NTS Labs, LLC Test Report for EMI Immunity Testing of the ExpressVote® Universal Voting System Hardware 3.0

Prepared For
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Performed By
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Revision History

Rev.	Description	Issue Date
0	Initial Release	09/08/2023
1	• Corrected unit name and address on cover page • Revised test specification VVSG throughout • Added EUT serial number EV032334P026 to Table 3.0-1 • Corrected ESD datasheet text color in Section 5.1.3 • Added missing test data for Radiated RF Immunity (Section 5.3), EFT (Section 5.5) and Conducted RF Immunity (Section 5.6)	10/09/2023
2	• Added “VVSG 2.0” to ESD specification in Table 5.0-1 and Section 5.1.1	10/11/2023

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1.0 Introduction

This document presents the test procedures used and the results obtained during the performance of an Electromagnetic Interference (EMI) test program. The test program was conducted to assess the ability of the specified Equipment Under Test (EUT) to successfully satisfy the requirements listed in Section 2.0.

2.0 References

The following references listed below form a part of this document to the extent specified herein.

- Test Specification: VVSG 2.0
  EN61000-4-2
  EN61000-4-3
  EN61000-4-4
  EN61000-4-5
  EN61000-4-6
  EN61000-4-11
- Pro V&V, Inc Purchase Order(s) 2023-011 dated 04/24/2023, and 2023-015 dated 08/17/2023
- NTS Labs, LLC (NTS) Quote(s) OP0638253, dated 04/19/2023
- ISO/IEC 17025:2017(E) *General Requirements for the Competence of Testing and Calibration Laboratories*, dated 11/1/2017

3.0 Product Selection and Description

Pro V&V, Inc selected and provided the following test sample(s) to be used as the Equipment Under Test:

Table 3.0-1: Product Identification - Equipment Under Test (EUT)

Item	Qty.	Name/Description	Part Number	Serial Number
1	1	ExpressVote® Universal Voting System Hardware 3.0	ExpressVote3	EV032334P026
2	1		ExpressVote3	EV032334P029
3	1		ExpressVote3	EV032334P030

3.1 Security Classification

Non-classified

4.0 General Test Requirements

4.1 Test Equipment

The instrumentation used in the performance of these tests is periodically calibrated and standardized within manufacturer's rated accuracies and are traceable to the National Institute of Standards and Technology. The calibration procedures and practices are in accordance with ISO 17025:2017. Certification of calibration is on file subject to inspection by authorized personnel.

4.2 Measurement Uncertainties

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below were calculated using the approach described in CISPR 16-4-2:2003 using a coverage factor of k=2, which gives a level of confidence of approximately 95%. The levels were found to be below levels of CISPR and therefore no adjustment of the data for measurement uncertainty is required.

Table 4.2-1: Measurement Uncertainties

Measurement Type	Measurement Units	Frequency Range	Expanded Uncertainty
ESD	KV	NA	+/- 8.6%
Surge	Voltage	NA	+/- 4.9%
Voltage Dips / Interrupts	Voltage	NA	+/- 2.3%

5.0 Test Descriptions and Results

Table 5.0-1: Summary of Test Information & Results

Section	Test	Specification	Test Facility	Test Date	Part #	Serial #	Test Result
5.1	Electrostatic Discharge	VVSG 2.0 EN61000-4-2	Longmont	08/17/2023	ExpressVote3	EV032334P029	Passed
5.2	Surge Immunity	VVSG 2.0 EN61000-4-5	Longmont	08/18/2023	ExpressVote3	EV032334P029	Passed
5.3	Radiated RF Immunity	VVSG 2.0 EN61000-4-3	Longmont	08/18/2023	ExpressVote3	EV032334P026	Passed
5.4	Voltage Dips and Interruptions	VVSG 2.0 EN61000-4-11	Longmont	08/18/2023 - 08/21/2023	ExpressVote3	EV032334P030	Passed
5.5	Electrical Fast Transient (EFT) / Burst	VVSG 2.0 EN61000-4-4	Longmont	08/21/2023	ExpressVote3	EV032334P029	Passed
5.6	Conducted RF Immunity	VVSG 2.0 EN61000-4-6	Longmont	08/21/2023	ExpressVote3	EV032334P029	Passed

The decision rule for Test Results was based on the Test Specification used for testing.

