Element Materials Technology Denver-Longmont A.K.A. NTS Labs, LLC Test Report for Electromagnetic Interference (EMI) Testing of the SMARTMATIC VSR 2.1 PCOS and UPS

Prepared For
Pro V&V, Inc | 6705 Odyssey Drive, Suite C | Huntsville, AL 35806

Prepared By
Element Materials Technology Denver-Longmont | 1736 Vista View Drive | Longmont, CO 80504-5242 | 303-776-7249 | www.element.com

Lori Hartman
Preparer

Eugene Devito
Program Manager

Revision History

Rev.	Description	Issue Date
0	Initial Release	03/22/2024
1	Corrected data for sections 5.6 thru 5.9	05/15/2024
2	Change all standard references to IEC 61000-4-XX & removed the repeated sections 5.7 – 5.9	08/12/2025

Table of Contents

List of Tables

1.0 Introduction

This document presents the test procedures used and the results obtained during the performance of an Electromagnetic Interference (EMI) test program at Element Materials Technology Denver-Longmont (hereafter referred to as "Element"). The test program was conducted to assess the ability of the specified Equipment Under Test (EUT) to successfully satisfy the requirements defined in the test specification.

2.0 References

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

- Test Specification: See Table 5.0-1
- Pro V&V, Inc Purchase Order 2023-008,2024-001 dated 03/17/2023,02/12/2024.
- Element Quotation OP0636252 dated 03/16/2023.
- ISO/IEC 17025:2017(E) *General Requirements for the Competence of Testing and Calibration Laboratories,* dated 11/2017

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	2	SMARTMATIC VSR1 2.1 PCOS	A4-800	GESA481A01000165, GESA481A01000167
2	1	UPS	APC SMT-1500C (UPS)	352223X14214

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 (Immunity)

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
Radiated Immunity	V/m	80MHz - 10GHz	.-26.3% to 29.97%
ESD	KV	NA	.+/- 8.6%
Fast Transients	Voltage	NA	.+/- 5.98%
	Time	NA	.+/- 8.6%
Surge	Voltage	NA	.+/- 4.9%
Conducted Immunity (CDN)	Voltage	NA	.-12.6% to 13.3%
Conducted Immunity (BCI)	Voltage	NA	.-13.5% to 15.3%
Voltage Dips / Interrupts	Voltage	NA	.+/- 2.3%
	Time	NA	.+/- 0.08 ms
Magnetic Immunity	Amps	NA	.+/- 0.8%
Pulsed Magnetic Immunity	Amps	NA	.+/- 9.9%

5.0 Test Description and Results

Table 5.0-1: Summary of Test Information & Results

Section	Test	Specification	Test Facility	Test Date	Part #	Serial #	Test Result
5.1	Radiated RF Immunity (4.1.2.10)	IEC/EN 61000-4-3:2020	Longmont	03/12/2024 - 03/13/2024	A4-800	GESA481A01000165	Passed
5.2	Conducted RF Immunity (4.1.2.11)	IEC/EN 61000-4-3:2020	Longmont	03/13/2024	A4-800	GESA481A01000165	Passed
5.3	Voltage Dips and Interruptions (Inc./Red. of Nom. Voltage) (4.1.2.5)	IEC/EN 61000-4-11:2020	Longmont	03/18/2024	A4-800	GESA481A01000165	Passed
5.4	Electrical Fast Transient / Burst (4.1.2.6)	IEC/EN 61000-4-4:2012	Longmont	03/13/2024	A4-800	GESA481A01000165	Passed
5.5	Surge Immunity (4.1.2.7)	IEC/EN 6100-4-5:2014+A1:2017	Longmont	03/14/2024	A4-800	GESA481A01000165	Passed
5.6	Electrostatic Discharge (4.1.2.8)	IEC 61000-4-2:2008	Longmont	03/15/2024	A4-800	GESA481A01000165	Passed

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

5.1 Radiated RF Immunity (4.1.2.10)

5.1.1 Test Procedure

The EUT was tested in accordance with 61000-4-3:2020.

5.1.2 Test Result

The EUT passed the defined requirements.

