Main: 303-776-7249

Fax: 303-776-7314



www.nts.com

National Technical Systems Environmental & Dynamics Lab 1601 Dry Creek Dr. #2000 Longmont, CO 80503

Date: 12 JUNE 18

CUSTOMER:

Pro V&V, Inc.

700 Boulevard South, Suite 102

Huntsville, AL 35802

Purchase Order Number: 2018-008

A. <u>TESTS:</u> Bench, Vibration, Low & High Temperature, Humidity,

Temperature & Power Variation

B. <u>TEST ITEM:</u> Clear Access ballot marking device

See page 2 for Test Item Identification

C. <u>SPECIFICATIONS:</u> 1. MIL-STD-810D

2. Pro V&V's SOW

3. ISO 17025:2005

D. RESULTS:

This is to certify that the Clear Access ballot marking device was subjected to bench, vibration, low & high temperature, humidity and temperature & power variation testing according to the above specifications.

See Page 2 for Summary of Test Results. The Clear Access ballot marking device was returned to Pro V&V for post-tests and final evaluation.

Test data, an equipment list and photographs are attached.

Mark Haynes, Technical Writer

Muh Huynes

Bob Polverari, Technical Reviewer John Radman, Independent Reviewer

This report and the information contained herein represents the results of testing of only those articles/products identified in this document and selected by the client. The tests were performed to specifications and/or procedures approved by the client. National Technical Systems ("NTS") makes no representations expressed or implied that such testing fully demonstrates efficiency, performance, reliability, or any other characteristic of the articles being tested, or similar products. This report should not be relied upon as an endorsement or certification by NTS of the equipment tested, nor does it present any statement whatsoever as to the merchantability or fitness of the test article or similar products for a particular purpose. This document shall not be reproduced except in full without written approval from NTS.



TEST ITEM IDENTIFICATION

Quantity	Sample Description	Serial Numbers				
8	Clear Access Ballot Marking Devices with Printers	A18C004075, D18Q000334, U64964A8N263502, A18C004077, U64964A8N263494, K17C012858, AK7A044087A0, A18C004080, AK7A044098A0, AK7A044092A0, D18Q001601, AK7A044100A0, B18Q000597, U64964A8N262755, B18Q000335, U64964A8N262808				

SUMMARY OF TEST RESULTS

Upon completion of testing, the test samples were removed from the test fixture and subjected to a visual inspection. No anomalies were noted. The test samples were returned to Pro V&V.

Bench Testing

Testing was started and completed on May 21, 2018; exposing the test sample to 6 drops per corner from 4 inches for a total of 24 drops in accordance with MIL-STD-810D.

Transportation Vibration Testing

Testing was started and completed on May 24, 2018; exposing the test samples to 30 minutes of 1.05gRMS vertical random vibration, 30 minutes of 0.74gRMS longitudinal random vibration and 30 minutes of 0.20gRMS transverse random vibration in accordance with MIL-STD-810D.

Low and High Temperature Testing

Testing was started on May 21, 2018 and completed on May 23, 2018; exposing the test samples to -20 degrees C low temperature and 60 degrees C high temperature in accordance with MIL-STD-810D.



Humidity Testing

Testing was started on May 7, 2018 and completed on May 21, 2018; exposing the test samples to (10) 24-hour non-operating humidity cycles in accordance with MIL-STD-810D.

Temperature Power Variation Testing

Testing was started on June 4, 2018 and completed on June 8, 2018; exposing the test samples to 2 test cycles of:

- 117 VAC and 10 degrees C for 4 hours and then lowering voltage to 105 VAC, raising to 129 VAC and finally lowering to 117 VAC and 23 degrees C in accordance with MIL-STD-810D.
- 117 VAC and 35 degrees C for 4 hours and then lowering voltage to 105 VAC, raising to 129 VAC and finally lowering to 117 VAC and 23 degrees C after 3.5 hours in accordance with MIL-STD-810D.



