

**APPENDIX C**

**HARDWARE TEST RESULTS**

# VIBRATION TEST DATA SHEET

Customer UNISYN Spec. EAC 2005 VVSG Vol. II Specimen OVI  
Job No. T58650.01 Method Section 4.6.3 Part No. UNI150012 Specimen Temp. Ambient  
GSI Yes  No  Procedure --- S/N --- Photo Yes  No

**Test Title** Transportation Vibration

Date	Time	Axis	Temp (F)	SINUSOIDAL			RANDOM			TOTAL Accel. (grms)	Test Time (min)	COMMENTS	NAME
				Freq. (cps)	Disp. ("da)	Accel. (+g)	Freq. (cps)	PSD (g <sup>2</sup> /Hz)	Slope (dB/Oct)				
11/17/11	12:05	Long	Amb				10-40	.015			Run#1 Basic Transportation	JA	
							500	.00015	1.04	30	Vibration		
11/17/11	13:44	Trans	Amb				10-40	.015			Run#2 Basic Transportation	JA	
							500	.00015	1.05	30	Vibration		
11/17/11	15:27	Vert	Amb				10-40	.015			Run#3 Basic Transportation	JA	
							500	.00015	1.05	30	Vibration		

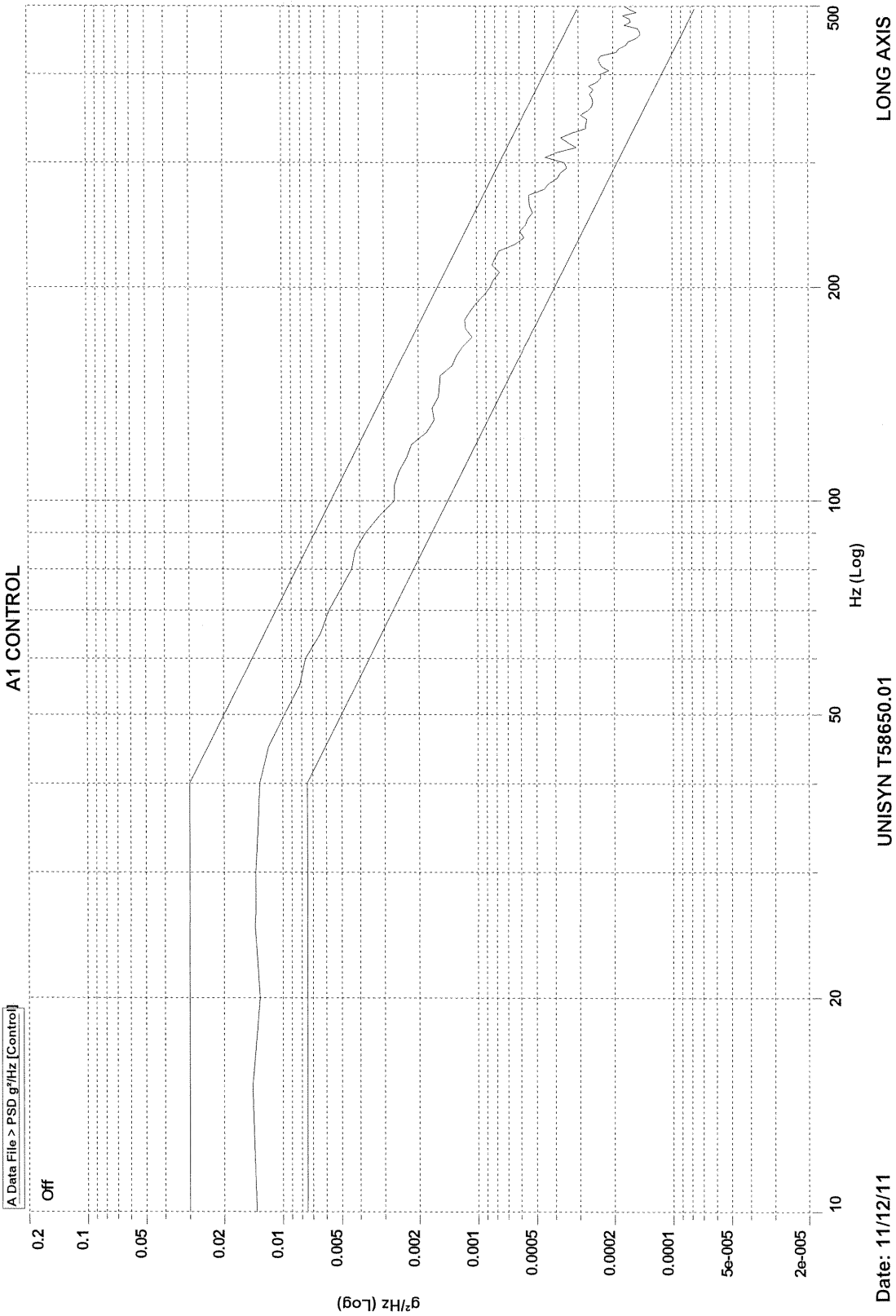
Job No. T58650.01  
Report No. T58650.01-01  
Date 11/17/11  
Page 1 of 1

