

National Technical Systems Test Report for Environmental Testing of the Verity Ballot Scanners

Prepared For

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Revision History

Rev.	Description	Issue Date
0	TR-PR106406	10/24/2019
1	Corrected Test Report Title description of product to "Verity Ballot Scanners".	11/04/2019

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1.0 Introduction

This document presents the test procedures used and the results obtained during the performance of an Environmental 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.

- SLI Compliance Purchase Order(s) 20190924-01, dated 09/24/2019
- National Technical Systems (NTS) Quote(s) OP0531283, dated 09/23/2019
- NTS Corporate Quality Policy Manual, Revision 9, dated 9/20/2018
- ISO/IEC 17025:2017(E) *General Requirements for the Competence of Testing and Calibration Laboratories*, dated 11/1/2017
- Test Specification: MIL STD 810

3.0 Product Selection and Description

SLI Compliance selected and provided the test sample(s) to be used as the Equipment Under Test. Details below:

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

Item	Qty.	Name/Description	Part Number	Serial Number
1	2	Paper Ballot Scanner	Canon DR-G2110	JG301520, JG301522
2	2	Paper Ballot Scanner	Canon DR-G2140	JF300588, JF300365
3	4	Contest resolution and conversion of voter selection marks to electronic CVRs	HP Z240 Workstation Central Client Server (COTS)	2UA8021XS4, 2UA74526WZ, 2UA74222WS, 2UA74526WN

3.1 Security Classification

Non-classified

4.0 General Test Requirements

4.1 Test Equipment

NTS-provided equipment is calibrated according to ISO/IEC 17025:2017(E) and calibration is traceable to the National Institute of Standards and Technology (NIST). Calibration records are maintained on file at NTS.

4.2 Notice of Deviation

In accordance with NTS' quality procedures, when the EUT is observed to exceed or display susceptibility, a Notice of Deviation (NOD) document is generated by the technician performing the test. This NOD documents the requirement, how the EUT deviated from the requirement, and allows room for resolution of the deviation.

This document is reviewed and approved by the NTS Program Manager or Engineer and the NTS Quality Assurance Representative, and then forwarded to the customer contact. Once mitigated (or passed over), the steps taken to correct the deviation (or simply instruction from the customer to continue testing) are recorded in the NOD and a copy of the NOD is integrated into the body of the report, in the appropriate location.

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	Temperature / Power Variation	MIL STD 810	Longmont	10/14/2019 - 10/18/2019	Canon DR-G2110, Canon DR-G2140, HP Z240 Workstation Central Client Server (COTS)	JG301520, JF300588, 2UA8021XS4, 2UA74526WZ, 2UA74222WS, 2UA74526WN, JF300365, JG301522	N/A



5.1 Temperature / Power Variation

5.1.1 Summary of Test Results

Per SLI Compliance:

“Four Verity Central COTS scanner client workstations were placed inside an environmental walk-in test chamber and connected to a variable voltage power source. The temperature inside the chamber varied from 50°F to 95°F for cycles of 12 hours at each extreme, for a total of 48 hours. Subsequently the chamber was stabilized to room temperature for the remainder of the test. Power supplied to the equipment under test varied from 105 VAC to 129 VAC in 4 hour cycles throughout the duration of the test.

Three hundred pre-marked ballots were processed through each scanner, once per hour, for 85 continuous hours. Every 4-hour cycle concluded with the generation of batch reports and audit logs. During the test, the operational functions of the equipment under test were continuously exercised by scanning ballots and periodically verifying the accumulated results.

At the end of the test, SLI personnel reconciled the results for each Verity Central scanner workstation, thus successfully completing the requirements of the Temperature/Power Variation, Data Accuracy, and Reliability Tests.”