BENCH TEST PHOTOS











BENCH TEST LOG & EQUIPMENT LIST





GENERAL LOG SHEET

TEST _	Bench Te	st	MJO	PR079580	_						
CUSTON	IER Pro	V&V Inc P/N [E757464]	S/N	A18C004075	_						
TEST ITEM [Clearcast Voting Maching]											
SPECIFIC	CATION	MIL-STD-810U	PARA		_						
DATE	TIME	LOG ENTRIES		INITIA	ALS						
05/23/18	10:00	Start 6 drops per comer of UUT from 4 inches									
05/23/18	18 10:15 Total of 24 drops from 4 inches for UUT complete										
05/23/18	10:15	Note:All test pass or fail determinations decided by Pro V&V Inc.		KN	1						
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		TEST BY Kerry Martin	DATE	05/23/18	_						
PAGE 1	OF 1	ENGINEER	GOV'T QAR	N/A							



NTS		NTS
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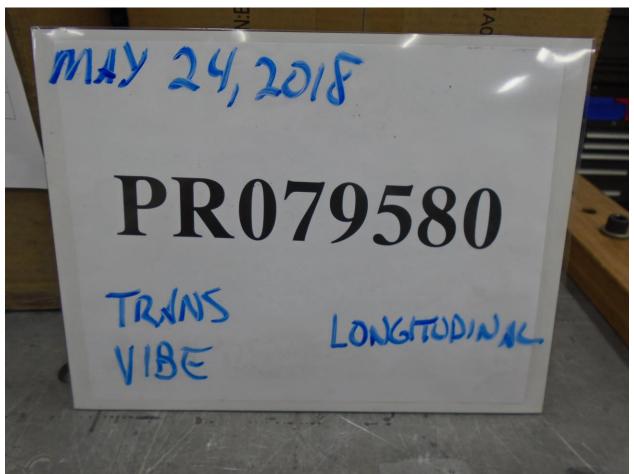
GENERAL EQUIPMENT LIST

Test Title: Bench Test											
Customer: Pro V&V Inc	Customer: Pro V&V Ind Date:										
Part Name: Clearcast Voting	Machine	MJO No.: PR079580									
Part No.: E757464 & E0157	780	P.O. No.:									
Serial No.: A18C004075&D1	18Q000334	NTS Eng.:	N13 Eng.:								
Test Spec: MIL-STD-810D		Revision:									
Equipment	Manufacture / Model	NTS I.D. # Cal. Date	In-Service Due Date								
Wooden Block	4 Inch Wooden Block	N/A N/A	N/A N/A								
l .	Kerry Martin	D	ate:								
Page 1 of 1 Engr.:		Govt. Q	Page 1 of 1 Engr.: Govt. QAR:								

