other regulations, Nemko USA recalibrates its suite of antennas used for radiated emissions tests on an annual basis. These calibrations are performed as a precursor to the FCC-required annual revalidation of the Normalized Site Attenuation properties of Nemko USA's 10-meter Semi-Anechoic chamber. Nemko USA, Inc. uses the procedures given in CISPR 16-1-4 and, ANSI C63.4-2009 when performing the normalized site attenuation measurements.