5.1.2 Test Procedure

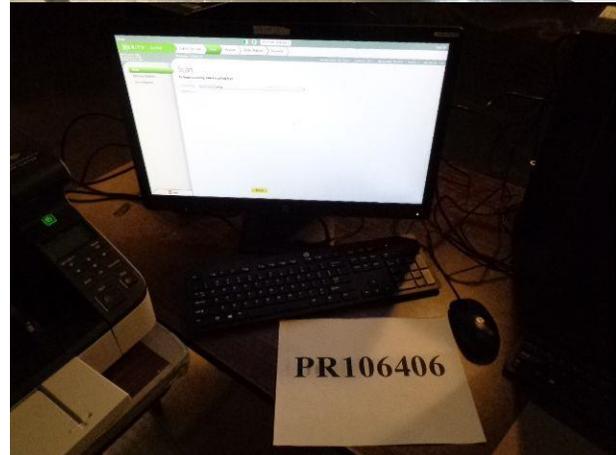
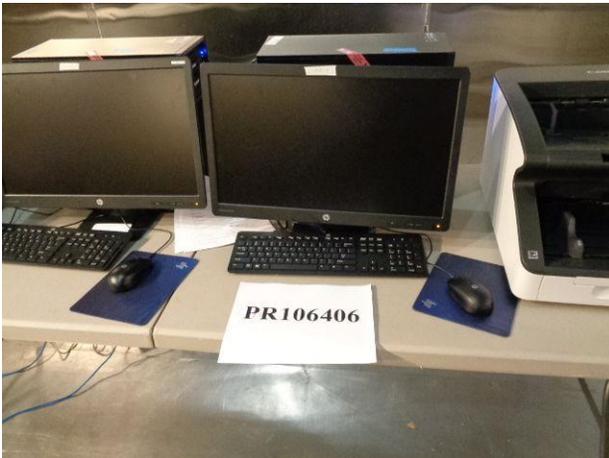
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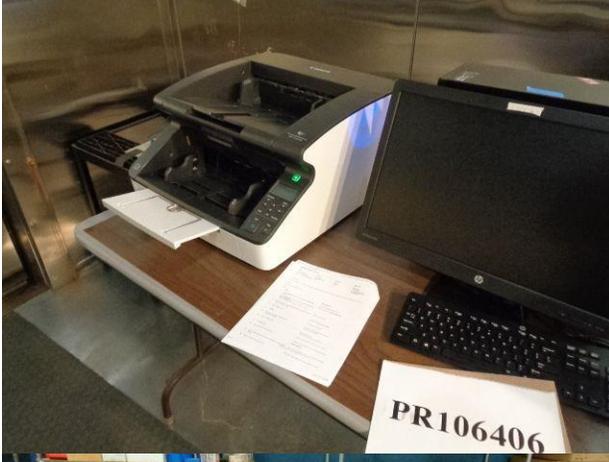
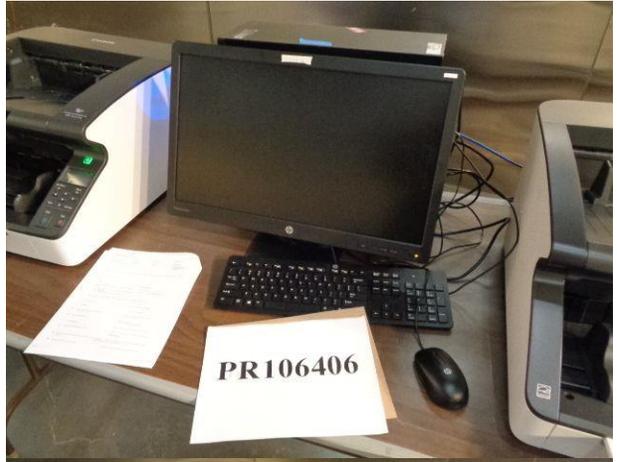
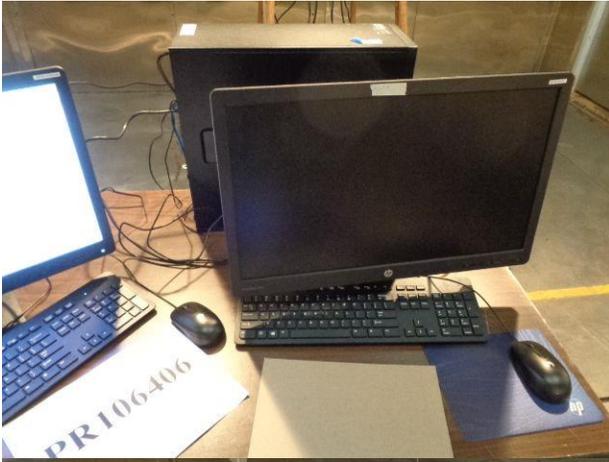
5.1.3 Test Datasheets