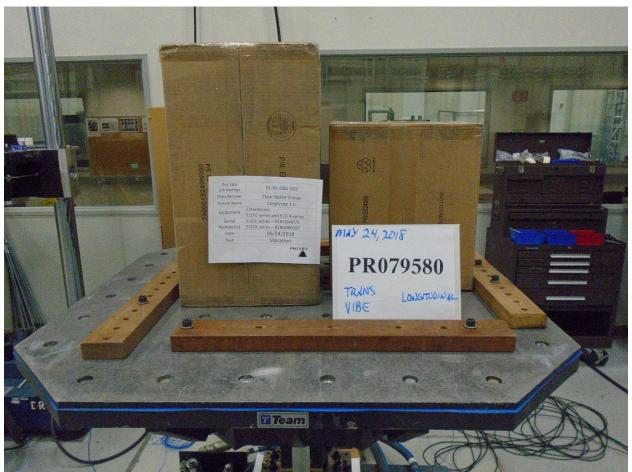


TRANSPORTATION VIBRATION TEST PHOTOS

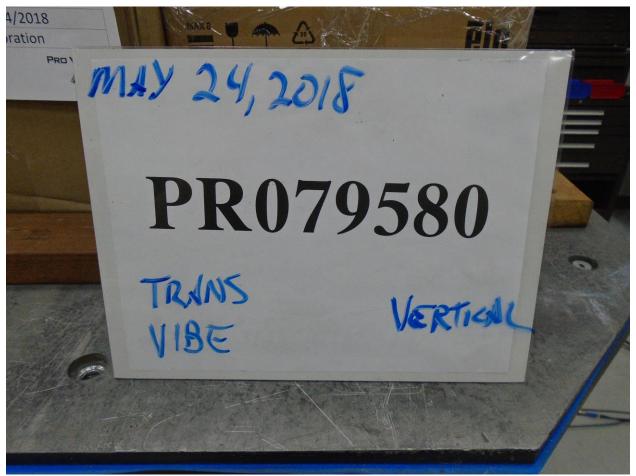








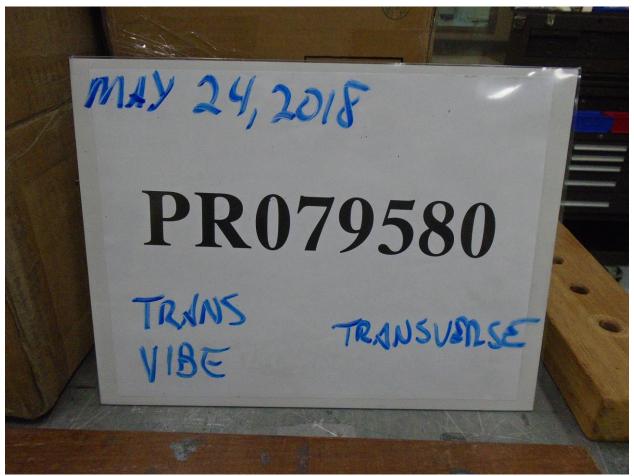












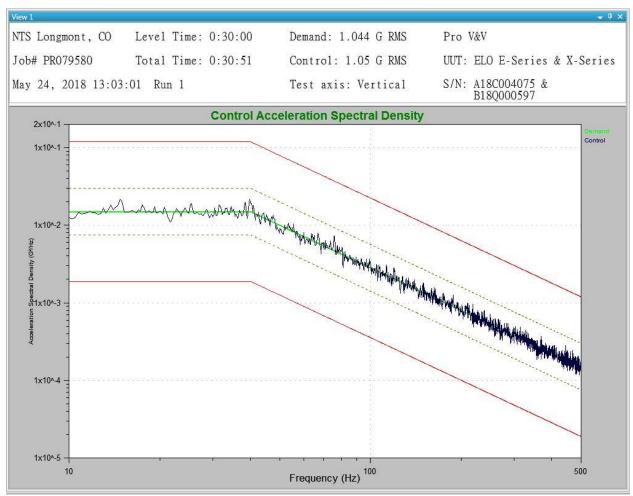






TRANSPORTATION VIBRATION TEST DATA PLOTS

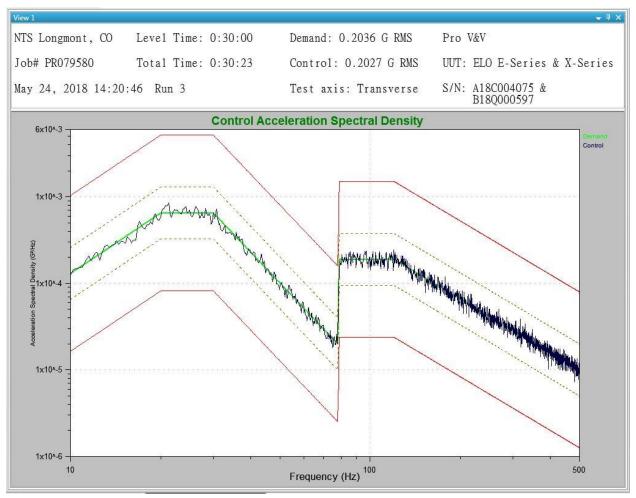














TRANSPORTATION VIBRATION TEST LOG & EQUIPMENT LIST





VIBRATION/SHOCK TEST LOG

Start Date	e: 5/24/1	8	End I	Date: 5/24/1	8	MJO No: F	PR079580					
Customer	r: Pro V	&V			Test Performed: Transportation Vibration	Test Engineer: Michae	l Nash					
Part Nam	e: E 7574	64 & E01	15780		Serial numbers: A18C004075 & D18Q000334	Customer Witness: N/A						
Page of			Test	Specification	: Mil-810D Temp: 68° Humidity: 40%							
Date	Time	Axis	Plot No.	Serial No.	Remarks		Initials					
5/24/18	1230				Setup UUT's on shaker HYD06 in the Vertical-Axis		MN					
	1303	Vert	1		Run 1.04gRMS vertical random vibration for 30 minutes		MN					
	1334				Changeover to Longitudinal-Axis	nangeover to Longitudinal-Axis						
	1339	Long	2		Run 0.74gRMS longitudinal random vibration for 30 minute	tun 0.74gRMS longitudinal random vibration for 30 minutes						
	1412				Changeover to Transverse-Axis							
	1420	Trans	3		Run 0.20gRMS transverse random vibration for 30 minutes		MN					
	1452				Testing complete		MN					