5.1 Electrostatic Discharge (ESD)

5.1.1 Test Procedure

VVSG 2.0

EN61000-4-2

5.1.2 Test Result

Passed

5.1.3 Test Datasheets

National Technical Systems

Electrostatic Discharge per IEC/EN 61000-4-2

Standard Referenced: EN:61000-4-2 Date: 8/17/2023

Temperature: 25°C Humidity: 57% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Processing Ballots

Test Engineer: Mike Tidquist

Date	Time	Log Entries	Initials	Result
8/17/23	1400	Electrostatic Discharge. +/8kV Contact, +/2, 4, 8, 15kV Air. 120 VAC / 60 Hz (4.1.2.8)	MT	Pass
	1600	Air and Contact discharges occurred with no disruption in operation See Photos	MT	Pass

National Technical Systems

Electrostatic Discharge per IEC / EN 61000-4-2

Standard Referenced: EN 61000-4-2 Date: 8/17/2023

Temperature: 25˚C Humidity: 57% Pressure: 843 mb

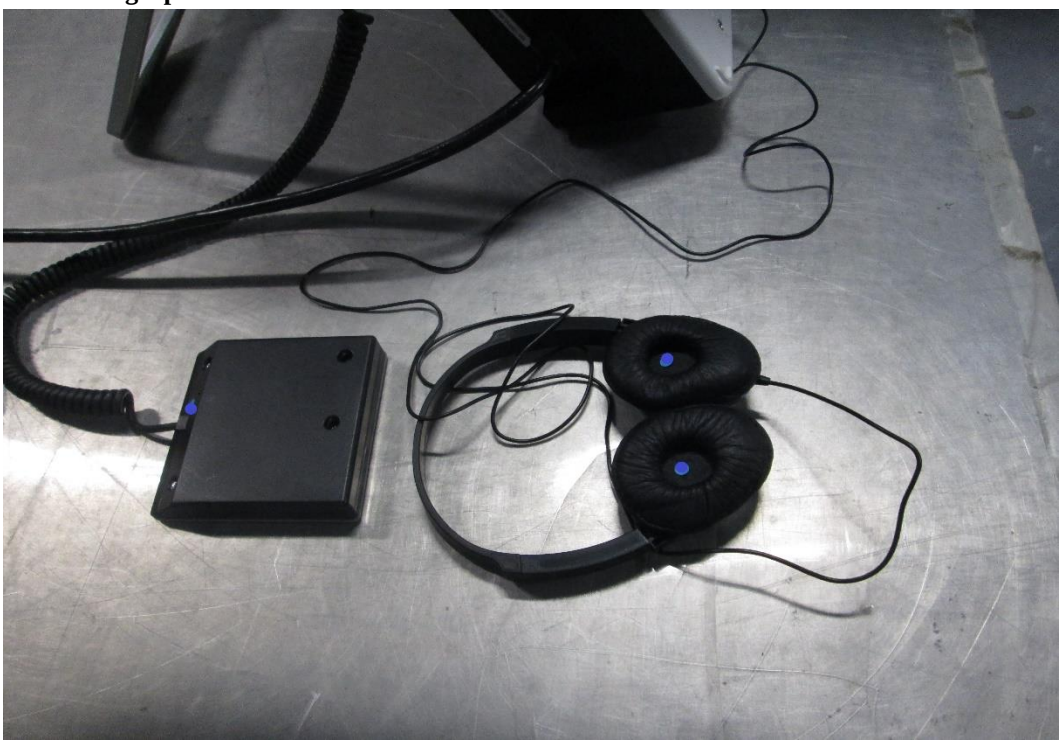
Input Voltage: 120Vac/60Hz

Configuration of Unit: Processing Ballots

Test Engineer: Mike Tidquist

Test Location	Voltage Level	Polarity		Number of Pulses	Pulses Per Second	Comments	Criteria Met	Pass/ Fail
	(kV)	+	-					
Indirect Discharge Points								
VCP	8	X	X	10	1	Front Side	A	Pass
VCP	8	X	X	10	1	Left Side	A	Pass
VCP	8	X	X	10	1	Right Side	A	Pass
VCP	8	X	X	10	1	Back Side	A	Pass
HCP	8	X	X	10	1	Edge of HCP at Front of UUT	A	Pass
Contact Discharge Points - **RED** Dots.								
Setup Photo								
Photo 1.	8	X	X	10	1		A	Pass
Photo 2.	8	X	X	10	1	ND	-	-
Photo 3.	8	X	X	10	1	ND	-	-
Photo 4.	8	X	X	10	1	ND	-	-
Photo 5.	8	X	X	10	1	ND	-	-
Photo 6.	8	X	X	10	1	ND		
Air Discharge Points - **BLUE** Dots.								
Setup Photo								
Photo 1.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 2.	2, 4, 8, 15	X	X	10	1	ND	-	-
Photo 3.	2, 4, 8, 15	X	X	10	1	ND	-	-
Photo 4.	2, 4, 8, 15	X	X	10	1	ND	-	-
Photo 5.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 6.	2, 4, 8, 15	X	X	10	1		A	Pass
ND: No Discharge points found								

