



ENGINEERING AND TEST DIVISION
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TEST REPORT NO.: 414305-00-01-R14-1217

DAYTON T. BROWN, INC. JOB NO.: 414305-00-000

CUSTOMER: SARGENT AND GREENLEAF, INC.
ONE SECURITY DRIVE
NICHOLASVILLE, KY 40356

SUBJECT: ELECTROMAGNETIC SUSCEPTIBILITY TEST PROGRAM PERFORMED ON
EIGHT LOCK ASSEMBLIES

PURCHASE ORDER NO.: 4502226428

THIS REPORT CONTAINS: 32 PAGES

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DATE:	JANUARY 9, 2015

INFORMATION CONTAINED HEREIN MAY BE SUBJECT TO EXPORT CONTROL LAWS. REFER TO INTERNATIONAL TRAFFIC IN ARMS REGULATION (ITAR) OR THE EXPORT ADMINISTRATION REGULATION (EAR) OF 1979

THE DATA CONTAINED IN THIS REPORT WAS OBTAINED BY TESTING IN COMPLIANCE WITH THE APPLICABLE TEST SPECIFICATION AS NOTED



Revision History

Revision	Date	Section Affected	Change
-	01/09/15	-	-

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1.0 Abstract

This report details the results of the electromagnetic susceptibility test program on the Lock Assemblies. Testing was performed in accordance with Paragraph 2.0 and was performed at Dayton T. Brown, Inc., Bohemia, New York.

The Lock Assemblies hereafter are referred to as EUT (Equipment Under Test).

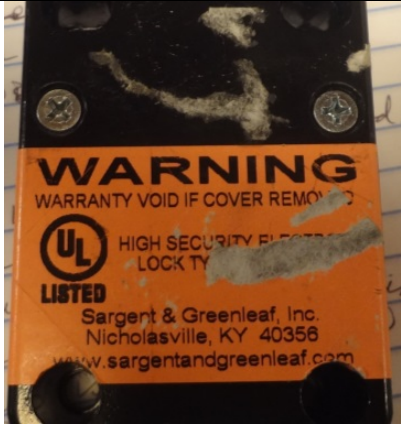





The EUT components are as follows:

Table 1 - EUT Components

	Component	Model No.	Serial No.
1	Lock Assembly	2006-101-000	N/A
2	Lock Assembly	2006-101-000	8736-1486-3412
3	Lock Assembly	2006-101-000	8736-1486-3411
4	Lock Assembly	2006-101-000	8736-1407-0341
5	Lock Assembly	2007-101-000	8852-1410-3383
6	Lock Assembly	2006-101-000	8736-1406-3416
7	Lock Assembly	6124	2123-9539
8	Lock Assembly	6126	N/A

See Table 2 for Photographs of each EUT.

Table 2 - EUT Photographs

1	 <p>WARNING WARRANTY VOID IF COVER REMOVED UL LISTED HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL Sargent & Greenleaf, Inc. Nicholasville, KY 40356 www.sargentandgreenleaf.com</p>	5	 <p>WARRANTY VOID IF COVER REMOVED HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL EN 1300 CLASS B a2p Serrure de coffre Niveau B / E VdS KI 2 M110328</p>
2	 <p>WARRANTY VOID IF COVER REMOVED HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL EN 1300 CLASS B a2p Serrure de coffre Niveau B / E VdS KI 2 M110328</p>	6	 <p>WARRANTY VOID IF COVER REMOVED HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL EN 1300 CLASS B a2p Serrure de coffre Niveau B / E VdS KI 2 M110328</p>
3	 <p>WARRANTY VOID IF COVER REMOVED HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL EN 1300 CLASS B a2p Serrure de coffre Niveau B / E VdS KI 2 M110328</p>	7	Photograph not available
4	Photograph not available	8	 <p>SARGENT & GREENLEAF INC. Nicholasville, KY USA 21239542 08 / 2011 HIGH SECURITY ELECTRONIC LOCK TYPE 1 44TL 630-428 03/06 VdS KI 2 M110328 CONTACTS: 6016677; 6212923; 6094952 VDS KL2 ONLY WITH</p>

Pre and post-test inspections revealed no external physical damage.

1.1 Test Summary

Table 3 lists the tests performed and the corresponding test results:

Table 3 - Test Summary

Test	Test Description	Limit	Met the Spec. Requirements	
			Yes	No
RS105	Radiated Susceptibility, Transient Electromagnetic Field	Figure RS105-1: 50,000 V/m	X	

The test results recorded in this report relate only to those items tested.

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2.0 References

- a) MIL-STD-461F, Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment, 10 December 2007.
- b) MIL-STD-464A, Electromagnetic Environmental Effects Requirements for Systems, 19 December 2002.
- c) DI-EMCS-80200C, Data Item Description, Electromagnetic Interference Test Report (EMITR), 30 November 2007.