Start Date: 10/15/19		End Date: 10/18/19	MJO No: PR106406	
Customer: SLI		Test Performed: Temperature Power Variation Test	Test By: KM & RSP	
Part Name:		Part No: See UUT Details spreadsheet	Customer Witness: N/A	
Page 1 of 1		Test Specification: MIL-STD_810D	Temp: +10c to +35c Voltage: 105vlts to 129vlts	
Date	Time	Remarks	Initials	
10/15/19	10:00	Set VAC to 117vlts & ramp to +10c	RSP	
10/15/19	10:15	Start dwell at 117vlts & +10c for 4hrs	RSP	
10/15/19	14:15	Lower VAC to 105vlts & dwell for 4hrs	RSP	
10/15/19	18:15	Raise VAC to 129vlts & dwell for 4hrs	KM	
10/15/19	22:15	Lower VAC to 117vlts & Raise temperature to +35c & dwell for 4hrs	KM	
10/16/19	02:15	Lower VAC to 105vlts & dwell for 4hrs	KM	
10/16/19	06:15	Raise VAC to 129vlts & dwell for 4hrs	GM	
10/16/19	10:15	Lower VAC to 117vlts & Lower temperature to +10c & dwell for 4hrs	RSP	
10/16/19	14:15	Lower VAC to 105vlts & dwell for 4hrs	RSP	
10/16/19	18:15	Raise VAC to 129vlts & dwell for 4hrs	KM	

10/16/19	22:15	Lower VAC to 117vlts & Raise temperature to +35c & dwell for 4hrs	KM
10/17/19	02:15	Lower VAC to 105vlts & dwell for 4hrs	KM
10/17/19	06:15	Raise VAC to 129vlts & dwell for 4hrs	GM
10/17/19	10:15	Lower VAC to 117vlts & ramp to +23c ambient	RSP
10/17/19	10:15	Temperature and power variation portion of test has completed	KM
10/17/19	10:15	Test will continue to run at +23c ambient for another 37hrs	KM
10/18/19	22:15	All Testing complete for a total of 85hrs	KM