WH-1028A  
Signed [Signature] 4/17/11  
Approved [Signature] 11/17/11

Level Time: 0000:30:01

CTRL: 1.0551 g  
Test Level: 0.0000 dB

RUN#1 BASIC TRANSPORTATION VIBRATION OVI & OVO WITH BALLOT BOX AMB TEMP



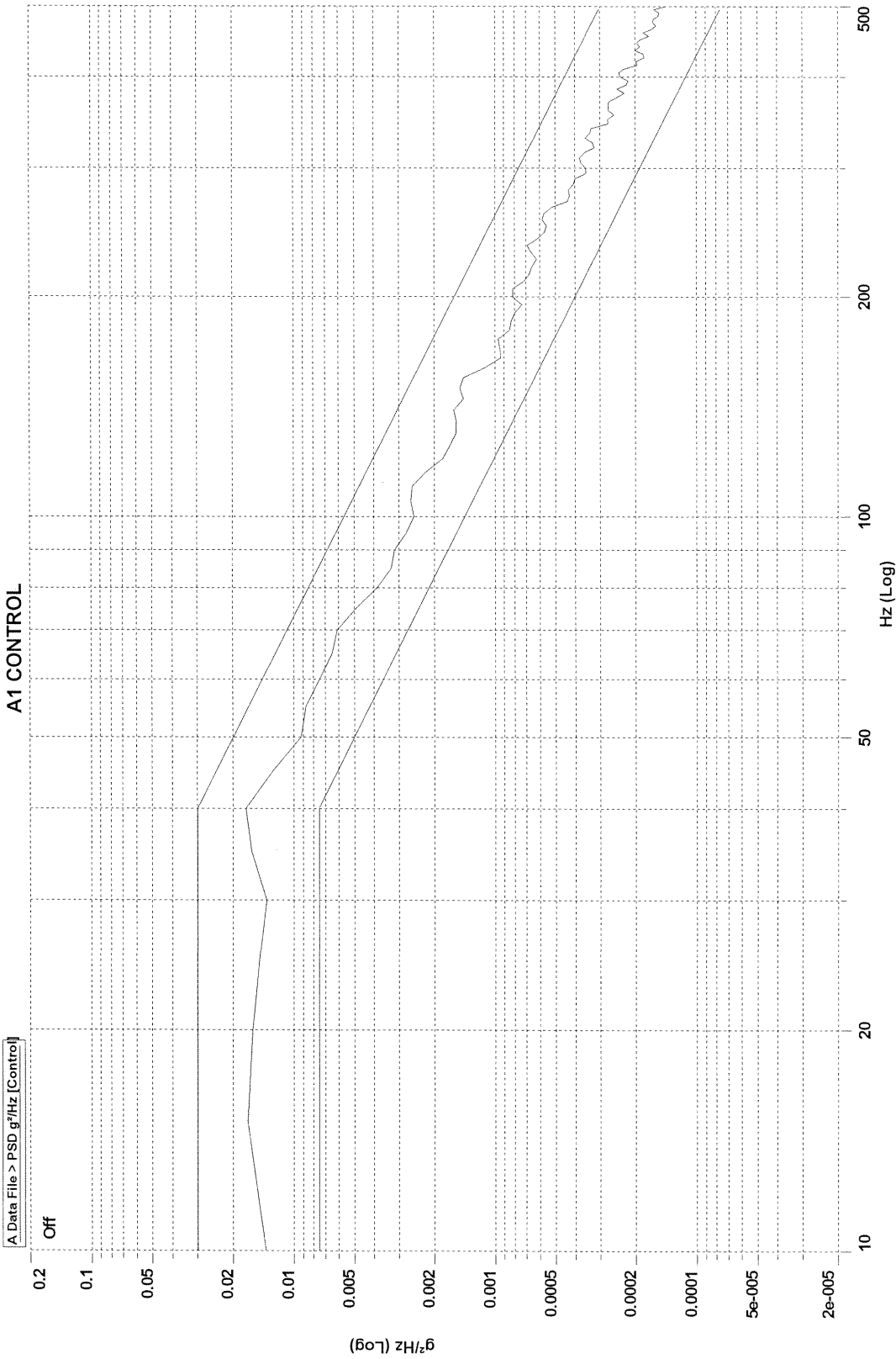
UNISYN T58650.01

Date: 11/12/11

Level Time: 0000:30:01

CTRL: 1.0800 g  
Test Level: 0.0000 dB

RUN#2 BASIC TRANSPORTATION VIBRATION OVI & OVO WITH BALLOT BOX AMB TEMP



UNISYN T58650.01

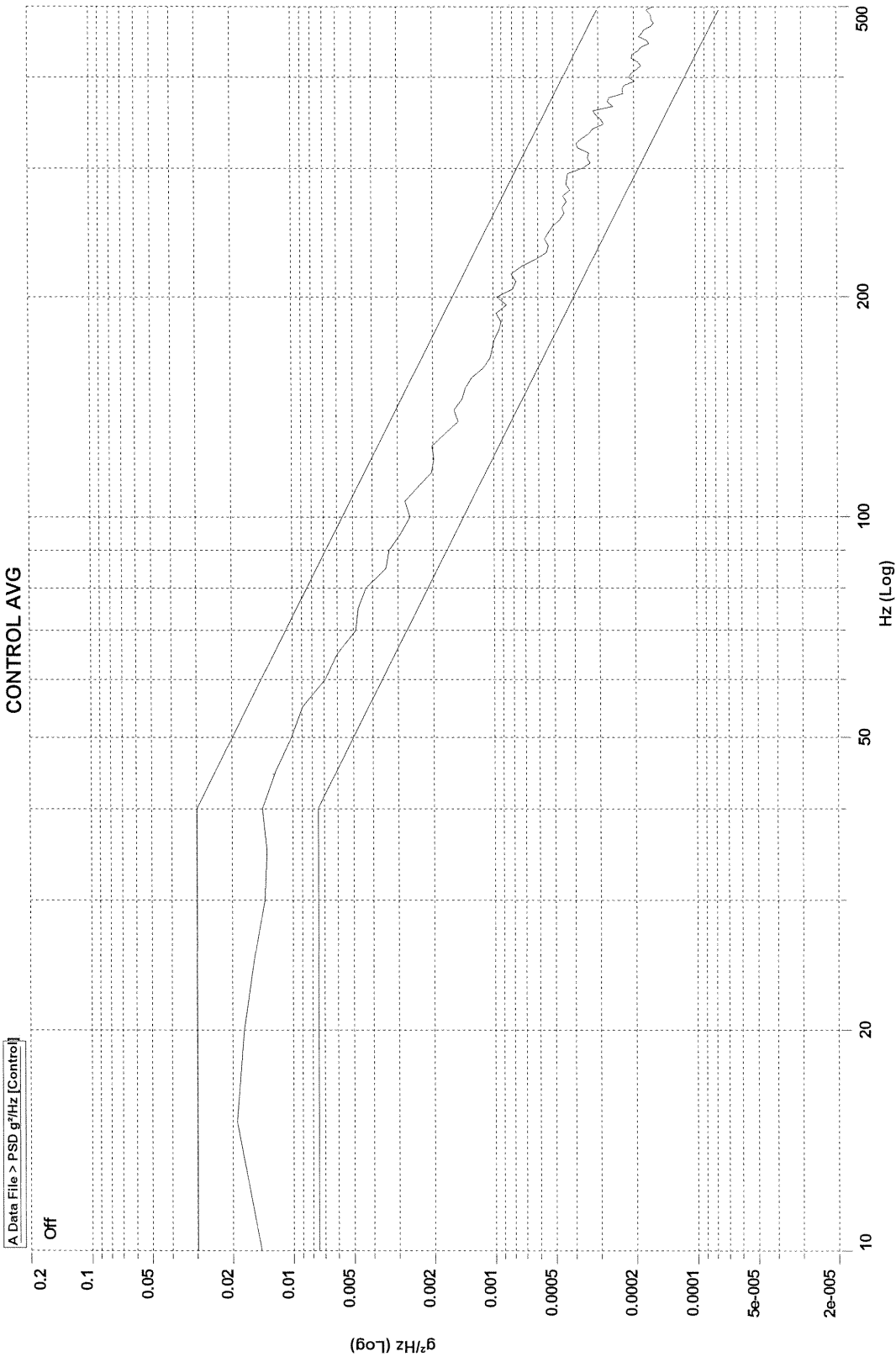
Date: 11/12/11



Level Time: 0000:30:01

CTRL: 1.0832 g  
Test Level: 0.0000 dB

RUN#3 BASIC TRANSPORTATION VIBRATION OVI & OVO WITH BALLOT BOX AMB TEMP



VERT AXIS

UNISYN T58650.01

Date: 11/12/11



Test Time: 0:30:01

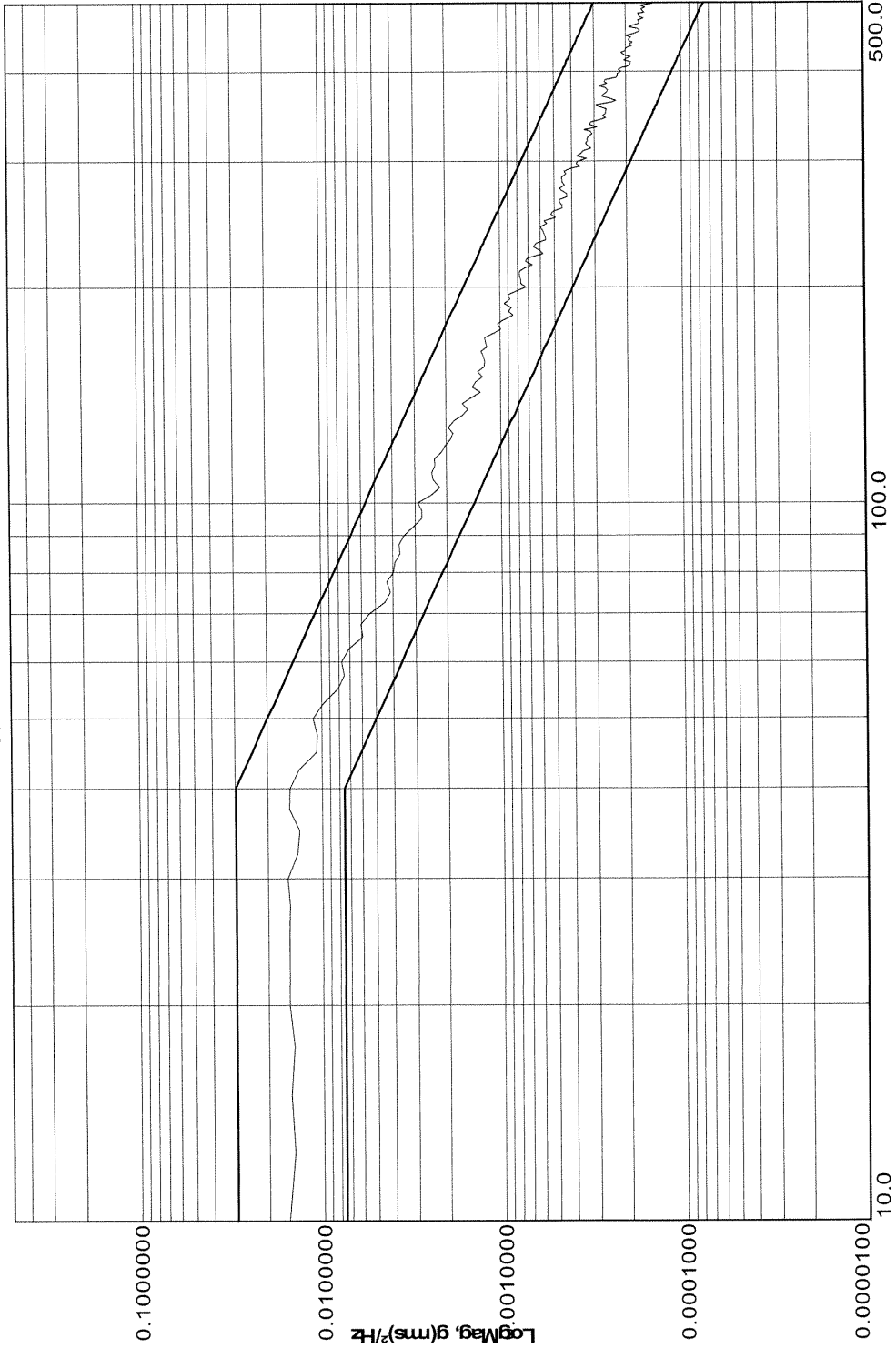