3.0 Acronyms and Abbreviations

The following acronyms and abbreviations may be used throughout this document:

Table 4 - Acronyms and Abbreviations

Acronym/ Abbreviation	Description	Acronym/ Abbreviation	Description
A	Amperes	HERF	Hazards of Electromagnetic Radiation to Fuel
AC	Alternating Current	HERO	Hazards of Electromagnetic Radiation to Ordnance
AF	Audio Frequency	HERP	Hazards of Electromagnetic Radiation to Personnel
Amp	Amplifier	HIRF	High Intensity Radiated Fields
Amps	Amperes	HPM	High Power Microwave
ASW	Anti-submarine Warfare	Hz	Hertz
BIT	Built in Test	ISM	Industrial, Scientific and Medical
BW	Bandwidth	ISO	International Organization for Standardization
CI	Commercial Item	k	Kilo
dB	Decibels	LISN	Line Impedance Stabilization Network
DC	Direct Current	M	Mega
DoD or DOD	Department of Defense	m	milli
DRG	Double Ridge Guide	m	Meter
E3 or E ³	Electromagnetic Environmental Effects	μ	micro
E-Field	Electric Field	NDI	Non-Developmental Item
ELF	Extremely Low Frequency	n	nano
EMC	Electromagnetic Compatibility	Ω	Ohm
EMCON	Emission Control	p	pico
EME	Electromagnetic Environment	P-Static	Precipitation Static
EMF	Electromotive Force	PRF	Pulse Repetition Frequency
EMI	Electromagnetic Interference	PWM	Pulse Width Modulation
EMICP	Electromagnetic Interference Control Procedure	RBW	Resolution Bandwidth
EMITP	Electromagnetic Interference Test Procedure	RF	Radio Frequency
EMITR	Electromagnetic Interference Test Report	rms	Root-mean-square
EMP	Electromagnetic Pulse	T	Tesla
ERP	Effective Radiated Power	TEM	Transverse Electromagnetic
ESD	Electrostatic Discharge	TPD	Terminal Protection Device
EUT	Equipment Under Test	UHF	Ultra High Frequency
F	Farad	UUT	Unit Under Test
FCC	Federal Communication Commission	V	Volts
G	Giga	VHF	Very High Frequency
H	Henries	VBW	Video Bandwidth
H-field	Magnetic Field	VLF	Very Low Frequency
GFE	Government Furnished Equipment	W	Watts

4.0 Administrative Information

Table 5 - Administrative Information

a)	EUT Quantity Received:	Eight
b)	Date EUT Received:	December 16, 2014
c)	Date(s) Tested:	December 16, 2014 through December 17, 2014
d)	Date Test Item Shipped:	December 17, 2014
e)	Customer Representative(s) Present During All or Part of the Testing:	
	Name	Affiliation
	Ed Miller	Sargent and Greenleaf, Inc.

5.0 Test Sample Information

5.1 Modifications

No modifications were made to the EUT during the course of this testing program.

6.0 Test Sample Operation

6.1 Mode of Operation

All testing was performed with the EUT operating as follows:

- Lock Assembly in Locked Position installed on Safe

6.2 Susceptibility Criteria

During susceptibility testing, operation of the EUT was monitored for any indication of malfunction or degradation of operation. Operation of the EUT was monitored by Sargent and Greenleaf, Inc. and DTB personnel during the susceptibility testing for the following:

- Lock mechanism to function properly after X, Y and Z positions were tested with 50 kV pulse.

7.0 General Test Information

7.1 Test Facility

All testing was performed at Dayton T. Brown, Inc., Bohemia, New York.

7.2 Setup

The EUT was mounted in a safe on a copper ground plane in accordance with Figure 4 of MIL-STD-461F. The safe was mounted on 5 cm foam that sat on the ground plane on the shielded enclosure floor.

Photograph(s) of the test setups are included in the test method.

8.0 Test Instrumentation

8.1 Instrumentation Characteristics

Measurements are made using test equipment with performance monitored and, whenever possible, calibrated by the Dayton T. Brown, Inc. Metrology Department. The calibration system is set up to meet the applicable requirements stipulated in ISO/IEC 17025, ISO 9001, ANSI/NCSL Z540.1-1994 (R2002), and ISO10012. All measuring instruments are calibrated with traceability to intrinsic, International, or National Standards such as NIST (National Institute of Standards and Technology) at periodic intervals. Details are on file at Dayton T. Brown, Inc., and will be made available upon request.

9.0 Test Methods

9.1 Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

9.1.1 Purpose

The purpose of this test is to verify the ability of the EUT to withstand transient electromagnetic fields.

