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Environmental & Dynamics Lab
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Date: 12 JUNE 18

CUSTOMER:

Pro V&V, Inc.
700 Boulevard South, Suite 102
Huntsville, AL 35802

Purchase Order Number: 2018-008

A. TESTS: Bench, Vibration, Low & High Temperature, Humidity, Temperature & Power Variation

B. TEST ITEM: Clear Access ballot marking device
See page 2 for Test Item Identification

C. SPECIFICATIONS:
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

Bob Polverari,
Technical Reviewer

John Radman,
Independent Reviewer

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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



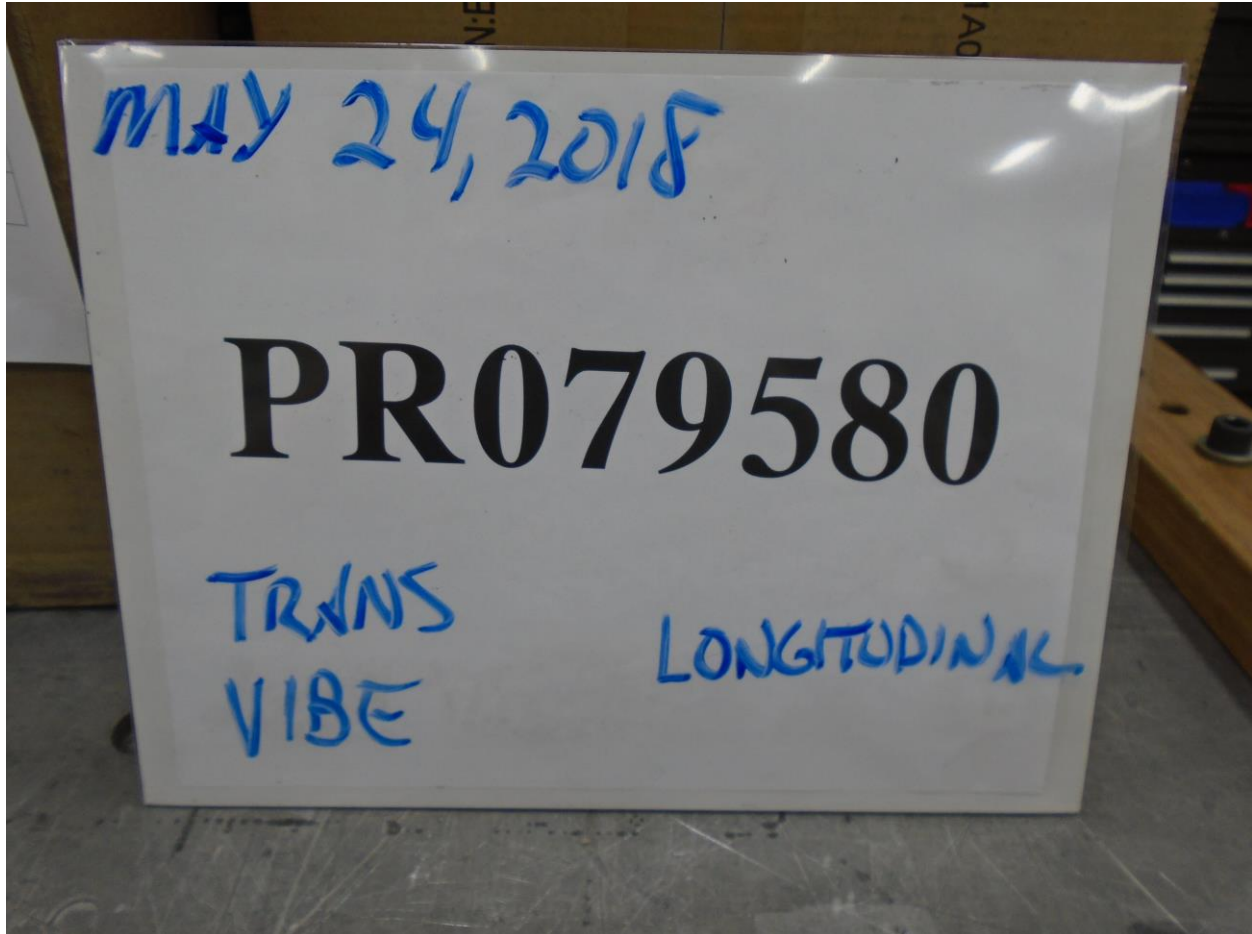




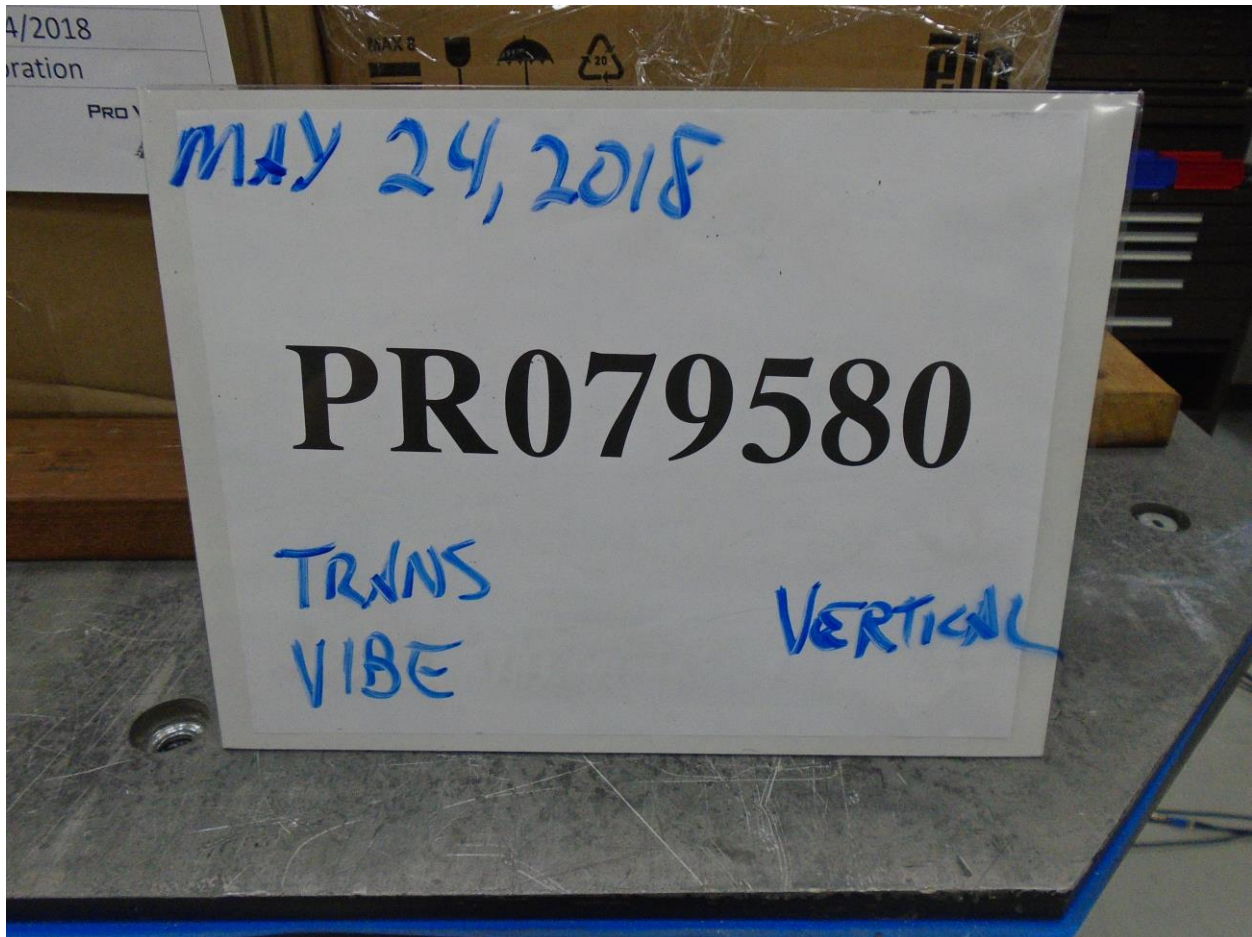
BENCH TEST LOG & EQUIPMENT LIST



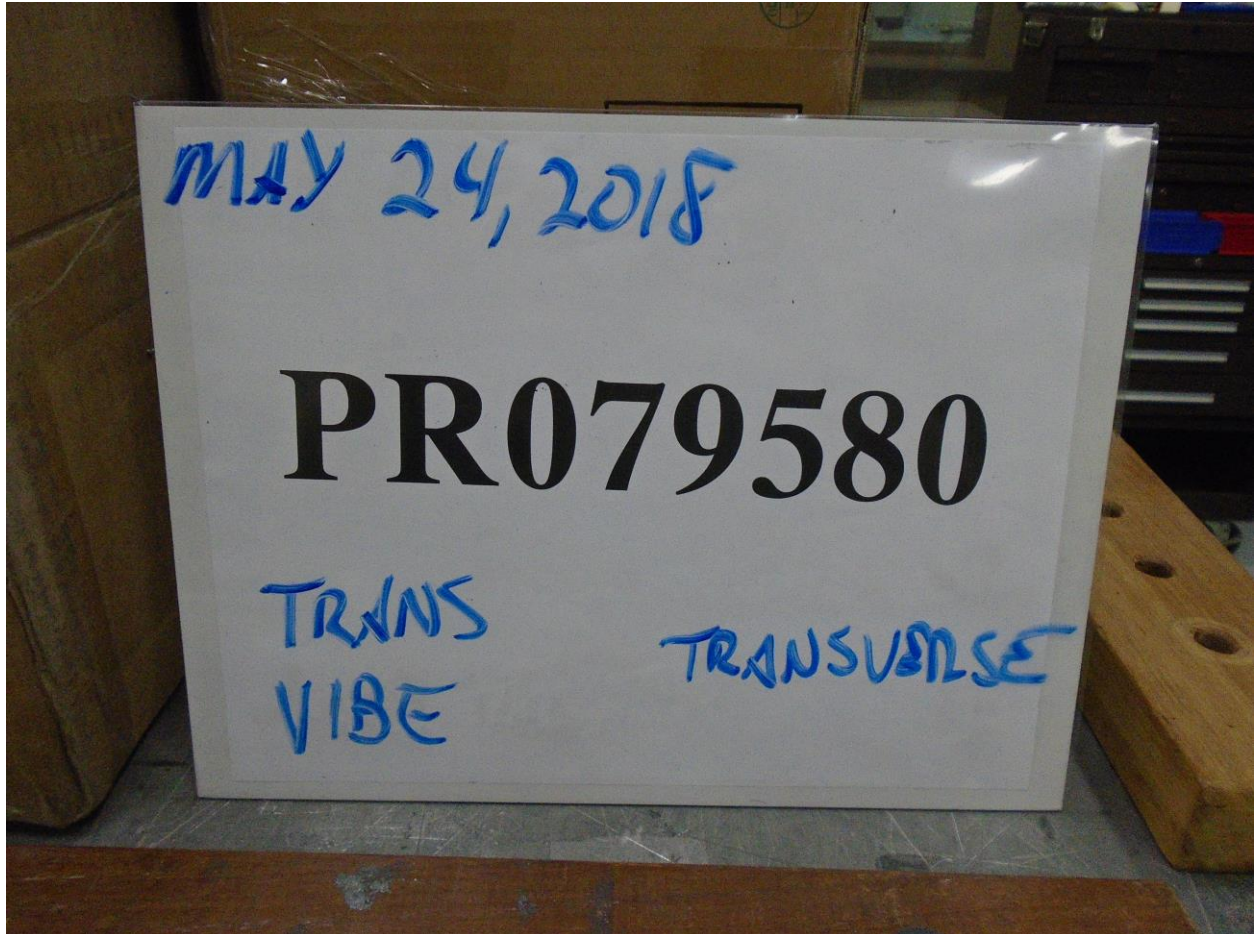
TRANSPORTATION VIBRATION TEST PHOTOS







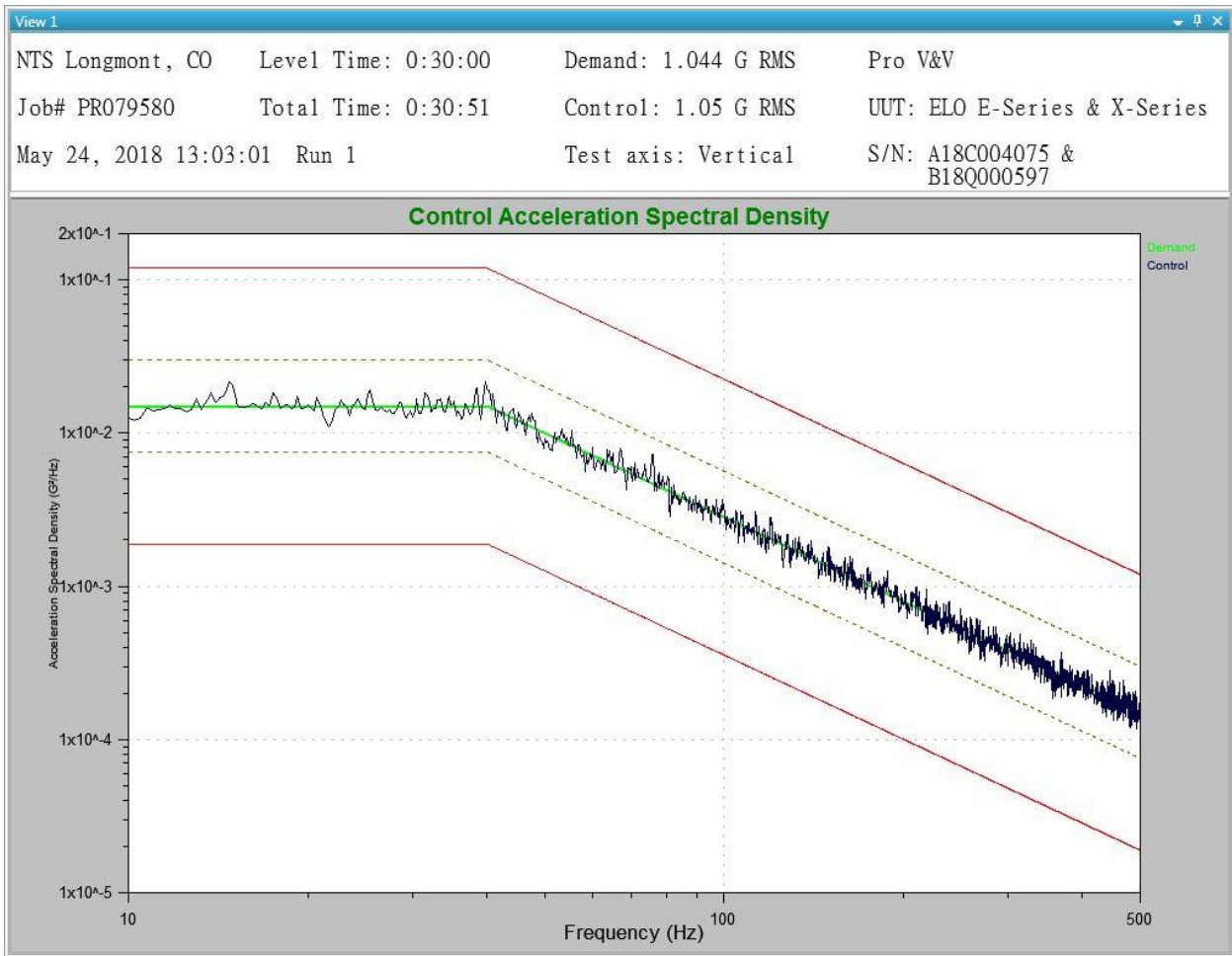


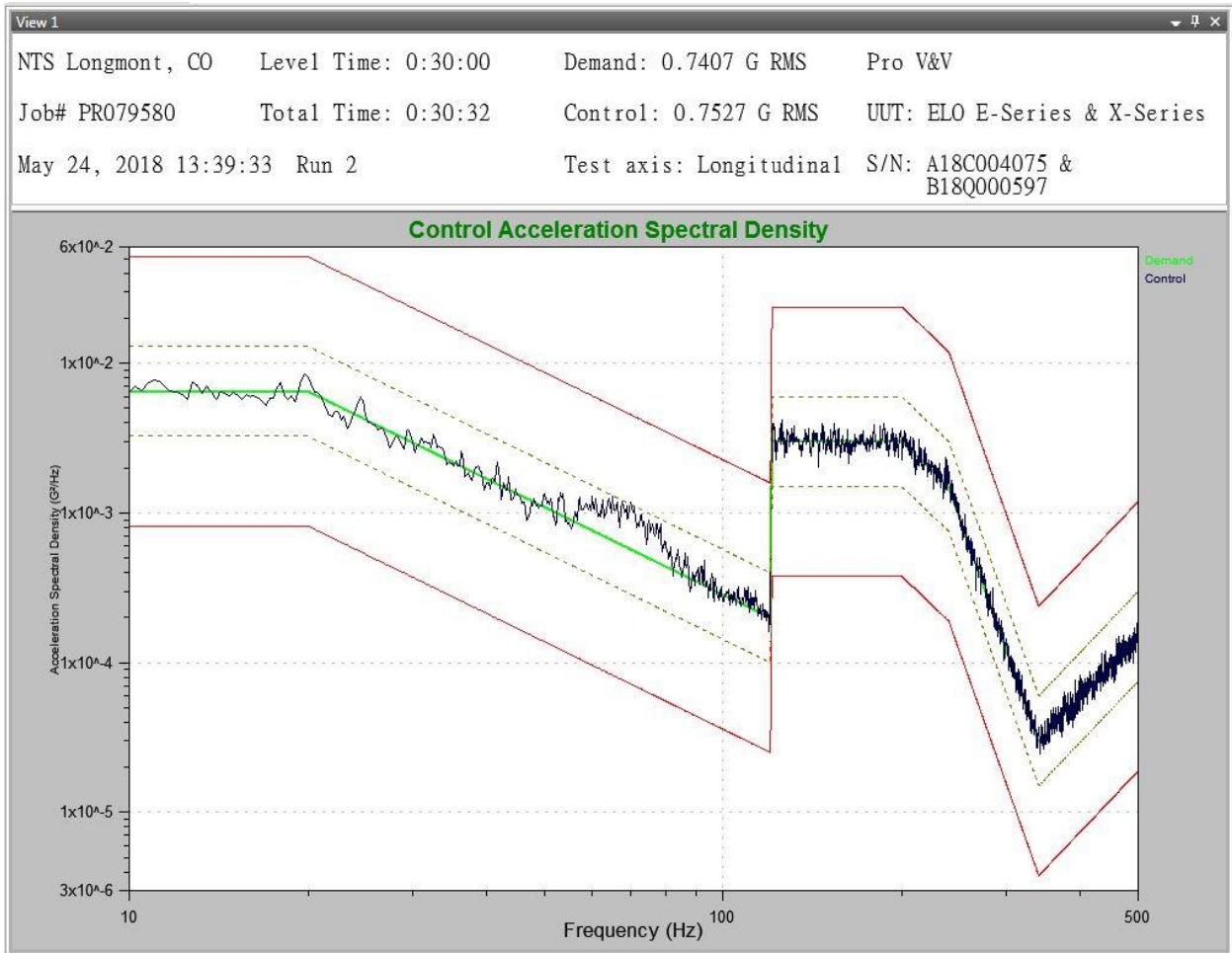


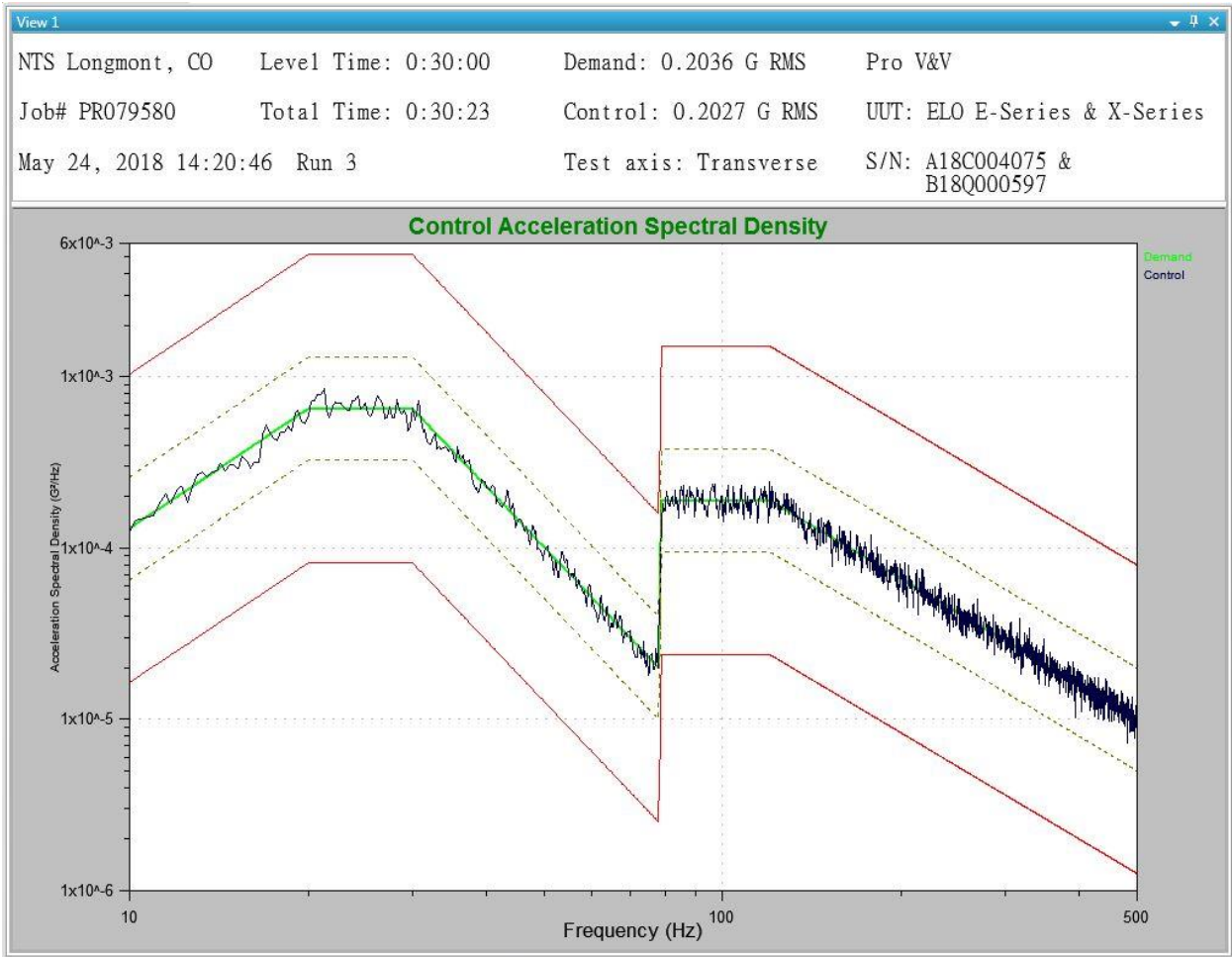




TRANSPORTATION VIBRATION TEST DATA PLOTS









TRANSPORTATION VIBRATION TEST LOG & EQUIPMENT LIST



VIBRATION/SHOCK TEST LOG

Start Date: 5/24/18		End Date: 5/24/18		MJO No: PR079580		
Customer: Pro V&V			Test Performed: Transportation Vibration		Test Engineer: Michael Nash	
Part Name: E757464 & E015780			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	MN
	1339	Long	2		Run 0.74gRMS longitudinal random vibration for 30 minutes	MN
	1412				Changeover to Transverse-Axis	MN
	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 Due
1750	Team	80/10.5	544	Shaker System HYD06	For reference 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