Control Level: 1.0434 g rms

Test Level: 0 dB

Run#1 Basic Transportation Vibration OVI Unit Ambient Temperature

A1 Control

wyle  
laboratories



Hz

Long Axis

UNISYN T58650.01

11/17/2011

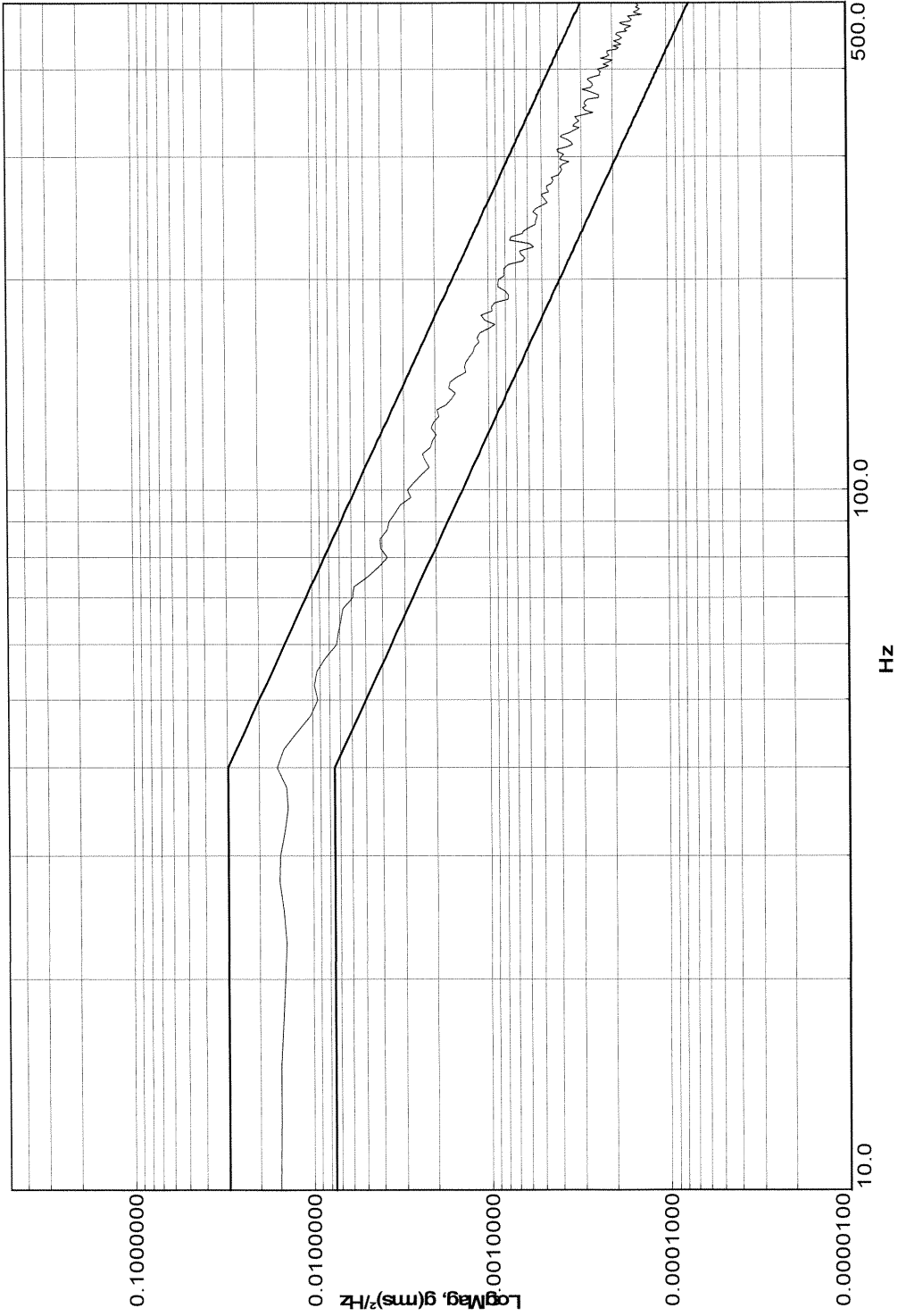
Test Time: 0:30:01

Control Level: 1.0560 g rms

Test Level: 0 dB

Run#2 Basic Transportation Vibration OVI Unit Ambient Temperature

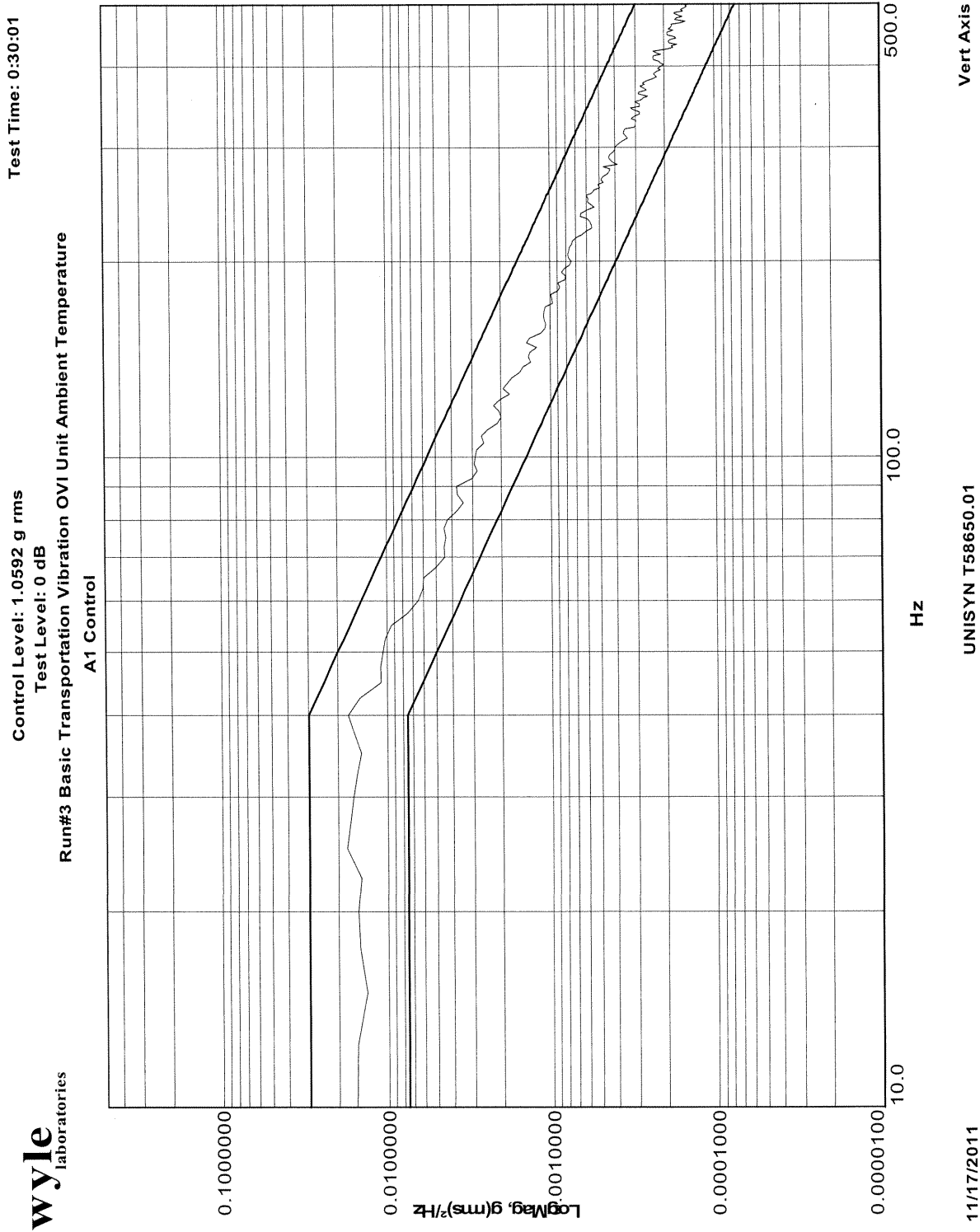
A1 Control



Trans Axis

UNISYN T58650.01

11/17/2011



wyle  
laboratories









## DATA SHEET

Job No.: T58650.01  
Start Date: 1/18/2011

Customer: Unisyn      Temperature: 72°F      Humidity: 41%  
EUT: OVI 15"      Measurement Point: See Test Points Below  
Model No.: OpenElect Voting Interface      Interference Signal: See Applied Signal  