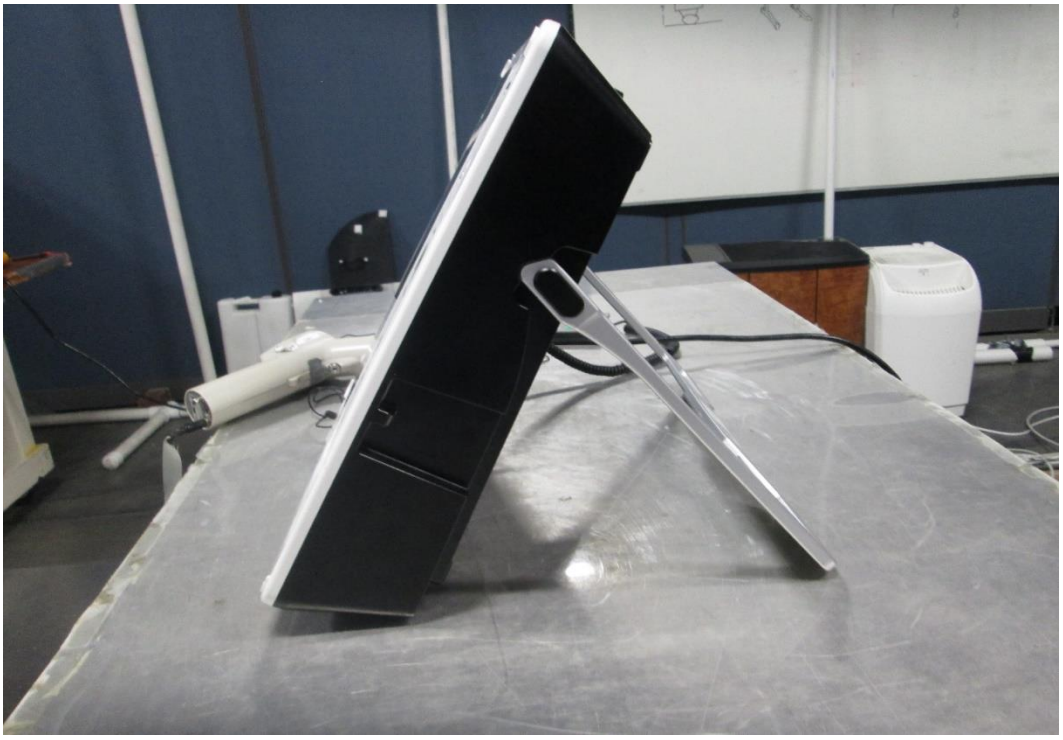
5.1.4 Test Photographs



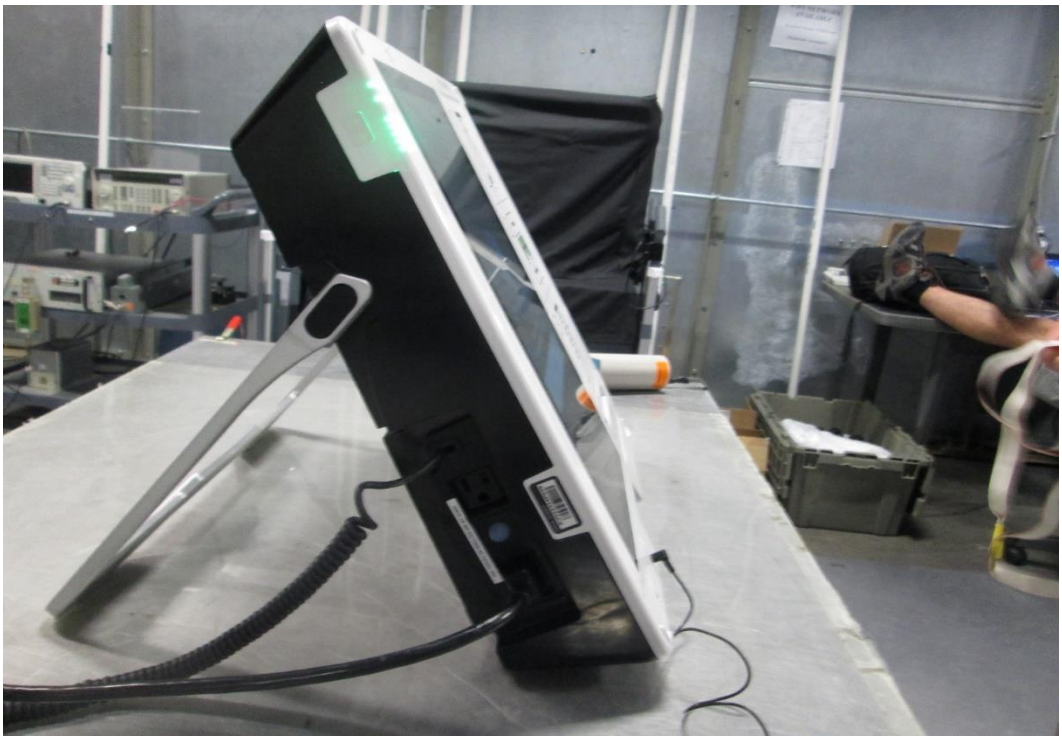
ESD Setup View 1

ESD Setup View 2

ESD Setup View 3



ESD Setup View 4



ESD Setup View 5

ESD Setup View 6

5.1.5 Test Equipment List

Table 5.1-1: Electrostatic Discharge Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059917	Ground Plane (Fixed)	NTS Labs, LLC	GP1	NCR	NCR
WC059665	Gun (ESD Simulator)	EMC-Partner	ESD3000	07/21/2023	07/31/2024
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC078490	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.2 Surge Immunity

5.2.1 Test Procedure

VVSG 2.0

EN61000-4-5

5.2.2 Test Result

Passed

5.2.3 Test Datasheets

National Technical Systems

Surge Immunity per IEC / EN 61000-4-5

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 24˚C Humidity: 48% Pressure: 836 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
8/18/2023	0800	Performed 4-5 pre-test verification prior to test	TW	---
	0810	Setup EUT on GP#1, SN: EV032334P029, Meanwell Power Supply, PN: EPP-200-24	TW	---
	0815	Begin Surge Immunity. Mains: +/- 2kV CM, +/- 2kV DM, (0, 90, 180, 270) Hz (4.1.2.7)	TW	---
	1330	Completed 4-5 testing	TW	Pass

National Technical Systems

Surge Immunity per IEC / EN 61000-4-5