9.1.2 Limit

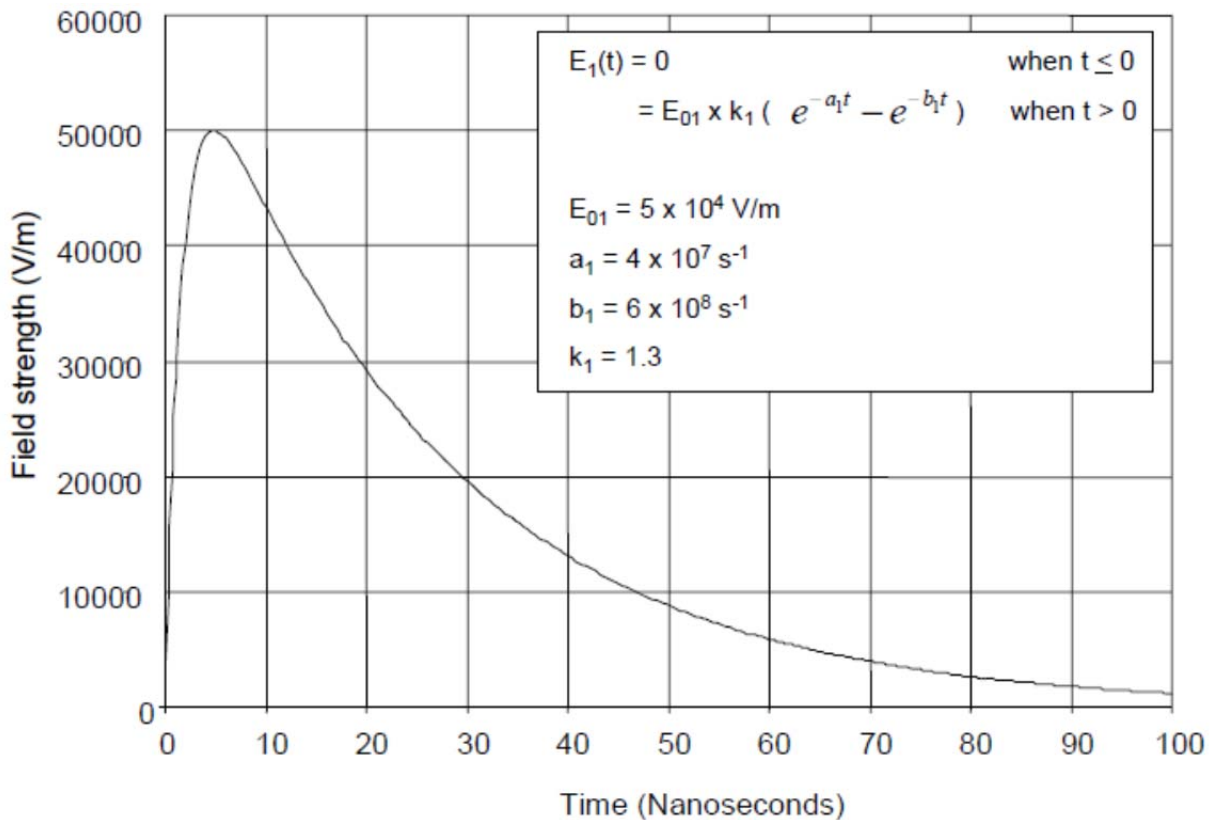


Figure 1 - RS105, Required Limit

9.1.3 Test Setup

The test setup is as detailed in Paragraph 7.2 of this document.

Prior to setting up EUT for testing, the uniform field area of the RS105 test setup was verified to be 1 meter by 1 meter by 1 meter minimum.

The EUT was placed in the centerline of the working volume of the RS105 antenna array in such a manner that it did not exceed the usable volume of the radiation system ($h/3$, $B/2$, $A/2$)/(x , y , z) as shown in Figure RS105-3 of MIL-STD-461F (h is the maximum vertical separation of the plates). The test sample was located below the RS105 antenna, in the center of the uniform field area. A magnetic field sensor was used to measure the field.

The EUT was mounted in a safe on a copper ground plane in accordance with Figure 4 of MIL-STD-461F. The safe was mounted on 5 cm foam that sat on the ground plane on the shielded enclosure floor.

The test setup employed was as detailed in the test setup photograph(s).

9.1.4 Equipment List

Table 6 - RS105 Equipment List

ITEM	MANUFACTURER	MODEL	DTB NO.	CAL DUE DATE
EMP SIMULATOR SYSTEM	FCC	RS105	01E-043	No Cal Required
SENSOR, MAGNETIC FIELD	FCC	HFP-1000A	27-384	05/24/2015
OSCILLOSCOPE, DIGITAL 4 CHANNEL 500MHZ	TEKTRONIX	TDS 3054B	995303	06/27/2015

9.1.5 Calibration

Before the EUT was installed in the test setup, the field strength of the RS105 setup was verified.

The magnetic field sensor was placed in the center position of the five-point grid in the vertical plane where the front face of the EUT will be located.

Using the magnetic field sensor, it was verified that the pulsed field produced met the peak amplitude, rise time, and pulse width.