Serial No.: UNI150012      Frequency Range: N/A

Test Title Electrostatic Disruption

Test Points	Meets Limit		Applied Level (kV)	Discharge Type	Times Tested	Comments
	Yes	No				
Horizontal Coupling Plane	X		±2, 4, 6, 8	Contact	10	Each Side of EUT
Vertical Coupling Plane	X		±2, 4, 6, 8	Contact	10	Each Side of EUT
Keyhole	X		±2, 4, 6, 8	Contact	10	
Right Side of OVI, Lower Chassis	X		±2, 4, 6, 8	Contact	10	
Left Side of OVI, Lower Chassis	X		±2, 4, 6, 8	Contact	10	
Back of OVI Right Screen Brace	X		±2, 4, 6, 8	Contact	10	
Back of OVI, Right Side, Rivet	X		±2, 4, 6, 8	Contact	10	
Back of OVI, Left Side, ATI Connector	X		±2, 4, 6, 8	Contact	10	
Right Side of OVI, Screen Brace	X		±2, 4, 6, 8	Contact	10	
Monitor AC Adapter Light	X		±2, 4, 8, 15	Air	10	
Monitor AC Adapter Cord Connector	X		±2, 4, 8, 15	Air	10	
Monitor AC Adapter Side	X		±2, 4, 8, 15	Air	10	
Monitor Upper Left Corner	X		±2, 4, 8, 15	Air	10	
Monitor Lower Left Corner	X		±2, 4, 8, 15	Air	10	
Monitor Center	X		±2, 4, 8, 15	Air	10	
Monitor Status Light	X		±2, 4, 8, 15	Air	10	
Monitor Lower Right Corner	X		±2, 4, 8, 15	Air	10	
Monitor Upper Right Corner	X		±2, 4, 8, 15	Air	10	
Monitor Power Button	X		±2, 4, 8, 15	Air	10	
Monitor Right Side	X		±2, 4, 8, 15	Air	10	

Notice of Anomaly: \_\_\_\_\_

Tested By: [Signature]      Date: 11-22-11  
Technician

Witness: \_\_\_\_\_

Approved: [Signature]      Date: 11-22-11  
Project Engineer





INSTRUMENTATION EQUIPMENT SHEET

DATE: 11/11/2011  
TECHNICIAN: D.MEDLEY

JOB NUMBER: T58650.01  
CUSTOMER: UNISYN

TYPE OF TEST: VIBRATION  
TEST AREA: DYN LAB

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	ACCELEROMETER	ENDEVCO	7704A-50	12608	04868	50pC/g	±5%	7/27/2011	1/27/2012
2	ACCELEROMETER	ENDEVCO	7704A-50	12607	04869	50pC/g	±5%	7/27/2011	1/27/2012
3	CHARGE	ENDEVCO	2775A	EE30	112651	GAIN	1.5%	7/21/2011	1/17/2012
4	CHARGE	ENDEVCO	2775A	ED75	112653	GAIN	1.5%	7/21/2011	1/21/2012
5	DMM	KEITHLEY	179A	196804	101203	1200VDC	±.04%DC	2/4/2011	2/4/2012
6	VIB CONTROL	SPECTRAL DYNAL	2400	1657	116969	MFG	MFG	3/9/2011	3/9/2012

This is to certify that the above instruments were calibrated using state-of-the-art techniques with standards whose calibration is traceable to the National Institute of Standards and Technology.