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 24°C Humidity: 48% Pressure: 836 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Voltage (kV)	Polarity +/-	L1	L2	L3	N	PE	Phase (deg)	Number of Pulses	Delay (sec)	Comments	Criteria Met	Pass/ Fail
0.5	±	X			X		0	5	45	Differential Mode	A	Pass
0.5	±	X			X		90	5	45		A	Pass
0.5	±	X			X		180	5	45		A	Pass
0.5	±	X			X		270	5	45		A	Pass
0.5	±	X				X	0	5	45	Common Mode Line	A	Pass
0.5	±	X				X	90	5	45		A	Pass
0.5	±	X				X	180	5	45		A	Pass
0.5	±	X				X	270	5	45		A	Pass
0.5	±				X	X	0	5	45	Common Mode Neutral	A	Pass
0.5	±				X	X	90	5	45		A	Pass
0.5	±				X	X	180	5	45		A	Pass
0.5	±				X	X	270	5	45		A	Pass
1.0	±	X			X		0	5	60	Differential Mode	A	Pass
1.0	±	X			X		90	5	60		A	Pass
1.0	±	X			X		180	5	60		A	Pass
1.0	±	X			X		270	5	60		A	Pass
1.0	±	X				X	0	5	60	Common Mode Line	A	Pass
1.0	±	X				X	90	5	60		A	Pass
1.0	±	X				X	180	5	60		A	Pass
1.0	±	X				X	270	5	60		A	Pass
1.0	±				X	X	0	5	60	Common Mode Neutral	A	Pass
1.0	±				X	X	90	5	60		A	Pass
1.0	±				X	X	180	5	60		A	Pass
1.0	±				X	X	270	5	60		A	Pass
2.0	±	X			X		0	5	60	Differential Mode	A	Pass
2.0	±	X			X		90	5	60		A	Pass
2.0	±	X			X		180	5	60		A	Pass
2.0	±	X			X		270	5	60		A	Pass
2.0	±	X				X	0	5	60	Common Mode Neutral	A	Pass
2.0	±	X				X	90	5	60		A	Pass
2.0	±	X				X	180	5	60		A	Pass
2.0	±	X				X	270	5	60		A	Pass