5.1.3 Test Datasheets

Element Materials Technology

Radiated RF Immunity per IEC 61000-4-3: 2020

Standard Referenced: **IEC 61000-4-3: 2020** Date: 3/12/204

Temperature: 16°C Humidity: 15% Pressure: 833 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
3/12/2024	1100	Performed 4-3 pre-test verfication prior to testing	TW	Complete
	1210	Setup EUT in GP0	TW	Complete
	1337	Begin Radiated RF Immunity 10V/m, 80 - 1000 MHz, 1% Step, 80% AM, 1kHz sine, 3s dwell	TW	---
		Completed front and right sides, V-H poles	TW	---
	1600	Done for the day	TW	---
3/13/2024	0815	Resumed 4-3 testing on the back side	TW	---
	1045	Completed 4-3 testing on 4 sides	TW	Pass

Element Materials Technology

Radiated RF Immunity per IEC 61000-4-3: 2020

Standard Referenced: IEC 61000-4-3: 2020 Date: 3/12/204

Temperature: 16°C Humidity: 15% Pressure: 833 mb

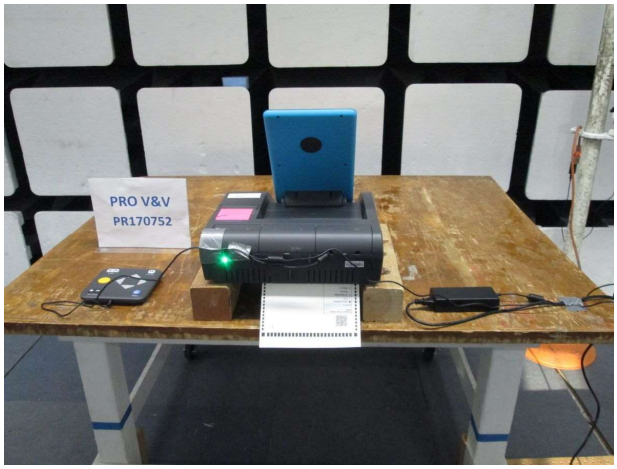
Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

Test Engineer: T. Wittig

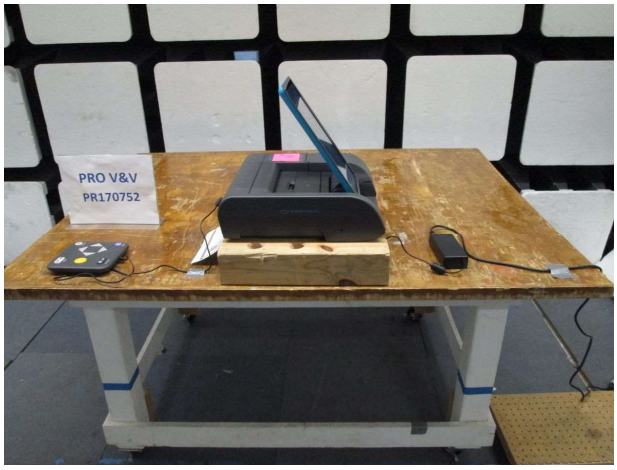
Frequency	Modulation				Step Size	Field	Polarity	Dwell	Comments	Criteria Met	Pass / Fail
(MHz)	Type	%	Freq	Form	(%)	(V/m)	(V or H)	(sec)			
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Front	A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	H	3		A	Pass
80 - 1000	AM	80	1kHz	Sine	1	10	V	3	Right	A	Pass
80 - 1000	AM	80	1kHz	Sine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

5.1.4 Test Photographs



4-3_Test Setup - Back

4-3_Test Setup - Front



4-3_Test Setup - Left

4-3_Test Setup - Right

5.1.5 Test Equipment List

Table 5.1-1: Radiated RF Immunity (4.1.2.10) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059457	Coupler (Bi-Directional)	Werlatone	C3908-10	08/21/2020	NCR
WC059710	Amplifier (Pre/RF/Low Noise)	Ophir RF	5127F	09/17/2012	NCR
WC059712	Coupler (Bi-Directional)	Werlatone	C3908-10	06/14/2021	NCR
WC059797	Generator (Signal)	Wiltron	68369B	06/23/2022	06/23/2024
WC059805	Antenna (Log Periodic)	ETS-Lindgren	3142B	NCR	NCR
WC078469	Software	ETS-Lindgren	C47213	01/01/1900	NCR
WC078490	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/19/2024	02/28/2025
WC080773	Cable (Test)	National Technical Systems	90-195-048	09/26/2023	09/26/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.2 Conducted RF Immunity (4.1.2.11)

5.2.1 Test Procedure

The EUT was tested in accordance with IEC/EN 6100-4-6:2013.