TEST EQUIPMENT

ID Number	Manufacturer	Model #	Serial #	Description	Cal Date	Cal Du <u>€</u>
1750	Team	80/10.5	544	Shaker System HYD06	For refer	ence only
1724	Vibration Research	VR9500	9521CE01	Vibration Controller	10-12-17	10-12-18
1693	PCB	352C04	LW210600	Response accelerometer	10/4/2017	10/4/2018
1696	PCB	352C04	LW210597	Response accelerometer	10/4/2017	10/4/2018
1766	Fluke	971	3623064	Temperature/Humidity meter	4/23/2018	4/23/2019



LOW TEMPERATURE TEST PHOTOS





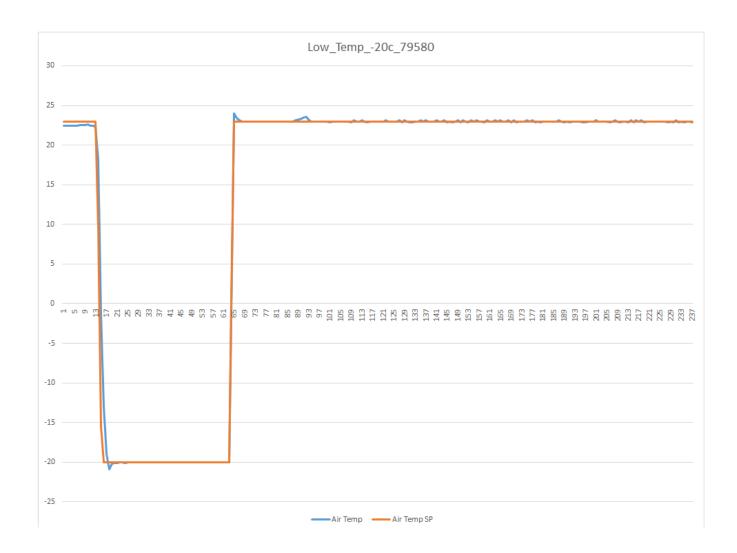






LOW TEMPERATURE TEST DATA PLOT







LOW TEMPERATURE TEST LOG & EQUIPMENT LIST





GENERAL LOG SHEET

		GENERAL	LOG SHEET								
TEST L	.owTem	o -20c		MJO	PR079580						
CUSTON	TEST LowTemp - 20¢ MJO PR079589 CUSTOMER Pro V&V Inc P/N F757464 & E015789 S/N D18Q000334										
TEST ITE	M Clea	rcast VotingMachine									
SPECIFIC	CATION	MIL-STD-8100		PARA	[]						
DATE	TIME	L	OG ENTRIES			INITIALS					
05/21/18	12:30	Start vv low temp pgm at -20c				KM					
05/22/18	07:15	Test vv low temp pgm at -20c has comp	leted			KM					
05/22/18	07:15	Chamber is at ambient 23c and collectt	est data			KM					
05/22/18	07:15	Open chambers doors per customer an	d allow UUT's to set at air te	mperature		KM					
05/22/18	08:00	Customerinspected UUT's and perform	ed functional test			KM					
05/22/18	08:15	All testing for low temp -20c completed				KM					
05/22/18	08:15	Note: All test pass or fail determinations	decided by Pro V&V Inc.			KM					
		_									
		_				-					
						-					
		TEST BY Kerry Martin		DATE	05/22/18						
PAGE 1	OF 1	ENGINEER		GOV'T QAR	N/A						



GENERAL EQUIPMENT LIST

				<u> </u>		11 1411	11						
Test Title:	Low Ter	np-20c											
Customer:	Pro V&V	/ Ing					ate:						
Part Name:	Clearca	st Voting N	lachine			MJO	MJO No.: PR079580						
Part No.:	E75746	4 & E0157	80			P.O.	No.:						
Serial No.:	A18C00	04075&D1	8Q00033	4		MTS E	ng.:						
Test Spec:	MIL-STE	D-810D				Revis	ion:	on:					
	uipment		Manufa	acture	NTS I.D.#	C	al. Date	ln-	Service	Due Date			
Chamber 42				virotro		1743					N/A		
Controller		Theri	motron	8800	1642	1	0/04/17		Yes	10/04/18			
							\top		\vdash				
							_						
							+		\vdash				
							+		\vdash				
							+		\vdash				
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HIGH TEMPERATURE TEST PHOTOS