5.2.4 Test Photographs

Surge Immunity Test Setup

5.2.5 Test Equipment List

Table 5.2-1: Surge Immunity Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059917	Ground Plane (Fixed)	NTS Labs, LLC	GP1	NCR	NCR
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC059768	Generator (Spike/Transient)	Thermo Fisher Scientific	EMC Pro Plus	11/09/2022	11/09/2023
WC070508	Software	Keytek	CEWare	NCR	NCR
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.3 Radiated RF Immunity

5.3.1 Test Procedure

VVSG 2.0

EN61000-4-3

5.3.2 Test Result

Passed

5.3.3 Test Datasheets

National Technical Systems

Radiated RF Immunity per IEC / EN 61000-4-3

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 25˚C Humidity: 44% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
8/18/2023	0800	Setup and performed 4-3 pre-test verification prior to test	TW	Complete
	0815	Setup the ExpressVote3, SN:EV032334P026 in GP0 chamber	TW	---
	0825	Begin Radiated RF Immunity 10V/m, 80 - 1000 MHz, 1% Step, 80% AM, 1kHz sine, 3s dwell (4.1.2.10)	TW	---
	1330	Completed 4-3 testing	TW	Pass

National Technical Systems

Radiated RF Immunity per IEC / EN 61000-4-3

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 25˚C Humidity: 44% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

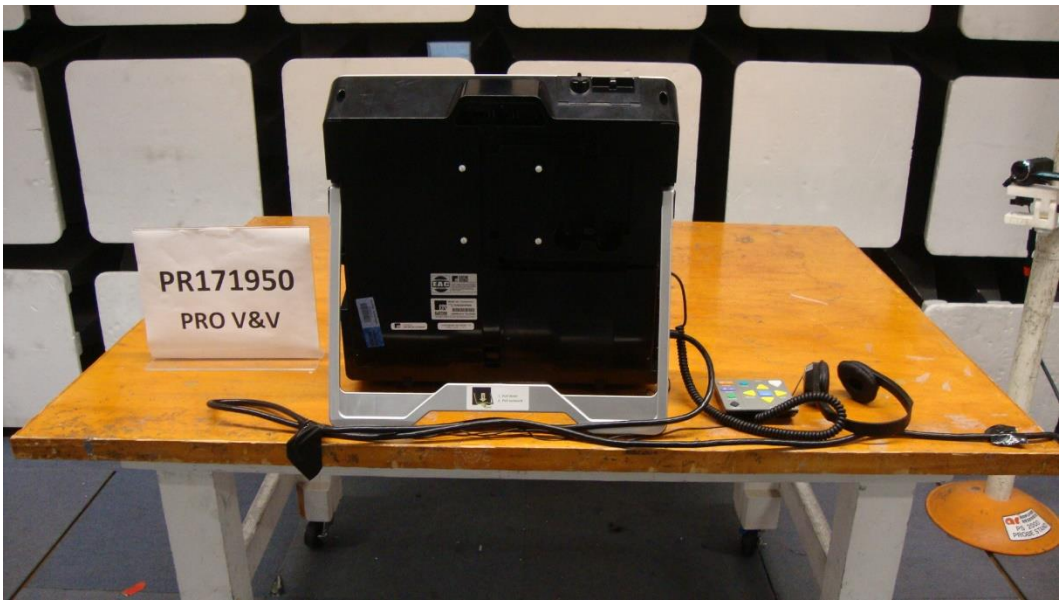
Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Frequency	Modulation				Step Size	Field	Polarity	Dwell	Comments	Criteria Met	Pass / Fail
(MHz)	Type	%	Freq	Form	(%)	(V/m)	(V or H)	(sec)			
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Front	A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	H	3		A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Right	A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	H	3		A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Back	A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	H	3		A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Left	A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	H	3		A	Pass