5.2.2 Test Result

The EUT passed the defined requirements.

5.2.3 Test Datasheets

Element Materials Technology

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

Standard Referenced: IEC/EN 61000-4-6 Date: 3/13/2024

Temperature: 20°C Humidity: 30% Pressure: 828 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
3/13/2024	1211	Setup EUT for 4-6 testing	TW	Complete
	1225	Begin Conducted RF Immunity. 10Vrms, 0.15 - 80 MHz, 1% Step, 80% AM, 1kHz sine, 3s dwell. 120Vac/60 Hz (4.1.2.11)	TW	---
	1345	Completed 4-6 testing	TW	Pass

Element Materials Technology

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

Standard Referenced: **IEC/EN 61000-4-6** Date: 3/13/2024

Temperature: 20°C Humidity: 30% Pressure: 828 mb

Input Voltage: 120Vac/60Hz

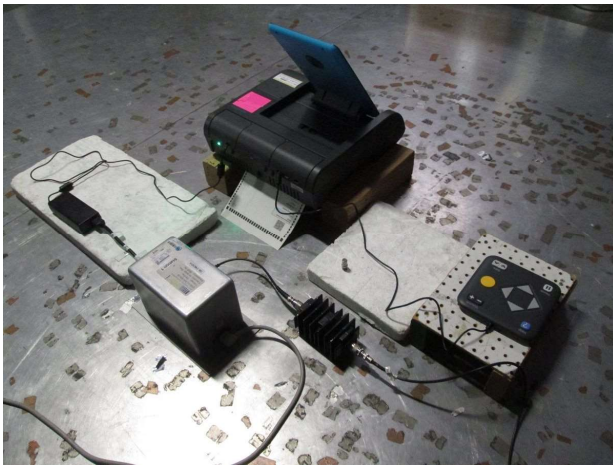
Configuration of Unit: Shoeshine Mode

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	3	3	AC Mains	A	Pass

5.2.4 Test Photographs

4-6 Test Setup


4-6 Test Setup _AC Mains

5.2.5 Test Equipment List

Table 5.2-1: Conducted RF Immunity (4.1.2.11) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059657	Amplifier (Pre/RF/Low Noise)	Instruments For Industry	M100	NCR	NCR
WC059658	Coupler (Bi-Directional)	Werlatone	C9475	08/25/2023	08/25/2024
WC059675	Power Supply (AC)	California Instruments	5001IX208-150/300	09/07/2023	09/07/2024
WC059694	Generator (Signal)	Hewlett Packard	8648C	04/11/2023	04/11/2024
WC059698	Network (Coupling/Decoupling)	EMC Integrity	EMCI-CDN M3-16	12/18/2023	02/09/2025
WC059772	Analyzer (Spectrum)	Rigol Technologies	DSA815	06/29/2023	06/30/2024
WC078480	TBD	Pasternack Enterprises	PE7002-6	NCR	NCR
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/19/2024	02/28/2025
WC078542	Meter (Milliohm)	Extech Instruments	380460	11/03/2023	11/03/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.3 Voltage Dips and Interruptions (Inc./Red. of Nom. Voltage) (4.1.2.5)

5.3.1 Test Procedure

The EUT was tested in accordance with IEC/EN 61000-4-11:2020

5.3.2 Test Result

The EUT passed the defined requirements.

5.3.3 Test Datasheets

Element Materials Technology

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

Standard Referenced: **IEC/EN 61000-4-11** Date: 3/18/2024

Temperature: 24˚C Humidity: 16% Pressure: 842 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Normal Operation

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
3/18/2024		Performed 4-11 pre-test verification	TW	---
	1100	Begin 4-11 at 132Vac/60Hz,10% above the nominal voltage (120Vac/60Hz)	TW	---
	1200	Begin Voltage Dips and Interruptions. 70% nom, 0.6 cycles / 40% nom, 6 cycles & 1 sec./ 0% nom, 300 cycles. 120Vac/60Hz (4.1.2.5)	TW	---
		Begin 4-11 at 144Vac/60Hz for 500ms	TW	---
	1230	Testing complete	TW	Pass