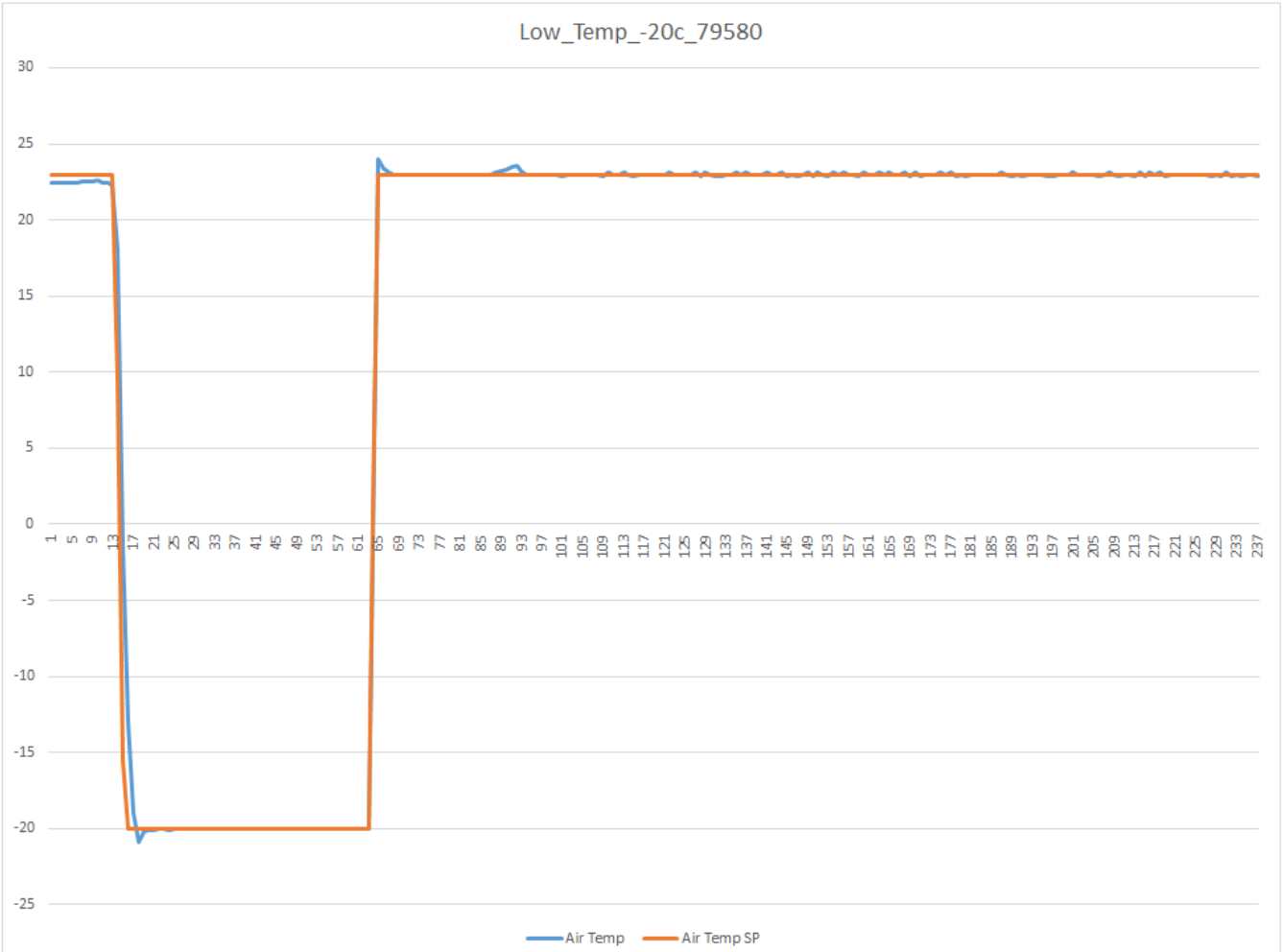
LOW TEMPERATURE TEST PHOTOS







LOW TEMPERATURE TEST DATA PLOT





LOW TEMPERATURE TEST LOG & EQUIPMENT LIST



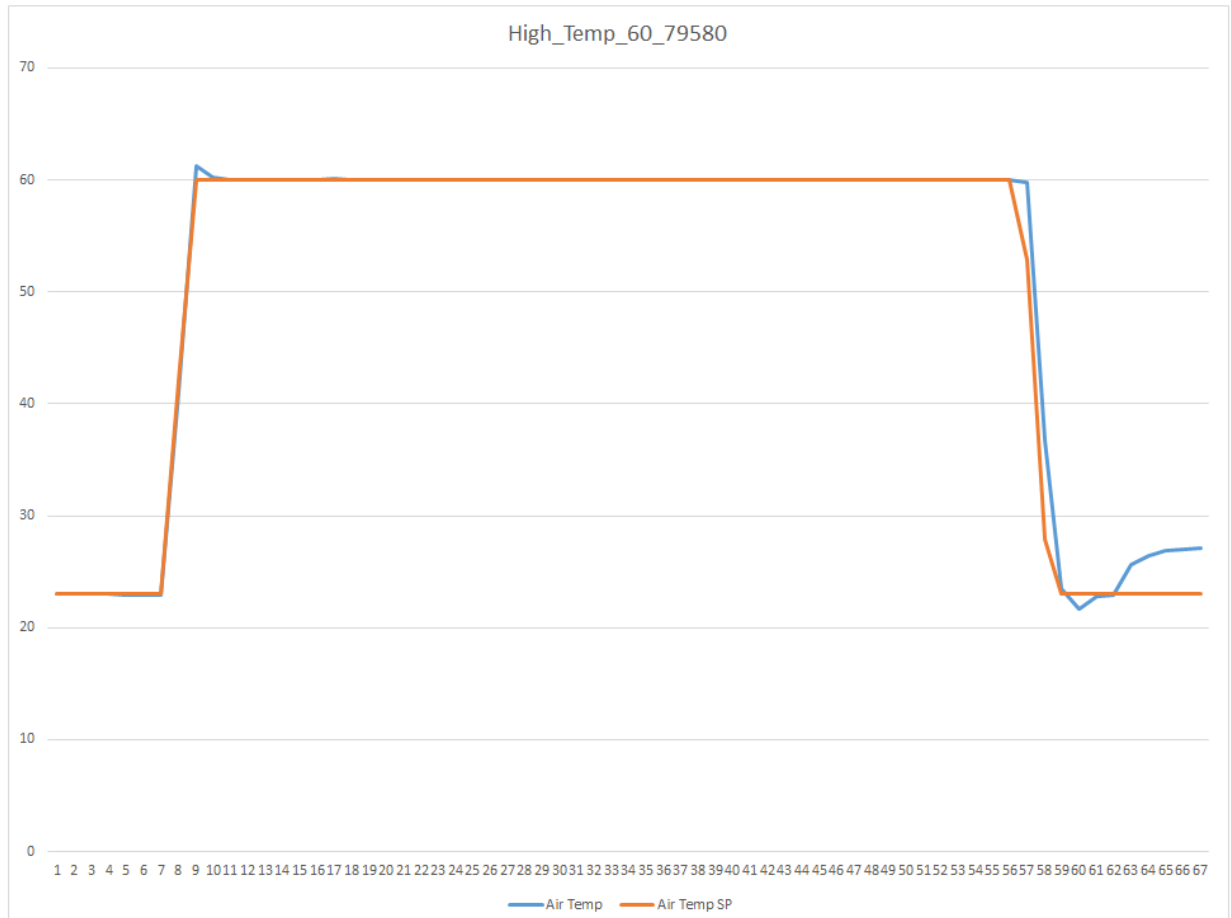
HIGH TEMPERATURE TEST PHOTOS