For 50,000 V/m the required magnetic field was 132.63 A/m:

$$\text{Electric Field Strength} = \text{Magnetic Field Strength} \times \text{Impedance of Air}$$

Where:

Electric Field Strength (Target = 50,000 V/m)

Magnetic Field Strength Measured with sensor (Target = 132.63 A/m)

Impedance of Air = 377 Ohms

The pulse waveform was recorded on the oscilloscope.

The pulse generator settings and associated pulse drive amplitude were determined to satisfy the field requirements.

This process was repeated at each of the other four points of the grid.

The peak value of the electric or magnetic field for each grid position was verified to be 0 dB < magnitude < 6 dB above limit.

The calibration setup is illustrated in Figure 2.

9.1.6 Test Procedure

The pulse was applied at the calibrated generator setting to ensure that the drive pulse waveform characteristics were consistent with those noted during calibration.

The pulse was applied starting at approximately 20% (minimum possible with RS105 simulator system) of the pulse peak amplitude determined in calibration. The pulse amplitude was increased the in step sizes of 2 or 3 until the required level is reached.

At least 10 pulses at a rate of not more than one pulse per minute were applied to the front face (X-Axis) of the EUT. The EUT was also tested in the Y-Axis and Z-Axis.

The EUT monitored during and after each pulse for signs of susceptibility or degradation of performance.

If susceptibility was observed, the threshold level of susceptibility was determined, recorded, and included in this test report.

9.1.7 Test Results

No change in indication, malfunction, or degradation in the EUT operation was observed during or after the MIL-STD-461F, Method RS105 test per Sargent and Greenleaf, Inc. and DTB personnel.

See the following test data for detailed test results.

9.1.7.1 RS105, Calibration Data

Test Item:	<u>Lock Assemblies</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Serial No.:	<u>N/A</u>
Test Mode:	<u>Calibration (Center)</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

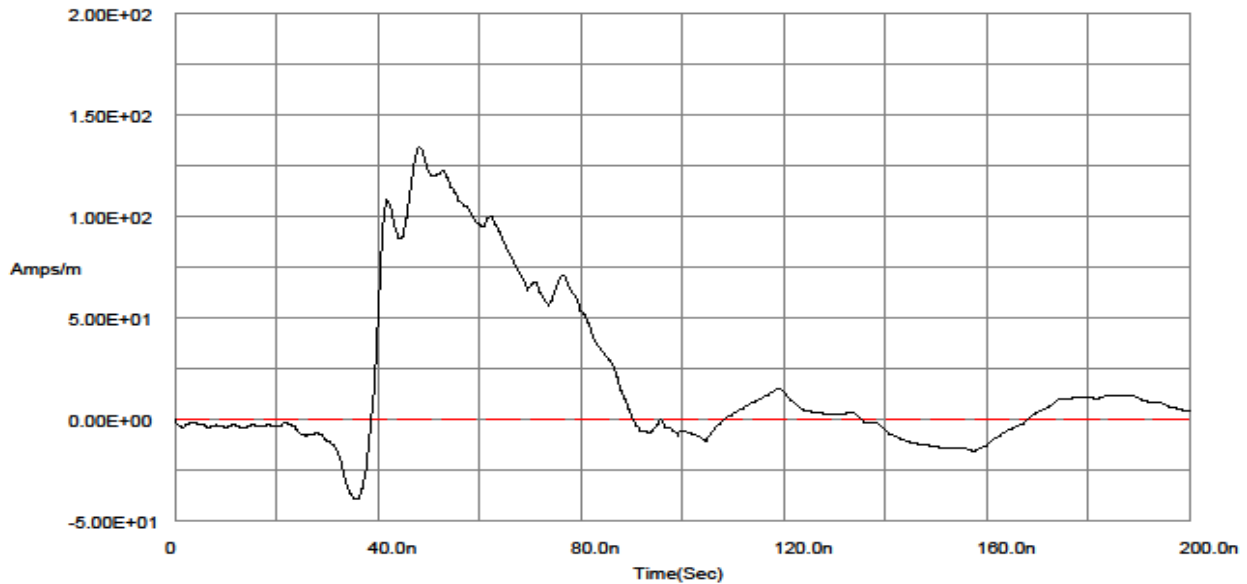
Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

RS-105 Simulator H-Field Calibration

12/16/2014 1:27:56 PM

Test Point: CENTER4	Time Max: 2.00E-07 Sec
Test Date: 12-16-2014 13:26:34	Min: 0.00E+00 Sec
Test Type: Time Domain Acquisition	Amp Max: 1.35E+02 Amps/m
Facility: Dayton T Brown	Min: -3.87E+01 Amps/m
Sig Probe: H-FP1000A(01-23-2009)(09-04)	

Description :



Required A/m:	<u>133</u>	Measured Ip:	<u>135</u>	Power Supply Setting, kV:	<u>39.5 kV</u>
Required V/m:	<u>50,000</u>	Measured Vp:	<u>50,895</u>		