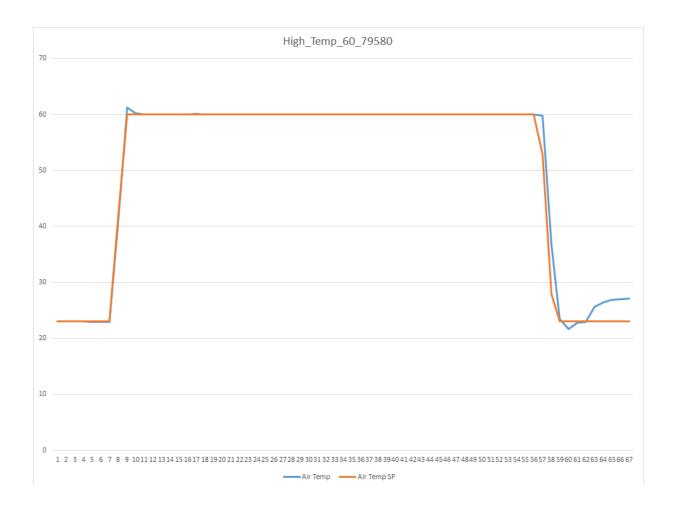






HIGH TEMPERATURE TEST DATA PLOT







HIGH TEMPERATURE TEST LOG & EQUIPMENT LIST





GENERAL LOG SHEET

TEST High Temp 800			GENERA		OG SHEET							
CUSTOMER	TEST F	lighTem				MJO	PR079580					
DATE	CUSTOM	IER Pro	V&V Inc	P/N	E757464 & E015780	S/N	A18C004075 D18Q00033	& 4				
DATE TIME LOG ENTRIES INITIAL 05/22/18 08:30 Start vv high temp pgm at 60c MM 05/22/18 13:30 Test vv high temp pgm at 60c has completed RM 05/22/18 13:30 Chamber is at ambient 23c and collect test data RM 05/22/18 13:30 Open chambers doors per customer and allow UUT's to set at air temperature RM 05/23/18 09:00 Customer inspected UUT's and performed functional test RM 05/23/18 09:00 All testing for high temp 60c completed RM 05/23/18 09:00 Note: All test pass or fall determinations decided by Pro V&V Inc. 1												
D5/22/18 D8:30 Start vv high temp pgm at 60c KM	SPECIFIC	CATION	MIL-STD-8100			PARA						
05/22/18 13:30 Test vv hightemp pgm at 60c has completed KM	DATE	TIME		LOG	ENTRIES			INITIALS				
05/22/18 13:30 Chamber is at ambient 23c and collect test data KM 05/22/18 13:30 Open chambers doors per customer and allow UUT's to set at air temperature KM 05/23/18 09:00 Customer inspected UUT's and performed functional test KM 05/23/18 09:00 All testing for hightemp 60c completed KM 05/23/18 09:00 Note: All test pass or fall determinations decided by Pro V&V Inc:	05/22/18	08:30	Start vv high temp pgm at 60c	art vv high temp pgm at 60c								
13:30 Open chambers doors per customer and allow UUT's to set at air temperature	05/22/18	13:30	Test vv high temp pgm at 60c has con	tvv hightemp pgm at 60c has completed								
05/23/18 09:00 Customerinspected UUT's and performed functional test KM	05/22/18	13:30	Chamber is at ambient 23c and collec	ttesto	data			KM				
05/23/18 09:00 All testing for high temp 80 completed KM	05/22/18	13:30	Open chambers doors per customer a	nd all	ow UUT's to set at air te	mperature		KM				
D5/23/18 D9:00 Note:All test pass or fail determinations decided by Pro V&V Inc. KM	05/23/18	09:00	Customer in spected UUT's and perfor	med fu	unctionaltest			KM				
TEST BY Kerry Martin DATE 05/23/18	05/23/18	09:00	All testing for hightemp 60ccomplete	d				KM				
TEST BY Kerry Martin DATE 05/23/18	05/23/18	09:00	Note:All test pass or fail determination	s deci	ided by Pro V&V Inc.							
TEST BY_Kerry Martin DATE_05/23/18												
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PAGE 1 OF 1 ENGINEER GOV'T QAR N/A			TEST BY Kerry Martin			DATE	05/23/18					
	PAGE 1	OF 1	ENGINEER			GOV'T QAF	R N/A					