HIGH TEMPERATURE TEST DATA PLOT





HIGH TEMPERATURE TEST LOG & EQUIPMENT LIST



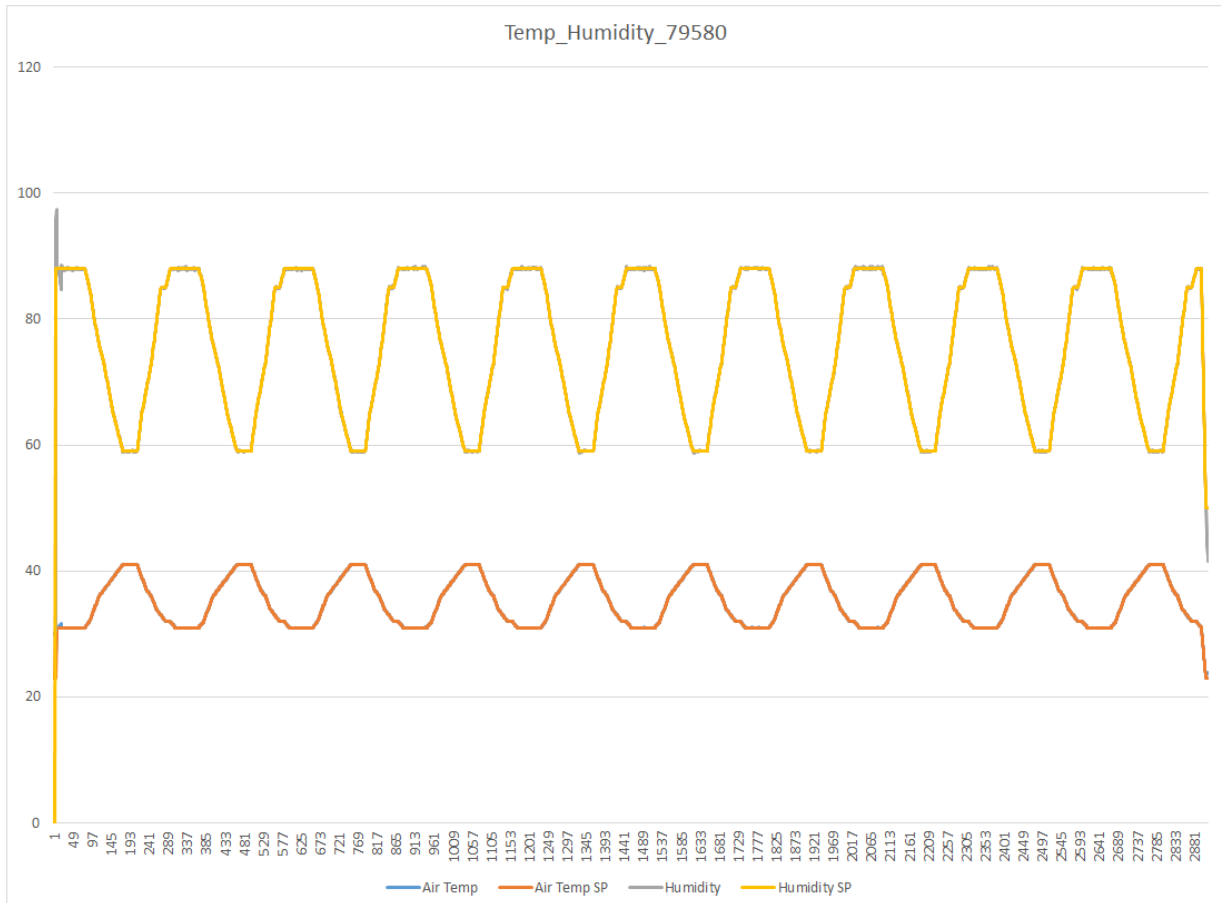
TEMPERATURE & HUMIDITY TEST PHOTOS







TEMPERATURE & HUMIDITY TEST DATA PLOT





TEMPERATURE & HUMIDITY TEST LOG & EQUIPMENT LIST