Remarks: Measured V/m = Measured A/m x 377



Test Item:	<u>Lock Assemblies</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Serial No.:	<u>N/A</u>
Test Mode:	<u>Calibration (Left Front)</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

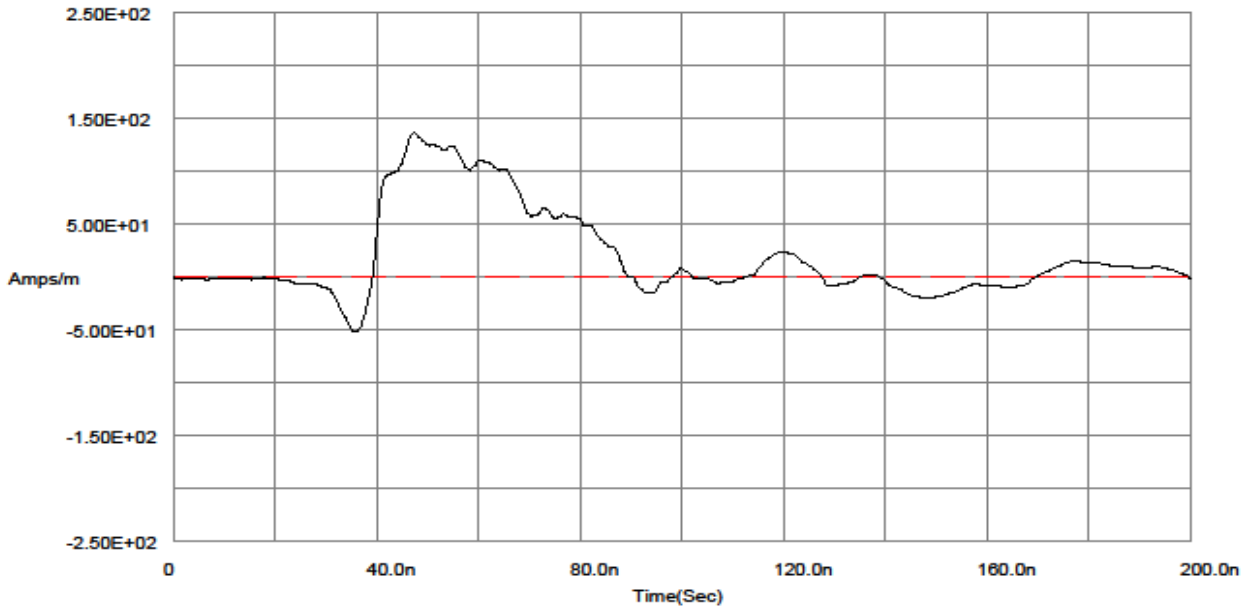
Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

RS-105 Simulator H-Field Calibration

12/16/2014 2:21:58 PM

Test Point: LEFT FRONT2	Time Max: 2.00E-07 Sec
Test Date: 12-16-2014 14:21:21	Min: 0.00E+00 Sec
Test Type: Time Domain Acquisition	Amp Max: 1.37E+02 Amps/m
Facility: Dayton T Brown	Min: -5.14E+01 Amps/m
Sig Probe: H-FP1000A(01-23-2009)(09-04)	

Description :



Required A/m:	<u>133</u>	Measured Ip:	<u>137</u>	Power Supply Setting, kV:	<u>39.5 kV</u>
Required V/m:	<u>50,000</u>	Measured Vp:	<u>51,649</u>		

Remarks: Measured V/m = Measured A/m x 377



Test Item:	<u>Lock Assemblies</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Serial No.:	<u>N/A</u>
Test Mode:	<u>Calibration (Left Rear)</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

