

Los Angeles County VSAP Tally 2.1 Voting System Environmental Hardware Test Report for California Secretary of State

CAF-20004-ENVIRTR-01

Prepared for:

Vendor Name	County of Los Angeles
Vendor System	VSAP Tally 2.1

Prepared by:



4720 Independence St.
Wheat Ridge, CO 80033
303-422-1566
www.SLICompliance.com

*Accredited by the Election Assistance Commission (EAC) for Selected Voting System Test Methods
or Services*



Copyright © 2020 by SLI ComplianceSM, a Division of Gaming Laboratories International, LLC

Revision History

Date	Release	Author	Revision Summary
July 24, 2020	1.0	Darrick Forester	Initial Release
July 31, 2020	2.0	M. Santos	Updates for CASOS comments

Disclaimer

The information reported herein must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Trademarks

- SLI is a registered trademark of SLI Compliance.
- All products and company names are used for identification purposes only and may be trademarks of their respective owners.



TABLE OF CONTENTS

INTRODUCTION 4

 QUALIFICATIONS 4

 HARDWARE TEST LAB FACILITY 4

 REFERENCE DOCUMENTS..... 4

 ATTACHMENTS 4

PRODUCT DESCRIPTION 5

 UNIT UNDER TEST..... 5

 PRODUCT INFORMATION 5

 SUPPORT EQUIPMENT (SE) 5

 ACCESSORIES..... 5

 SOFTWARE / FIRMWARE 6

ENVIRONMENTAL TEST REQUIREMENTS..... 6

 TEST PROCEDURES..... 6

Environmental Control – Transit and Storage..... 6

 NON-OPERATING ENVIRONMENTAL TEST 6

Operational Status Check 6

Bench Handling Test..... 7

Vibration Test..... 8

ENVIRONMENTAL TEST SUMMARY 9



INTRODUCTION

This test report describes the environmental testing SLI Compliance performed on the County of Los Angeles' Voting Solutions for All People Tally 2.1 (**VSAP Tally 2.1**) voting system, to the requirements as stated in the California Voting System Standards.

Qualifications

The supplied units under test (UUT) are representative of products produced in their manufacturing process except for the printer gear mechanisms. The UUTs that are part of this test effort have had their original plastic printer gear mechanisms replaced.

Hardware Test Lab Facility

NTS, Environmental/Dynamic Test Lab
1601 Dry Creek Drive
Suite 2000
Longmont, Colorado 80503

Reference Documents

1. California Voting System Standards, California Secretary of State, 10/14
2. NIST Handbook 150-2016.
3. NIST Handbook 150-22-2017.
4. SLI VSTL Quality System Manual, v 3.2, prepared by SLI, June 8, 2020.

Attachments

Attachment A - NTS Hardware Test Report TR-PR120143-REV1



Product Description

Unit Under Test

The UUTs that are part of this test effort have had their original plastic printer gear mechanisms replaced due to prior fabrication issues.

Product / Model	Serial Number	Description	Qty
Ballot Marking Device with built-in touch screen, printer, and ADA pad. (BMD)	CNGBMDAA03021426 CNGBMDAA03021516 CNGBMDAA03021514	Voting machine with a touch screen, an accessible ballot making device.	3

Product Information

Description	Dimensions	Weight
Ballot Marking Device with built-in touch screen, printer, and ADA pad. (BMD)	18" H x 30" W x 12" D	50 lbs.

Support Equipment (SE)

Product / Model	Serial Number	Description	Qty
Voting Station Cart	N/A	Cart for holding up to five voting stations, contains built in power brick, network switch, and ethernet cable	3
BBX-150 Ballot Box	CNIBBXAA01031352 CNIBBXAA01031372 CNIBBXAA01031355	Holds marked / cast ballots	3

Accessories

Type	Model	Function
Headphones	N/A	Provide the audio interface for voters which will allow them to listen to their choice of candidates and/or Propositions/Measures.



Jelly Switch	NA	Enables voters with limited body mobility to vote independently and privately.
--------------	----	--

Software / Firmware

Type	Version	Description
Firmware	0.17.0	BMD firmware

Environmental Test Requirements

Test Procedures

Environmental Control – Transit and Storage

Equipment used for vote casting or for counting votes in a precinct count system, **shall** meet these specific minimum performance standards that simulate exposure to physical shock and vibration associated with handling and transportation by surface and air common carriers, and to temperature conditions associated with delivery and storage in an uncontrolled warehouse environment:

- Bench handling equivalent to the procedure of MIL-STD-810D, Method 516.3, Procedure VI.
- Vibration equivalent to the procedure of MIL-STD-810D, Method 514.3, Category 1- Basic Transportation, Common Carrier.