INSTRUMENTATION:

*D. Medley* 11/11/11

CHECKED & RECEIVED BY:

*Wendy Owens* 11/11/11

Q.A.:

*Paul Smith* 11/11/11



INSTRUMENTATION EQUIPMENT SHEET

DATE: 11/17/2011      JOB NUMBER: T58650.01      TYPE OF TEST: VIBRATION  
TECHNICIAN: D.MEDLEY      CUSTOMER: UNISYN      TEST AREA: DYN LAB

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	ACCELEROMETER	ENDEVCO	7704-50	13073	02600	50 pC/g / 20-5kF	±5%	7/27/2011	1/27/2012
2	ACCELEROMETER	ENDEVCO	7704A-50	12634	04866	50pC/g	±5%	10/11/2011	4/8/2012
3	CHARGE	ENDEVCO	2775A	EE31	112649	GAIN	±1.5%	6/9/2011	12/6/2011
4	CHARGE	ENDEVCO	2775A	EE24	112652	GAIN	1.5%	6/9/2011	12/6/2011
5	DMM	KEITHLEY	179A	196804	101203	1200VDC	±.04%DC	2/4/2011	2/4/2012
6	DYN SIG	DATA PHYSICS CC	70499	10004048	02760	MULTI	MFG	5/4/2011	5/3/2012

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INSTRUMENTATION:

*D. Medley* 11/17/11

CHECKED & RECEIVED BY:

*Ray Jones* 11/17/2011  
*Wyle* 11/17/11

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Q.A.:



INSTRUMENTATION EQUIPMENT SHEET

DATE: 12/12/2011      JOB NUMBER: T58650.01      TYPE OF TEST: USABILITY ACCESSIBILITY  
TECHNICIAN: C. MORFORD      CUSTOMER: UNISYN/ILTS      TEST AREA: VSTL LAB 4

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	MEASURE SET	MITUTOYO	DIGIMATIC	7179294/0214	108976	1"/6"	.0005"	11/4/2011	11/4/2013
2	PUSH-PULL GAGE	CHATILLON	DPP-50		101990	50 lbs	±0.5 lb	7/6/2011	7/6/2012
3	TAPE MEASURER	LUFKIN	HV1048CME	NSN	02710	26' 8meters	±1in / ±1mm	5/4/2011	5/4/2013

This is to certify that the above instruments were calibrated using state-of-the-art techniques with standards whose calibration is traceable to the National Institute of Standards and Technology.

INSTRUMENTATION: Byron Miller 12-12-11

CHECKED & RECEIVED BY: Wendy Owens 12/12/11

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Q.A.: Blonda New 12/12/11



INSTRUMENTATION EQUIPMENT SHEET

DATE: 11/18/2011      JOB NUMBER: T58650      TYPE OF TEST: VVS 4.1.2.8,ESD  
TECHNICIAN: J.MCDERMOTT      CUSTOMER: UNISYN      TEST AREA: EMI LAB

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	DATALOGGER	EXTECH	42280	9051859	04926	-4°F to 144°F/0-	±1°F / ±3%RH	2/10/2011	2/10/2012
2	DISCHARGE	EMC-PARTNER	ESD3000DMI	049	03229	150pF	MFG	12/17/2010	12/17/2011
3	ESD GUN	EMC-PARTNER	ESD3000	059	04446	16.5 KV	±10%	12/17/2010	12/17/2011
4	ESD TARGET	HAEFELY TRENCI	2520311	152461	110794	15KV	±5%	11/11/2011	11/21/2011
5	OSCILLOSCOPE	TEKTRONIX	TDS684C	B020598	116832	1GHz BW	<50ps@5GS/s	11/18/2011	11/28/2011

This is to certify that the above instruments were calibrated using state-of-the-art techniques with standards whose calibration is traceable to the National Institute of Standards and Technology.

INSTRUMENTATION:

*J. McDermott* 11-19-2011

CHECKED & RECEIVED BY:

*Ryan Fisher* 11-18-2011

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Q.A.:

*Revert* *M. Cox* 11/18/11





INSTRUMENTATION EQUIPMENT SHEET

DATE: 11/21/2011      JOB NUMBER: T58650.01      TYPE OF TEST: FCC PART 15  
TECHNICIAN: J. SMITH      CUSTOMER: ILTS      TEST AREA: OATS 2