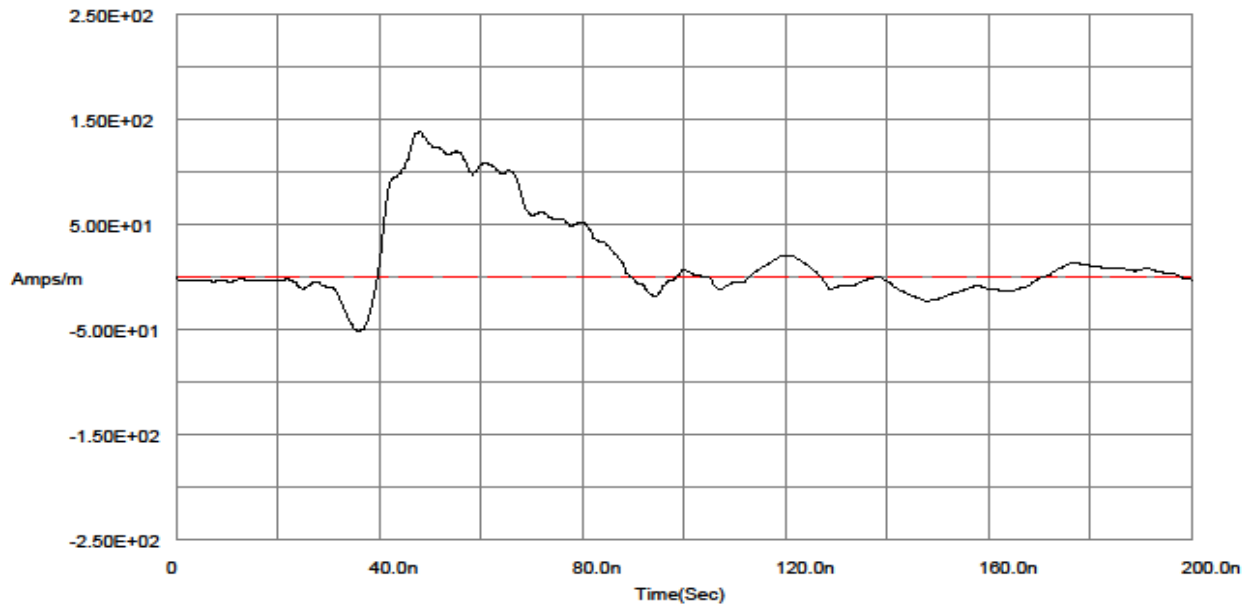
Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

RS-105 Simulator H-Field Calibration

12/16/2014 2:27:15 PM

Test Point: LEFT REAR1	Time Max: 2.00E-07 Sec
Test Date: 12-16-2014 14:26:48	Min: 0.00E+00 Sec
Test Type: Time Domain Acquisition	Amp Max: 1.39E+02 Amps/m
Facility: Dayton T Brown	Min: -5.08E+01 Amps/m
Sig Probe: H-FP1000A(01-23-2009)(09-04)	

Description :



Required A/m:	<u>133</u>	Measured Ip:	<u>139</u>	Power Supply Setting, kV:	<u>39.5 kV</u>
Required V/m:	<u>50,000</u>	Measured Vp:	<u>52,406</u>		

Remarks: Measured V/m = Measured A/m x 377



Test Item:	<u>Lock Assemblies</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Serial No.:	<u>N/A</u>
Test Mode:	<u>Calibration (Right Rear)</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

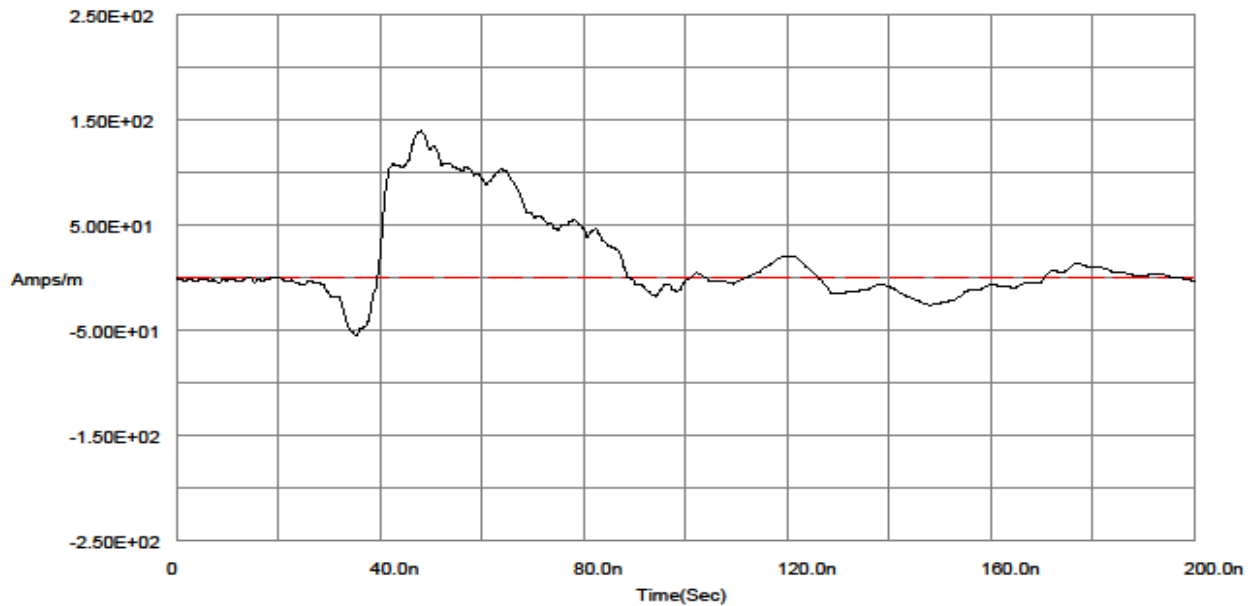
Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