5.3.4 Test Photographs

4-3 Test Setup - Front



4-3 Test Setup - Back

4-3 Test Setup - Left

4-3 Test Setup - Right

5.3.5 Test Equipment List

Table 5.3-1: Radiated RF Immunity Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC059712	Coupler (Bi-Directional)	Werlatone	C3908-10	NCR	NCR
WC059713	Amplifier (Pre/RF/Low Noise)	Ophir RF	5127F	NCR	NCR
WC059724	Power Supply (AC)	Pacific Power Source	TMX-125	NCR	NCR
WC059805	Antenna (Log Periodic)	ETS-Lindgren	3142B	NCR	NCR
WC059852	Generator (Signal)	Anritsu Wiltron	69367B	02/24/2023	02/24/2024
WC059873	Coupler (Directional)	Narda	3044B-10	NCR	NCR
WC059916	Chamber (EMI, Semi-Anechoic)	National Technical Systems	GP0	NCR	NCR
WC070467	Meter (Power)	Agilent Technologies	E4418B	04/11/2023	04/11/2024
WC070506	Sensor (Power)	Hewlett Packard	E4421A	04/14/2023	04/14/2024
WC078469	Software	ETS-Lindgren	C47213	NCR	NCR
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024
WC080773	Cable (Test)	N/A	90-195-048	09/26/2023	09/26/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.4 Voltage Dips and Interruptions

5.4.1 Test Procedure

VVSG 2.0

EN61000-4-11

5.4.2 Test Result

Passed

5.4.3 Test Datasheets

National Technical Systems

Voltage Dips and Interrupts per IEC / EN 61000-4-11

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 25˚C Humidity: 44% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Normal Operation

Test Engineer: T, Wittig

Date	Time	Log Entries	Initials	Result
		Performed 4-11 pre-test verification prior to testing	TW	Complete
		Set up EUT for 4-11 testing		
8/18/2023	0810	Begin Voltage Dips and Interruptions. Electric power increases of 7.5% and reductions of 12.5% of nominal specified power. (Inc./Red. of Nom. Voltage) (4.1.2.5)	TW	Pass
	1215	Begin Voltage Dips and Interruptions. Surge of +/- 15% line variation of nominal line voltage. (Surge of +/- 15%) (4.1.2.5)	TW	Pass
		4-11 is complete except Surges of -15% line variations of nominal voltage (102V) and Voltage Dips and Interruptions. 70% nom, 0.6 cycles / 40% nom, 6 cycles & 1 sec./ 0% nom, 300 cycles	TW	---
8/21/2023	0830	Resumed Surges of -15% line variations of nominal voltage (102V)	TW	---
	1120	Begin Voltage Dips and Interruptions. 70% nom, 0.6 cycles / 40% nom, 6 cycles & 1 sec. / 0% nom, 300 cycles. (4.1.2.5)	TW	---
	1140	Completed all testing	TW	Pass

National Technical Systems

Voltage Dips and Interrupts per IEC / EN 61000-4-11

Standard Referenced: VVSG 2.0 Date: 8/18/2023

Temperature: 25°C Humidity: 44% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Normal Operation

Test Engineer: T, Wittig

% Nominal	No. of Cycles	Phase Angle (deg) 0	90	180	270	Time between dropouts (sec)	Number of tests	Comments	Criteria Met	Pass / Fail
40%	6	x				10	3		A	Pass
40%	6		x			10	3		A	Pass
40%	6			x		10	3		A	Pass
40%	6				x	10	3		A	Pass
40%	60	x				10	3		A	Pass
40%	60		x			10	3		A	Pass
40%	60			x		10	3		A	Pass
40%	60				x	10	3		A	Pass
70%	0.6	x				10	3		A	Pass
70%	0.6		x			10	3		A	Pass
70%	0.6			x		10	3		A	Pass
70%	0.6				x	10	3		A	Pass
0%	300	x				10	3		A	Pass
0%	300			x		10	3		A	Pass
Line Voltage Variation Tests										
129 Vac Line Voltage Variations (+7.5% of nominal 120V) 2 hrs.									A	Pass
105 Vac Line Voltage Variations (-12.5% of nominal 120V) 2 Hrs.									A	Pass
Surges of +15% line variations of nominal voltage (138V) 2 Hrs.									A	Pass
Surges of -15% line variations of nominal voltage (102V) 2 Hrs									A	Pass

5.4.4 Test Photographs

Voltage Dips and Interruptions Test Setup

5.4.5 Test Equipment List

Table 5.4-1: Voltage Dips and Interruptions Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059918	Ground Plane (Fixed)	NTS Labs, LLC	GP2	NCR	NCR
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC059768	Generator (Spike/Transient)	Thermo Fisher Scientific	EMC Pro Plus	11/09/2022	11/09/2023
WC059770	Power Supply (AC)	California Instruments	5001IX-CTS	NCR	NCR
WC070508	Software	Keytek	CEWare	NCR	NCR
WC076858	Oscilloscope (Digital)	Agilent Technologies	InfiiVision DSOX 2022A	08/24/2022	12/20/2023
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.5 Electrical Fast Transients (EFT) / Burst