Element Materials Technology

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

Standard Referenced: **IEC/EN 61000-4-11** Date: 3/18/2024

Temperature: 24˚C Humidity: 16% Pressure: 842 mb

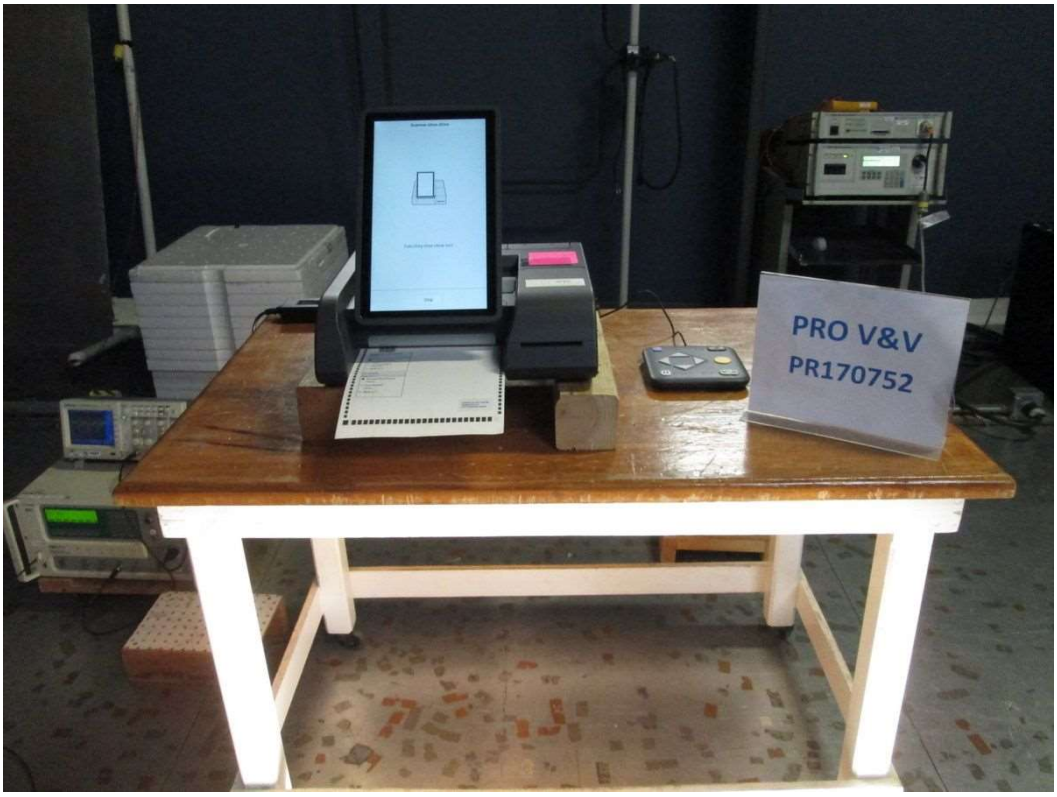
Input Voltage: 120Vac/60Hz

Configuration of Unit: Normal Operation

Test Engineer: T. Wittig

% Nominal	No. of Cycles	Phase Angle (deg)				Time between dropouts (sec)	Number of tests	Comments	Criteria Met	Pass/ Fail
		0	90	180	270					
0%	0.6	x				10	3		A	Pass
0%	0.6		x			10	3		A	Pass
0%	0.6			x		10	3		A	Pass
0%	0.6				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%	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
0%	300	x				10	3		A	Pass
0%	300			x		10	3		A	Pass
132Vac/60Hz, 10% above the nominal voltage (120Vac/60Hz) for 1 hour									A	Pass
144Vac/60Hz for 500ms									A	Pass

5.3.4 Test Photographs



4-11_Test Setup

5.3.5 Test Equipment List

Table 5.3-1: Voltage Dips and Interruptions (Inc./Red. of Nom. Voltage) (4.1.2.5) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059675	Power Supply (AC)	California Instruments	5001IX208-150/300	09/07/2023	09/07/2024
WC059683	Oscilloscope (Digital)	Tektronix	TDS2002B	08/29/2023	08/29/2024
WC060072	Generator (EFT)	Keytek	EMC-Pro	12/05/2023	12/05/2024
WC070508	Software	Keytek	CEWare	NCR	NCR
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/19/2024	02/28/2025

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.4 Electrical Fast Transient / Burst (4.1.2.6)

5.4.1 Test Procedure

The EUT was tested in accordance with IEC/EN 61000-4-4:2012.

5.4.2 Test Result

The EUT passed the defined requirements.