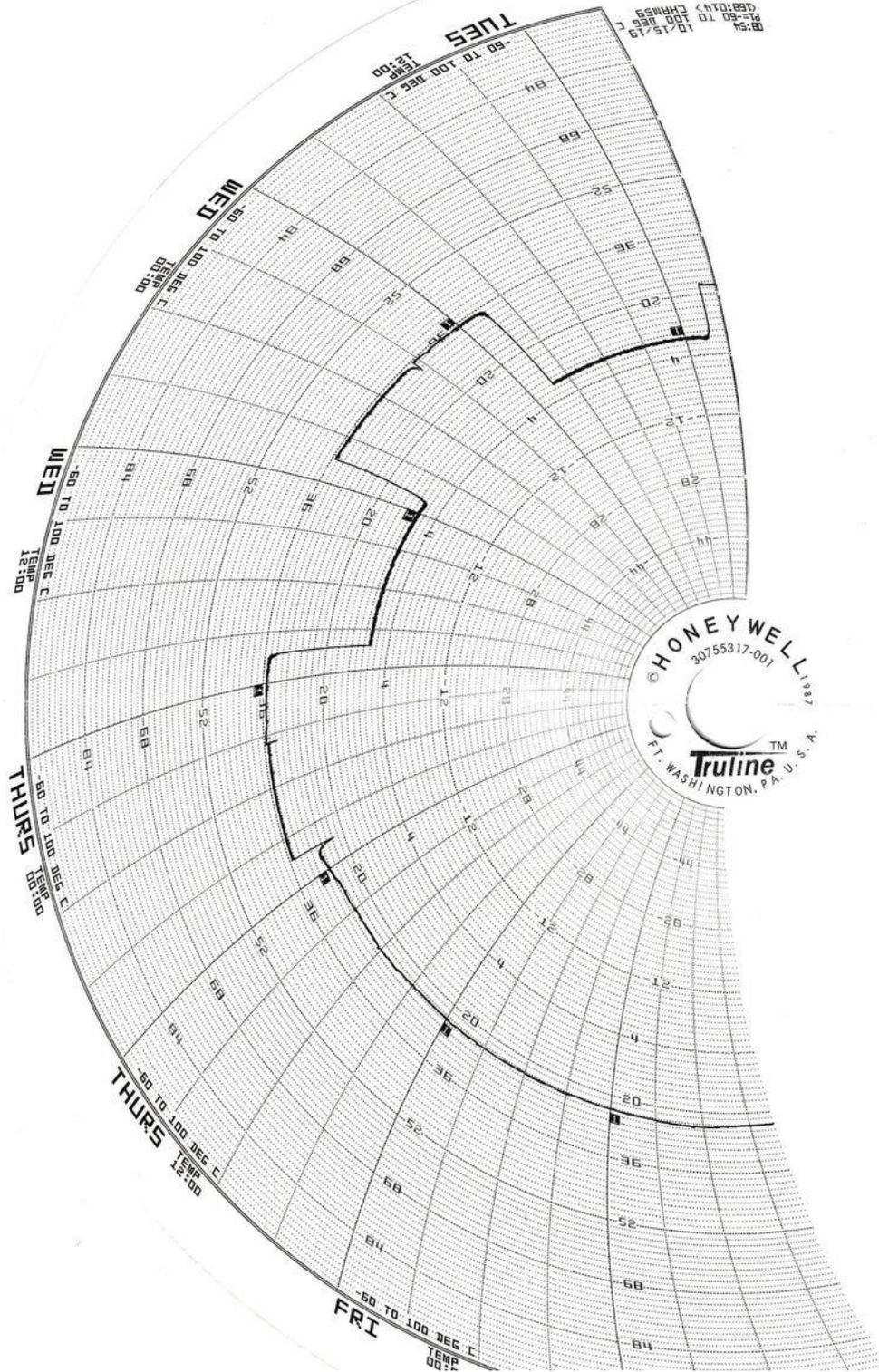
5.1.4 Test Photographs





5.1.5 Test Data

Power_Var_Test_Graph





5.1.6 Test Equipment List

Table 5.1-1: Temperature / Power Variation Test Equipment List

Asset Number	Manufacturer	Description	M/N	S/N	Range	Start Date	End Date	Last Calibration	Cal Interval (Months)	Cal Due	Notes
WC061559	StorageTek	Temp/Hum chamber, CH 59	N/A			10/14/2019	10/18/2019	09/19/2019	12	09/19/2020	
WC061560	Watlow	TEMPERATURE CONTROLLER	F4	6165	Multi / Mfg	10/14/2019	10/18/2019	09/19/2019	12	09/19/2020	
WC061561	Honeywell	CHART RECORDER	DR45A T	'0350Y3 613409 00004	Multi / Mfg	10/14/2019	10/18/2019	09/19/2019	12	09/19/2020	

Calibration Abbreviations

CAL: Calibration

NCR: No Calibration Required



End of Report