TEMPERATURE & POWER VARIATION TEST PHOTOS











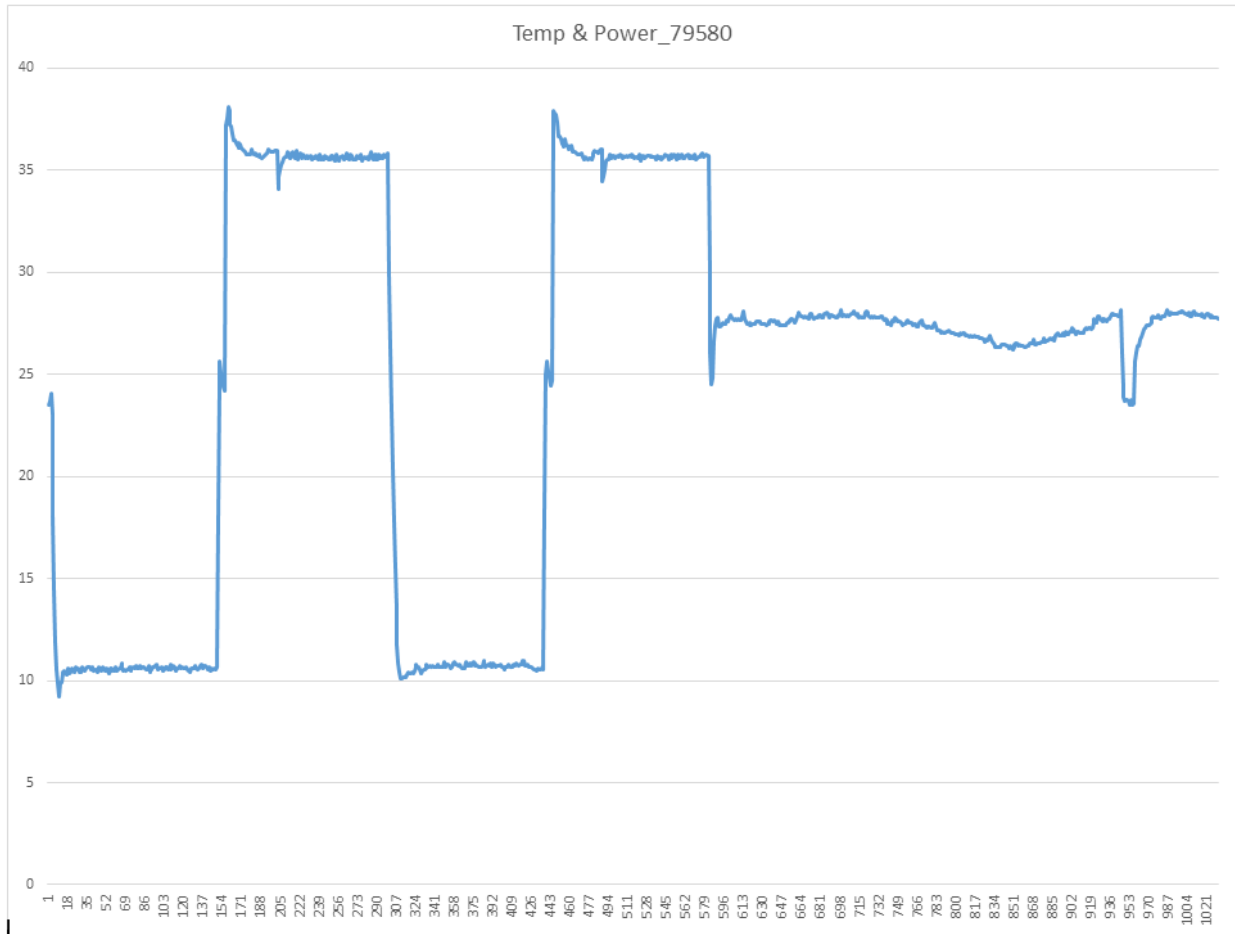








TEMPERATURE & POWER VARIATION TEST DATA PLOT





TEMPERATURE & POWER VARIATION TEST LOG & EQUIPMENT LIST



END OF REPORT