5.4.3 Test Datasheets

Element Materials Technology

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

Standard Referenced: IEC/EN 61000-4-4 Date: 3/13/2024

Temperature: 20°C Humidity: 30% Pressure: 828 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
3/13/2024	1355	Performed 4-4 pre-test verification	TW	Complete
		Setup EUT on GP #2	TW	Complete
	1450	Begin Electrical Fast Transient / Burst. Mains: +/- 2kV, I/O: +/- 1kV. 120Vac/60 Hz (4.1.2.6)	TW	---
	1530	Completed 4-4 testing on AC mains	TW	Pass

Element Materials Technology

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

Standard Referenced: **IEC/EN 61000-4-4** Date: 3/13/2024

Temperature: 20°C Humidity: 30% Pressure: 828 mb

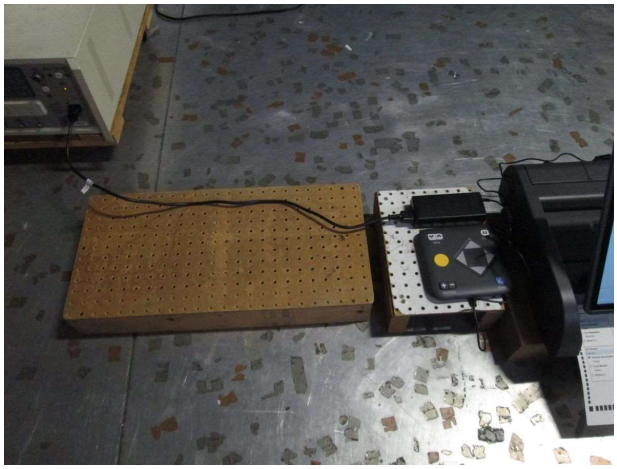
Input Voltage: 120Vac/60Hz Capacitive Coupling Clamp Verification N/A

Configuration of Unit: Shoeshine Mode

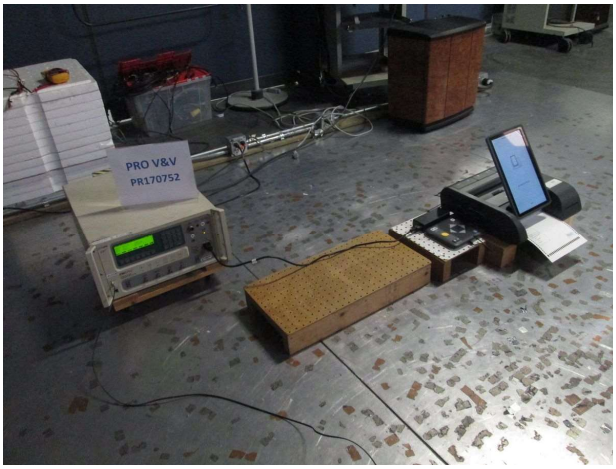
Test Engineer: T. Wittig

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

5.4.4 Test Photographs



4-4 Test Setup AC _Mains



4-4 Test Setup

5.4.5 Test Equipment List

Table 5.4-1: Electrical Fast Transient / Burst (4.1.2.6) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059675	Power Supply (AC)	California Instruments	5001IX208-150/300	09/07/2023	09/07/2024
WC059683	Oscilloscope (Digital)	Tektronix	TDS2002B	08/29/2023	08/29/2024
WC060072	Generator (EFT)	Keytek	EMC-Pro	12/05/2023	12/05/2024
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/19/2024	02/28/2025

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.5 Surge Immunity (4.1.2.7)

5.5.1 Test Procedure

The EUT was tested in accordance with IEC/EN 61000-4-5:2014+A1:2017.

5.5.2 Test Result

The EUT passed the defined requirements.

5.5.3 Test Datasheets

Element Materials Technology

Surge Immunity per IEC/EN 61000-4-5

Standard Referenced: **IEC/EN 61000-4-5** Date: 3/14/2024

Temperature: 17˚C Humidity: 29% Pressure: 838 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

Test Engineer: T. Wittig

Date	Time	Log Entries	Initials	Result
3/14/2024	0730	Performed 4-5 pre-test verification	TW	Complete
	0727	Begin Surge Immunity. Mains: +/- 2kV CM, +/- 2kV DM, (0, 90, 180, 270) 120 VAC / 60 Hz (4.1.2.7)	TW	---
	1515	Completed 4-5 testing	TW	Pass