Non-Operating Environmental Test

Operational Status Check

When all tests, inspections, repairs, and adjustments were completed, normal operation was verified by conducting an operational status check.

During this process, all equipment was operated in a manner and under environmental conditions that simulated election use to verify the functional status of the system.

Prior to the conduct of each of the environmental hardware non-operating tests, a supplemental test was made to determine that the operational state of the equipment is within acceptable performance limits.



Procedure

The following procedures were followed to verify the equipment status:

Step 1: Arrange the system for normal operation.

Step 2: Turn on power and allow the system to reach recommended operating temperature.

Step 3: Perform any servicing and make any adjustments necessary to achieve operational status.

Step 4: Operate the equipment in all modes, demonstrating all functions and features that would be used during election operations.

Step 5: Verify that all system functions have been correctly executed.

Failure Criteria

Upon completion of each non-operating test, the system hardware was subjected to functional testing to verify continued operability. If any portion of the voting machine or precinct counter hardware failed to remain fully functional, the testing would have been suspended until the failure was identified and corrected by the manufacturer. The system would then have been subject to a retest.

Bench Handling Test

The bench handling test simulates stresses faced during maintenance and repair of voting machines and ballot counters. All systems and components, regardless of type, must meet the requirements of this test. This test is equivalent to the procedure of MIL-STD-810D, Method 516.3, and Procedure VI.

Each of the three devices were subjected to the bench handling process, as described below.

Procedure

Step 1: Place each piece of equipment on a level floor or table, as for normal operation or servicing.

Step 2: Make provision, if necessary, to restrain lateral movement of the equipment or its supports at one edge of the device. Vertical rotation about that edge shall not be restrained.

Step 3: Using that edge as a pivot, raise the opposite edge to an angle of 45 degrees, to a height of four inches above the surface, or until the point of balance has been reached, whichever occurs first.

Step 4: Release the elevated edge so that it may drop to the test surface without restraint.

Step 5: Repeat steps 3 and 4 for a total of six events.



Step 6: Repeat steps 2, 3, and 4 for the other base edges, for a total of 24 drops for each device.

Step 7: Perform an Operational Status Check verifying continued operability of the UUT.

Results

Each of the three devices were successfully dropped as prescribed above, with no apparent damage.

Each device passed its Step 7 Operational Status Check.

Each device was deemed to have successfully passed the Bench Handling test.

Vibration Test

The vibration test simulates stresses faced during transport of voting machines and ballot counters between storage locations and polling places. All systems and components, regardless of type, must meet the requirements of this test. This test is equivalent to the procedure of MIL-STD-810D, Method 514.3, Category 1- Basic Transportation, and Common Carrier.

Each of the three devices were subjected to the vibration test process, as described below.

Procedure

Step 1: Install the test item in its transit or combination case as prepared for transport.

Step 2: Attach instrumentation as required to measure the applied excitation.

Step 3: Mount the equipment on a vibration table with the axis of excitation along the vertical axis of the equipment.

Step 4: Apply excitation as shown in MIL-STD-810D, Method 514.3-1, "Basic transportation, common carrier, vertical axis," with low frequency excitation cutoff at 10 Hz, for a period of 30 minutes.

Step 5: Repeat steps 2 and 3 for the transverse and longitudinal axes of the equipment with the excitation profiles shown in Figures 514.3-2 and 514.3-3, respectively. (Note: The total excitation period equals 90 minutes, with 30 minutes excitation along each axis.)

Step 6: Remove the test item from its transit or combination case and perform an Operational Status Check verifying continued operability of the UUT.



Results

Each of the three devices were successfully endured the excitation period as prescribed above, with no apparent damage.

Each device passed its Step 6 Operational Status Check.

Each device was deemed to have successfully passed the Vibration test.

Environmental Test Summary

Table 1 shows the tests performed on the UUT.

Table 1 – County of Los Angeles’ VSAP Tally 2.1 Hardware Tests Performed

Non-Operating Environmental Tests			
Test	Test Specification	CVSS	VVSG 1.0
Bench Handling	MIL-STD-810D, Method 516.3, Procedure VI California Voting System Standards	4.4.5.1	V2: 4.6.2
Vibration	MIL-STD-810D, Method 514.3, Category 1- Basic Transportation, Common Carrier California Voting System Standards	4.4.5.2	V2: 4.6.3

All three devices were deemed to have successfully passed both the Bench Handling, and Vibration Tests.

Please see “Attachment A - NTS Hardware Test Report TR-PR120143-REV1” for additional details.

End of ENV Hardware Test Report