RS-105 Simulator H-Field Calibration

12/16/2014 2:29:27 PM

Test Point: RIGHT REAR	Time Max: 2.00E-07 Sec
Test Date: 12-16-2014 14:29:03	Min: 0.00E+00 Sec
Test Type: Time Domain Acquisition	Amp Max: 1.40E+02 Amps/m
Facility: Dayton T Brown	Min: -5.48E+01 Amps/m
Sig Probe: H-FP1000A(01-23-2009)(09-04)	

Description :



Required A/m:	<u>133</u>	Measured Ip:	<u>142</u>	Power Supply Setting, kV:	<u>39.5 kV</u>
Required V/m:	<u>50,000</u>	Measured Vp:	<u>52,780</u>		

Remarks: Measured V/m = Measured A/m x 377



Test Item:	<u>Lock Assemblies</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Serial No.:	<u>N/A</u>
Test Mode:	<u>Calibration (Right Front)</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

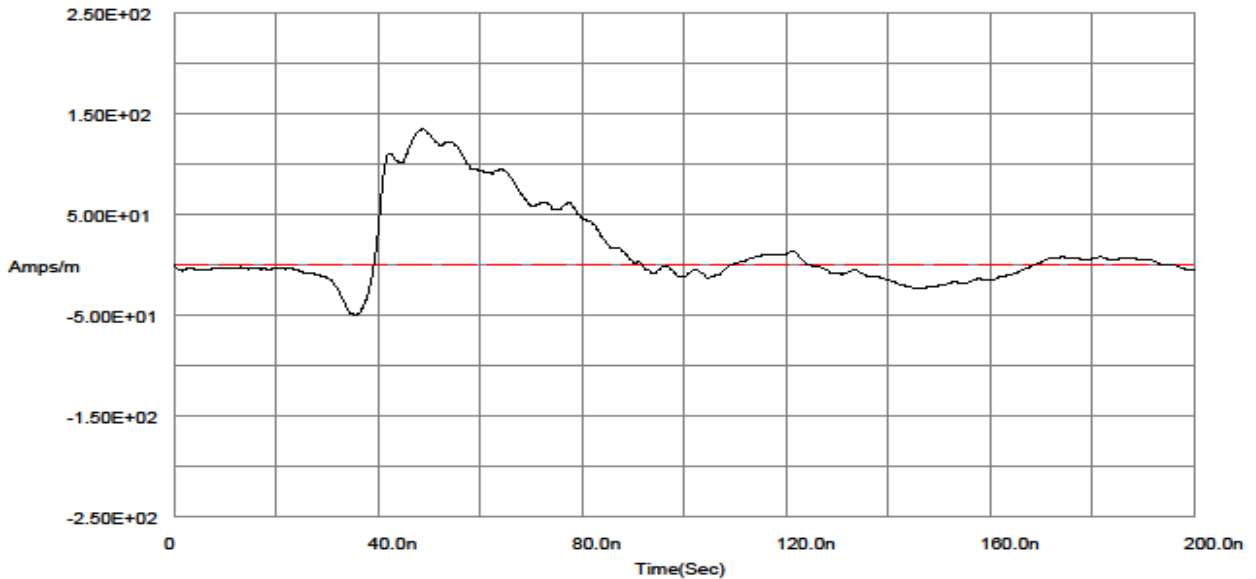
Radiated Susceptibility, Method RS105, Transient Electromagnetic Field

RS-105 Simulator H-Field Calibration

12/16/2014 1:57:16 PM

Test Point: RIGHT FRONT 1	Time Max: 2.00E-07 Sec
Test Date: 12-16-2014 13:56:22	Min: 0.00E+00 Sec
Test Type: Time Domain Acquisition	Amp Max: 1.38E+02 Amps/m
Facility: Dayton T Brown	Min: -4.89E+01 Amps/m
Sig Probe: H-FP1000A(01-23-2009)(09-04)	

Description :



Required A/m:	<u>133</u>	Measured Ip:	<u>135</u>	Power Supply Setting, kV:	<u>39.5 kV</u>
Required V/m:	<u>50,000</u>	Measured Vp:	<u>51,272</u>		

Remarks: Measured V/m = Measured A/m x 377



9.1.7.2 RS105, Test Data

Test Item:	<u>Lock Assembly</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2006-101-000, Serial No. N/A</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.

Remarks: Customer requested not to run the Z-Axis on this EUT



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/17/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2006-101-000, Serial No. 8736-1486-3412</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/17/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2006-101-000, Serial No. 8736-1486-3411</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/17/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2006-101-000, Serial No. 8736-1407-0341</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/17/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2007-101-000, Serial No. 8852-1410-3383</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/17/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 2006-101-000, Serial No. 8736-1406-3416</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 6124, Serial No. 2123-9539</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.