5.5.1 Test Procedure

VVSG 2.0

EN61000-4-4

5.3.2 Test Result

Passed

5.5.3 Test Datasheets

National Technical Systems

Electrical Fast Transient/Burst per IEC / EN 61000-4-4

Standard Referenced: VVSG 2.0 Date: 8/21/2023

Temperature: 23˚C Humidity: 53% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
8/21/2023	0810	Setup and performed 4-4 pre-test verification	TW	Complete
	0825	Setup the ExpressVote3, SN: EV032334P029	TW	Complete
	0840	Begin Electrical Fast Transient / Burst. Mains: +/- 2kV, I/O: +/- 1kV. (4.1.2.6)	TW	---
	0915	Completed 4-4 testing	TW	Pass

National Technical Systems

Electrical Fast Transient/Burst per IEC / EN 61000-4-4

Standard Referenced: VVSG 2.0 Date: 8/21/2023

Temperature: 23˚C Humidity: 53% Pressure: 843 mb

Input Voltage: 120Vac/60Hz Capacitive Coupling Clamp Verification N/A

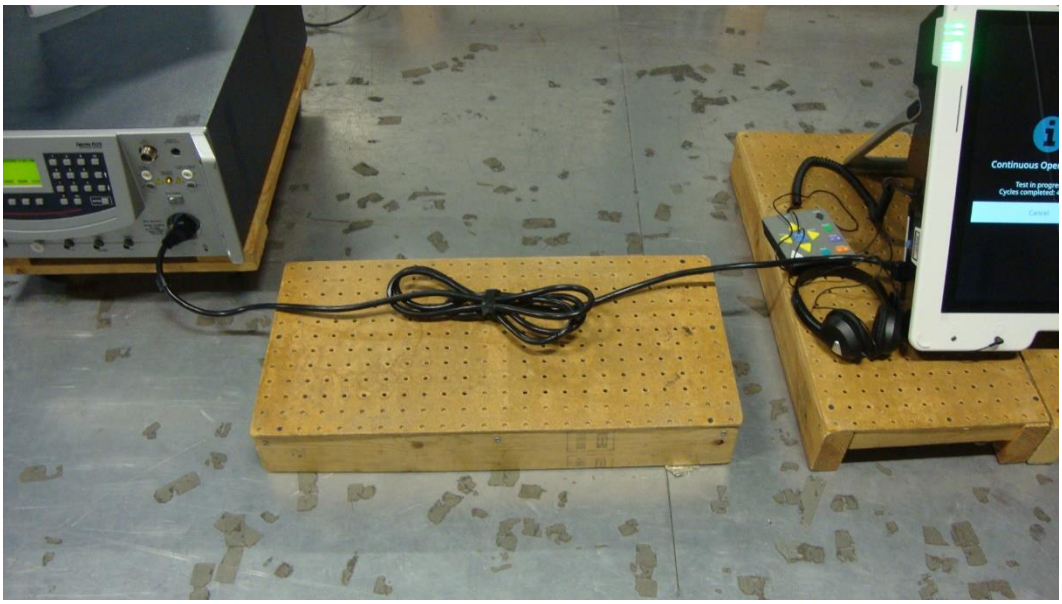
Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Voltage (kV)	Polarity +/-	Time (sec)	Injection Type	L1	L2	L3	N	PE	Rep Freq.	Comments	Criteria Met	Pass/ Fail
2.0	±	60	CDN	X					100kHz	AC Mains	A	Pass
2.0	±	60	CDN				X		100kHz		A	Pass
2.0	±	60	CDN					X	100kHz		A	Pass
2.0	±	60	CDN	X			X	X	100kHz		A	Pass

5.5.4 Test Photographs

4-4 Test Setup



4-4 Test Setup - AC Mains

5.5.5 Test Equipment List

Table 5.5-1: EFT/Burst Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059623	Chamber (EMI, Semi-Anechoic)	Rayproof	SR2	NCR	NCR
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC059767	Power Supply (AC)	California Instruments	1251P	NCR	NCR
WC059768	Generator (Spike/Transient)	Thermo Fisher Scientific	EMC Pro Plus	11/09/2022	11/09/2023
WC070508	Software	Keytek	CEWare	NCR	NCR
WC070617	Oscilloscope (Digital)	Keysight Technologies	DSOX 2022A	07/27/2022	07/27/2024
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.6 Conducted RF Immunity