Element Materials Technology

Surge Immunity per IEC/EN 61000-4-5

Standard Referenced: IEC/EN 61000-4-5 Date: 3/14/2024

Temperature: 17°C Humidity: 29% Pressure: 838 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine 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	30	Differential Mode	A	Pass
0.5	±	X			X		90	5	30		A	Pass
0.5	±	X			X		180	5	30		A	Pass
0.5	±	X			X		270	5	30		A	Pass
0.5	±	X				X	0	5	30	Common Mode Line	A	Pass
0.5	±	X				X	90	5	30		A	Pass
0.5	±	X				X	180	5	30		A	Pass
0.5	±	X				X	270	5	30		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	Common Mode Line	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

5.5.4 Test Photographs

4-5 Test Setup

5.5.5 Test Equipment List

Table 5.5-1: Surge Immunity (4.1.2.7) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059675	Power Supply (AC)	California Instruments	5001IX208-150/300	09/07/2023	09/07/2024
WC059683	Oscilloscope (Digital)	Tektronix	TDS2002B	08/29/2023	08/29/2024
WC060072	Generator (EFT)	Keytek	EMC-Pro	12/05/2023	12/05/2024
WC078488	Meter (Hydrometer)	Extech Instruments	Datalogger 42270	02/19/2024	02/28/2025

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

5.6 Electrostatic Discharge (4.1.2.8)

5.6.1 Test Procedure

The EUT was tested in accordance with IEC/EN 61000-4-2:2008.

5.6.2 Test Result

The EUT passed the defined requirements.

5.6.3 Test Datasheets

Element Materials Technology

Electrostatic Discharge per IEC/EN 61000-4-2

Standard Referenced:	IEC/EN 61000-4-2	Date:	3/15/2024
Temperature:	19˚C	Humidity: 33%	Pressure: 844 mb
Input Voltage:	120Vac/60Hz		
Configuration of Unit:	Shoeshine Mode		
Test Engineer:	T. Wittig		

Date	Time	Log Entries	Initials	Result
3/15/2024	0730	Performed 4-2 pre-test verification, bleed-off cables measure: 937k ohms and 936k ohms	TW	Complete
	1011	Begin Electrostatic Discharge. +/- 8kV Contact, +/-2, 4, 8, 15kV Air. 120 VAC / 60 Hz (4.1.2.8)	TW	---
	1354	Completed 4-2 testing	TW	Pass