GENERAL EQUIPMENT LIST

Test Title: High Temp 60c											
Contains and Part / (1)			D-	4							
Customer: Pro V&V Inc				ite:							
Part Name: Clearcast Voting	Machine			lo.: PR07958	0						
Part No.: E757464 & E015				P.O. No.:							
Serial No.: A18C004075 & E)18Q000334		NTS Eng.:								
Test Spec: MIL-STD-810D			Revisi	on:							
Equipment	Manufactur	NTS I.D. #	Cal. Date	In-Service	Due Date						
Chamber 42	Envirotr		1743	N/A	Yes	N/A					
Controller	Thermotro		1642	10/04/17	Yes	10/04/18					
Controller	memoure	JII 0000	1042	10/04/11	103	10/04/10					
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Test By	Kerry Martin			D	ate: 05/	23/18					
Page 1 of 1 Engr.					AR:						



TEMPERATURE & HUMIDITY TEST PHOTOS





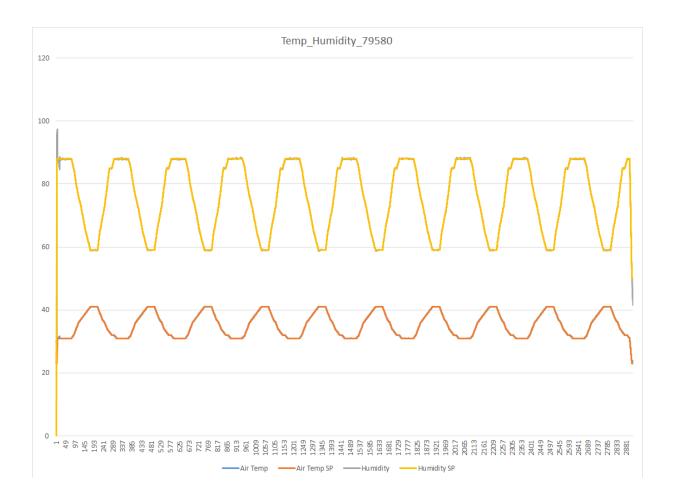






TEMPERATURE & HUMIDITY TEST DATA PLOT







TEMPERATURE & HUMIDITY TEST LOG & EQUIPMENT LIST





GENERAL LOG SHEET

TEST 1	I0 Day Te	emp & Humidity	MJO	PR07958u A18C004075 &
CUSTON	MER Pro	0 V&V Inc P/N E757464 &	E01578g S/N	A18C004075 & D18Q000334
TESTITE	M Clea	arcast Voting Machine		
SPECIFIC	CATION	MIL-STD-8100	PAR	RA []
DATE	TIME	LOG ENTRIES		INITIA
05/07/18	11:00	Customer performed functional test on UUT's prior to star	ting test profile	КМ
05/08/18	08:30	Start test profile mil 810 hot hum.pgm will run for 10 days		КМ
05/18/18	10:30	Test profile mil810 hot hum.pgm has completed 10 days		KM
05/18/18	10:30	Chamber is at ambient 23c and collect test data		KM
05/18/18	10:30	Open chambers doors per customer and allow UUT's to s	et at air temperature	KM
05/21/18	10:00	Customer inspected UUT's and performed functional test		KM
05/21/18	10:00	All testing for Temp & Humidity has completed		KM
05/21/18	10:00	Note:All test pass or fail determinations decided by Pro Vi	&V Inc.	KM
				0.0
		TEST BY Kerry Martin	DATE	05/21/18
PAGE 1	of 1	ENGINEER		AR N/A





Test Title: 10 Day Temp & Customer: Pro V&V Ing Clearcast Voting Part No.: E757464 & E01: Serial No.: A18C004075 & Test Spec: MIL-STD-810D	1 Machine	MJO N P.O. N NTS En	te: 05/07/18 lo.: PR079580 lo.:)	
Equipment	Manufacture / Model		Cal. Date	In-Service	Due Da
Chamber 42	Envirotronics	1743	N/A	Yes	N/A
Controller	Thermotron 8800	1642	10/04/17	Yes	10/04/1