5.6.1 Test Procedure

VVSG 2.0

EN61000-4-6

5.6.2 Test Result

Passed

5.6.3 Test Datasheets

National Technical Systems

Conducted RF Immunity per IEC / EN 61000-4-6

Standard Referenced: VVSG 2.0 Date: 8/21/2023

Temperature: 23˚C Humidity: 53% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
8/2/2023	0950	Setup for 4-6 testing	TW	Complete
	1000	Begin Conducted RF Immunity. 10Vrms, 0.15 - 80 MHz, 1% Step, 80% AM, 1kHz sine, 3s dwell.(4.1.2.11)	TW	---
	1100	Completed 4-6 testing	TW	Pass

National Technical Systems

Conducted RF Immunity per IEC / EN 61000-4-6

Standard Referenced: VVSG 2.0 Date: 8/21/2023

Temperature: 23˚C Humidity: 53% Pressure: 843 mb

Input Voltage: 120Vac/60Hz

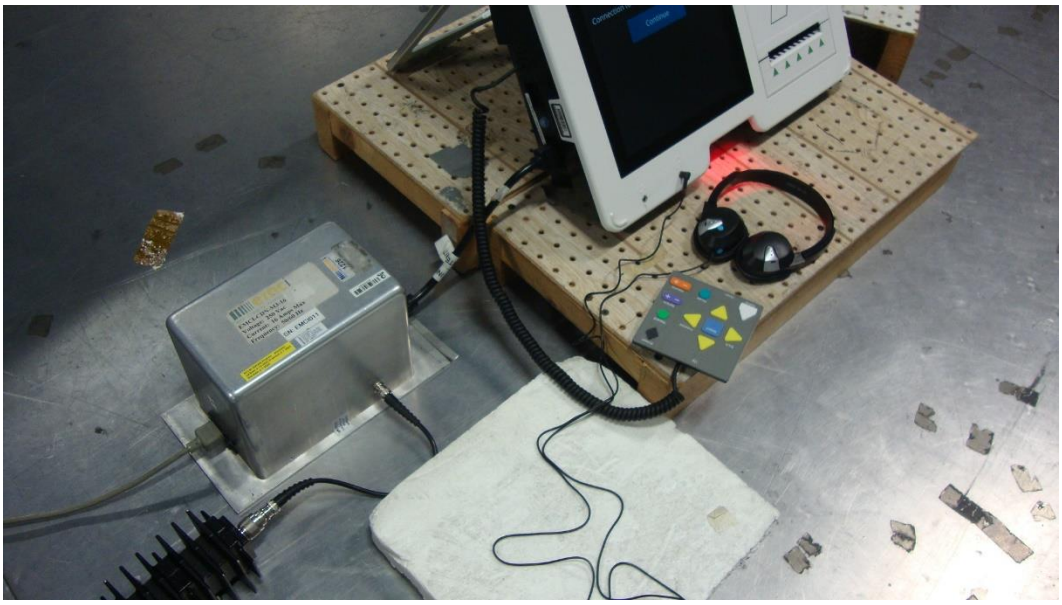
Configuration of Unit: Shoe-shine Mode

Test Engineer: T. Wittig

Frequency (MHz)	Modulation			Level	Dwell	Comments	Criteria Met	Pass/ Fail
	Type	%	Freq	(V/m)	(sec)			
0.150 - 80.0	AM	80	1KHz	10	3	AC Mains	A	Pass

5.6.4 Test Photographs

4-6 Test Setup



4-6 Test Setup - AC Mains

5.6.5 Test Equipment List

Table 5.6-1: Conducted RF Immunity Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059658	Coupler (Bi-Directional)	Werlatone	C9475	08/25/2023	08/25/2024
WC059661	Network (Coupling/Decoupling)	EMC Integrity	EMCI-CDN-M3-16	02/24/2023	03/03/2024
WC059692	Meter (Digital Multimeter)	Fluke	83-3	09/12/2022	09/12/2023
WC059694	Generator (Signal)	Hewlett Packard	8648C	04/11/2023	04/11/2024
WC059699	Amplifier (Wideband/Power)	Instruments For Industry	M100	NCR	NCR
WC059773	Attenuator (Coaxial)	Aeroflex/Weinschel	40-6-34	NCR	NCR
WC059918	Ground Plane (Fixed)	National Technical Systems	GP2	NCR	NCR
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/15/2023	02/15/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

End of Test Report