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	ANTENNA	ELECTROMETRIC	EM-6917A-1	124116	114415	30MHZ - 3GHZ	SEE DATA	7/20/2011	7/20/2013
2	ATTEN	NARDA	776C-20	1711	02173	20dB	MFG	1/13/2011	1/13/2012
3	EMI TEST RCVR	ROHDE SCHWARZ	ESCI	100386	117803	MULTI	MFG	12/8/2010	12/8/2011
4	LISN	FISHER CC	FCC-LISN-50-15-1-01	02067	117145	10KHz to 100MI	±0.7dB	8/20/2010	8/20/2012
5	LISN	FISHER CC	FCC-LISN-50-15-1-01	02068	117146	10KHz to 100MI	±0.7dB	8/20/2010	8/20/2012
6	LISN	SOLAR	8028-50	956303	113693	10K-30MHZ	CERT	9/9/2010	9/9/2012
7	LISN	SOLAR	8028-50	968418	113694	10K-30MHZ	CERT	9/9/2010	9/9/2012
8	LISN	SOLAR	8028-50-TS-24-BNC	974623	113973	10K-100MHZ	CERT	9/9/2010	9/9/2012

This is to certify that the above instruments were calibrated using state-of-the-art techniques with standards whose calibration is traceable to the National Institute of Standards and Technology.

INSTRUMENTATION:

*J. Smith* 11/28/11

CHECKED & RECEIVED BY:

*Robert Hand* 11/28/11

Q.A.:

*[Signature]* 11/28/11

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INSTRUMENTATION EQUIPMENT SHEET

DATE: 11/3/2011      JOB NUMBER: T58650      TYPE OF TEST VSG 4.1.2.10  
TECHNICIAN: J. GALEONE      CUSTOMER: UNISYN/ILTS      TEST AREA: EMI LAB CHAMBER 1

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	AMPLIFIER	AMP RESEARCH	500W1000A	25361	03141	80MHz to 1GHz	NCR	8/10/2011	8/10/2012
2	ANTENNA	AR	AT6080	0330329	02247	80-6000MHz	NCR	3/28/2011	3/28/2020
3	DIR COUPLER	AMP RESEARCH	DC6080	21207	113788	80-1000MHZ	.5db	5/17/2011	5/17/2012
4	SIG GEN	MARCONI	2023	112224/092	L12224	9kHz-1.2GHz	±0.8dB	1/4/2011	1/4/2012
5	SPEC ANAL	AGILENT	E4446A	US42070108	110948	44 GHz	CERT	6/3/2011	6/3/2012
6	TAPE MEASURER	LUFKIN	HV1048CME	NSN	02710	26' 8meters	±1in / ±1mm	5/4/2011	5/4/2013

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INSTRUMENTATION:

*[Signature]*  
03 Nov 11

CHECKED & RECEIVED BY:

*W. Bud* 11/3/11

Q.A.:

*[Signature]* 11/3/11

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**INSTRUMENTATION EQUIPMENT SHEET**

DATE: 11/10/2011      JOB NUMBER: T58650      TYPE OF TEST: VVSG 4.1.2.11  
 TECHNICIAN: J. GALEONE      CUSTOMER: UNISYN/ILTS      TEST AREA: EMI LAB CHAMBER 1

No.	Description	Manufacturer	Model	Serial #	WYLE #	RANGE	ACCURACY	Cal Date	Cal Due
1	AMPLIFIER	AR	2500A225	NSN	01308	MFG	NCR	8/11/2011	8/11/2013
2	ATTEN	BIRD	25-T-MN	0129	03142	50 OHMS 25 W.	MFG	5/23/2011	5/23/2012
3	ATTENUATOR	NARDA	769-6	03180	04860	DC to 6GHz	MFG	3/16/2011	3/16/2012
4	DIR COUPLER	AMP RESEARCH	DC3010	304022	117208	.01-1000MHz	±0.8dB	4/13/2011	4/13/2012
5	PASS IMP ADAPT	FISHER CC	FCC-801-150-50-CD	9785	116853	150KHz-230MH	MFG	7/15/2011	7/15/2012
6	PASS IMP ADAPT	FISHER CC	FCC-801-150-50-CD	9784	116854	150KHz-230MH	MFG	7/15/2011	7/15/2012
7	PASSIVE	FISHER CC	FCC-801-150-50-CD	04049/04050	110405	150KHZ - 230M	MFG	7/15/2011	7/15/2012
8	SIG GEN	AEROFLEX	2023A	202306/068	R20230	9KHz-1.2GHz	MFG	10/4/2011	10/4/2012
9	SPEC ANAL	AGILENT	E4446A	US42070108	110948	44 GHz	CERT	6/3/2011	6/3/2012
10	SPEC ANAL	AGILENT	E4446A	MY46180335	R80335	MFG	MFG	7/25/2011	7/25/2013
11	TAPE MEASURER	LUFKIN	HV1048CME	NSN	02708	8meters	±Imm	4/14/2010	4/14/2012

This is to certify that the above instruments were calibrated using state-of-the-art techniques with standards whose calibration is traceable to the National Institute of Standards and Technology.

INSTRUMENTATION:

*[Handwritten Signature]*  
 05000

CHECKED & RECEIVED BY:

*[Handwritten Signature]* 11/10/11  
*[Handwritten Signature]* 11/10/11

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