TEMPERATURE & POWER VARIATION TEST PHOTOS



































TEMPERATURE & POWER VARIATION TEST DATA PLOT







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GENERAL LOG SHEET

TEST I	emnera	ture Power Variation Test MJO PR079580	
1231 _	cilipera	E757464 & E015780,	
CUSTON	IER Pro	84UH5H00107 & S/N See Below Voting 0 V&V Inc P/N 62444401 S/N S/N & Attached Pri	
TEST ITE	M ELO	E & ELO X Series VotingMachines, Brother HL-L2350DW & Oki B432 Printers	
SPECIFIC	CATION	MIL-STD-8100 PARA	
DATE	TIME	LOG ENTRIES	INITIALS
		A18C004075 & U64964A8N263502, A18C004077 & U64964A8N263494, K17C012858 & AK7A044087A0, A18C004080 & AK7A044098A0, D18Q000334 & AK7A044092A0, D18Q001601 & AK7A044100A0 B18Q000597 & U64964A8N262755, B18Q000335 & U64964A8N262808	
06/04/18	08:15	Set VAC to 117vits	LR
	09:00	Set temperature to 10c & start 4hr dwell	LR
	13:00	Lower VAC to 105vlts	LR
	17:00	Raise VAC to 129vlts	LR
	20:30	Lower VAC to 117vlts & set temperature to 23c	KM
	21:00	Raise temperature to 35c & start 4hr dwell	KM
06/05/18	01:00	Lower VAC to 105vlts	KM
	05:00	Raise VAC to 129vlts	KM
	08:30	Lower VAC to 117vits & set temperature to 23c after 3.5hrs	LR
	09:00	Lower temperature to 10c & start 4hr dwell	LR
	13:00	Lower VAC to 105vits	LR
	17:00	Raise VAC to 129vIts	RP
	20:30	Lower VAC to 117vits & set temperature to 23c	KM
06/06/18	21:00	Raise temperature to 35c & start 4hr dwell	KM
	01:00	Lower VAC to 105vits after 4hrs	ΚN
	05:00	Raise VAC to 129vlts after 4hrs	KM
	08:30	Lower VAC to 117vits & set temperature to 23c	LR
		Temp and power variation portion of test has completed	KM
	08:55	Open Chamber doors	RP
06/07/18	09:00	Test will continue to run at ambient for 37hrs	KM
06/08/18	22:00	All testing has completed	KM
		Note: All test pass or fail determinations decided by Pro V&V Inc.	KM
PAGE 1	OF 2	TEST BY Kerry Martin DATE 06/08/18	





GEN	IERAL EQU	IPMEN	T LIST	'	
Test Title: Power Variation					
Customer: Pro V&V Ind	ries Voting Machines,	Da1	te: 06/04/18		
Part Name: Brother HL-L23500		MJO N	PR079580 o.:		
E757464 & E0157	80,84UH5H00107&				
Part No.: 62444401	Machine & Attached Brints	P.O. N			
Serial No.: See Below Voting I Test Spec: MIL-STD-810D	viaciline & Allacheu Filinte	Revision			
Equipment	Manufacture / Model	NTS I.D. #	Cal. Date	In-Service	Due Date
Chamber 59	N/A	1733	N/A	Yes	N/A
Controller	Watlow F4	1653	9/28/2017	Yes	9/28/2018
Data Acquisiton/SwitchUnit	Agilent/34970A	MY41034421	12/29/17	Yes	12/29/18
Multiplexer 20 Channel A18C004075&	Agilent/34901A	1801	12/29/17	Yes	12/29/18
U64964A8N263502					
A18C004077&					
U64964A8N263494					
K17C012858 & AK7A044087A0 A18C004080 & AK7A044098A0					
D18Q000334 & AK7A044092A0					
D18Q001601 & AK7A044100A0					
B18Q000597 & U64964A8N262755					
B18Q000335 &					
U64964A8N262808					
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	Kerry Martin				08/18
Page 1 of 2 Fngr.:			Govt. QA	AR:	1

	Test By:	Kerry Ma	rtin				Da	te:	06/0	08/18	
Page 1 of 2	Engr.:					Gov	t. Q/	AR:			



END OF REPORT