Element Materials Technology

Electrostatic Discharge per IEC/EN 61000-4-2

Standard Referenced: **IEC/EN 61000-4-2** Date: 3/15/2024

Temperature: 19°C Humidity: 33% Pressure: 844 mb

Input Voltage: 120Vac/60Hz

Configuration of Unit: Shoeshine Mode

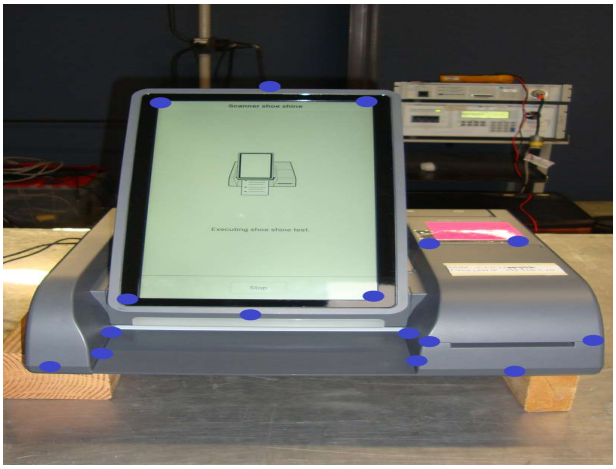
Test Engineer: T. Wittig

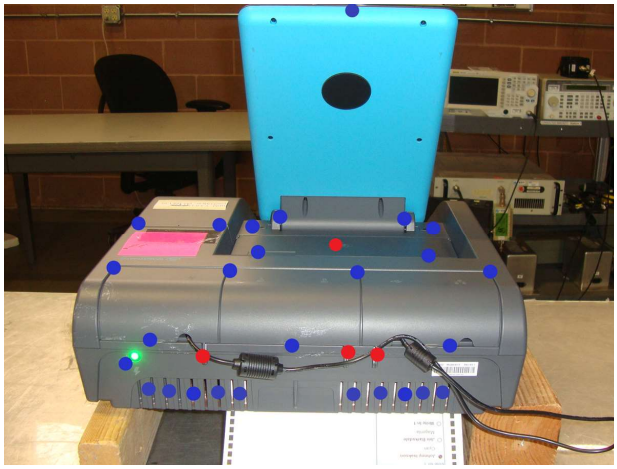
Test Location	Voltage Level	Polarity		Number of Pulses	Pulses Per Second	Comments	Criteria Met	Pass/ Fail
	(kV)	+	-					
Indirect Discharge Points								
VCP	8	X	X	10	1	Front Side	A	Pass
VCP	8	X	X	10	1	Left Side	A	Pass
VCP	8	X	X	10	1	Right Side	A	Pass
VCP	8	X	X	10	1	Back Side	A	Pass
HCP	8	X	X	10	1	Edge of HCP at Front of UUT	A	Pass
Contact Discharge Points - **RED** DOTS								
Photo 1.	8	X	X	10	1	ND	---	---
Photo 2.	8	X	X	10	1		A	Pass
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	---	---
Photo 7.	8	X	X	10	1	ND	---	---
Photo 8.	8	X	X	10	1	ND	---	---
Air Discharge Points - **BLUE** DOTS								
Photo 1.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 2.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 3.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 4.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 5.	2, 4, 8, 15	X	X	10	1	ND	---	---
Photo 6.	2, 4, 8, 15	X	X	10	1	ND	---	---
Photo 7.	2, 4, 8, 15	X	X	10	1		A	Pass
Photo 8.	2, 4, 8, 15	X	X	10	1	ND	---	---

ND: No Discharge points found

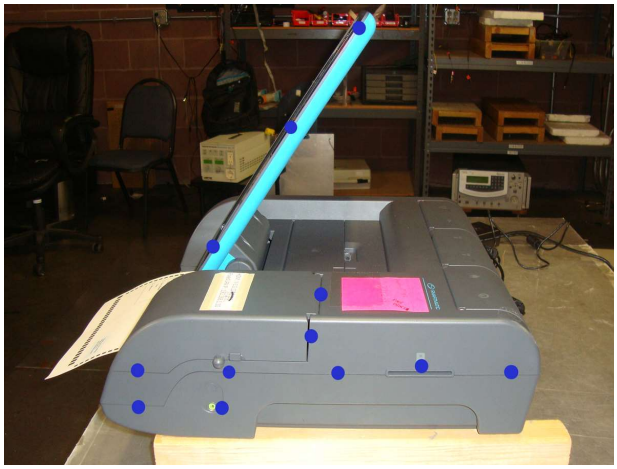
5.6.4 Test Photographs

4-2_Test Setup Photo


4-2_Photo 1

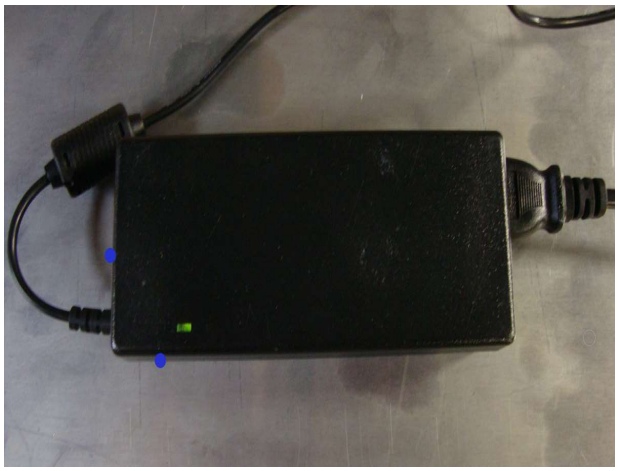

4-2_Photo 2

4-2_Photo 3


4-2_Photo 4

4-2_Photo 5

4-2_Photo 6



4-2_Photo 7

4-2_Photo 8

5.6.5 Test Equipment List

Table 5.6-1: Electrostatic Discharge (4.1.2.8) Test Equipment List

Asset Number	Asset Type	Manufacturer	Model	Calibrated	Due
WC059439	Meter (Digital Multimeter)	Fluke	85	08/28/2023	08/28/2024
WC059665	Gun (ESD Simulator)	EMC-Partner	ESD3000	07/21/2023	07/31/2024
WC059675	Power Supply (AC)	California Instruments	5001IX208-150/300	09/07/2023	09/07/2024

Calibration Abbreviations
CAL: Calibration
NCR: No Calibration Required

End of Test Report