Test Item:	<u>Lock Assembly</u>	Date:	<u>12/16/14</u>
Customer:	<u>Sargent and Greenleaf Inc.</u>	Model/Serial No.:	<u>Model No. 6126, Serial No. N/A</u>
Test Mode:	<u>Operational</u>	Job No.:	<u>414305-00-000</u>
Specification:	<u>MIL-STD-461F</u>	Amplitude:	<u>50 kV/m</u>
Procedure:	<u>MIL-STD-461F</u>	Technician:	<u>P. Kelly</u>

Radiated Susceptibility, Method RS105, Transient Electromagnetic Field **Met Requirement** Yes No

Applied Level (V/m)	Number of Pulses	Pulse Rate	Susceptibility Threshold Level (V/m)	Observation
50kV	10	1 Pulse per Minute X-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Y-Axis	N/A	Test Item functioned properly after application of the pulses.
50kV	10	1 Pulse per Minute Z-Axis	N/A	Test Item functioned properly after application of the pulses.

9.1.8 RS105, Test Setup Diagrams

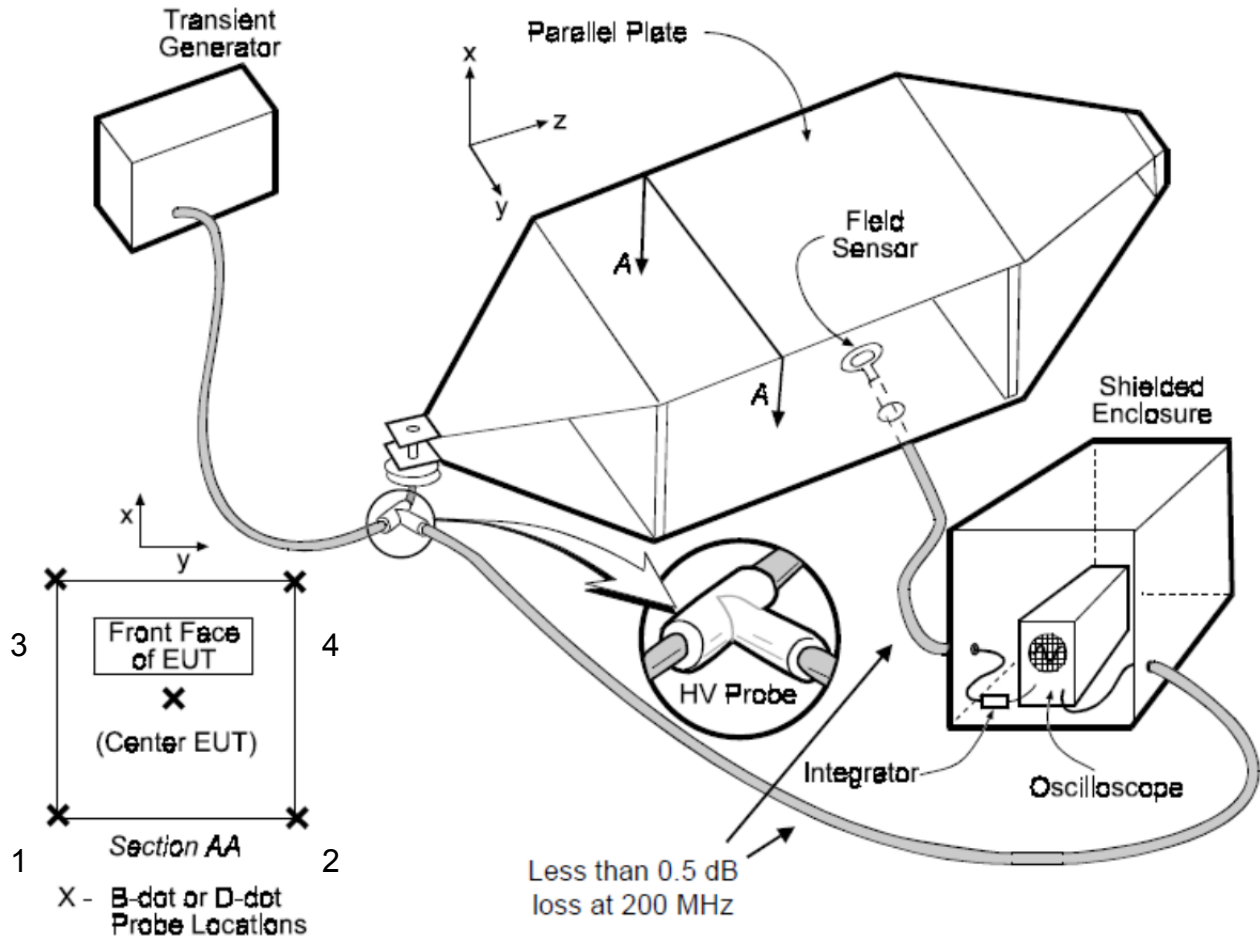


Figure 2 - RS105, Calibration Verification Setup

TOP VIEW

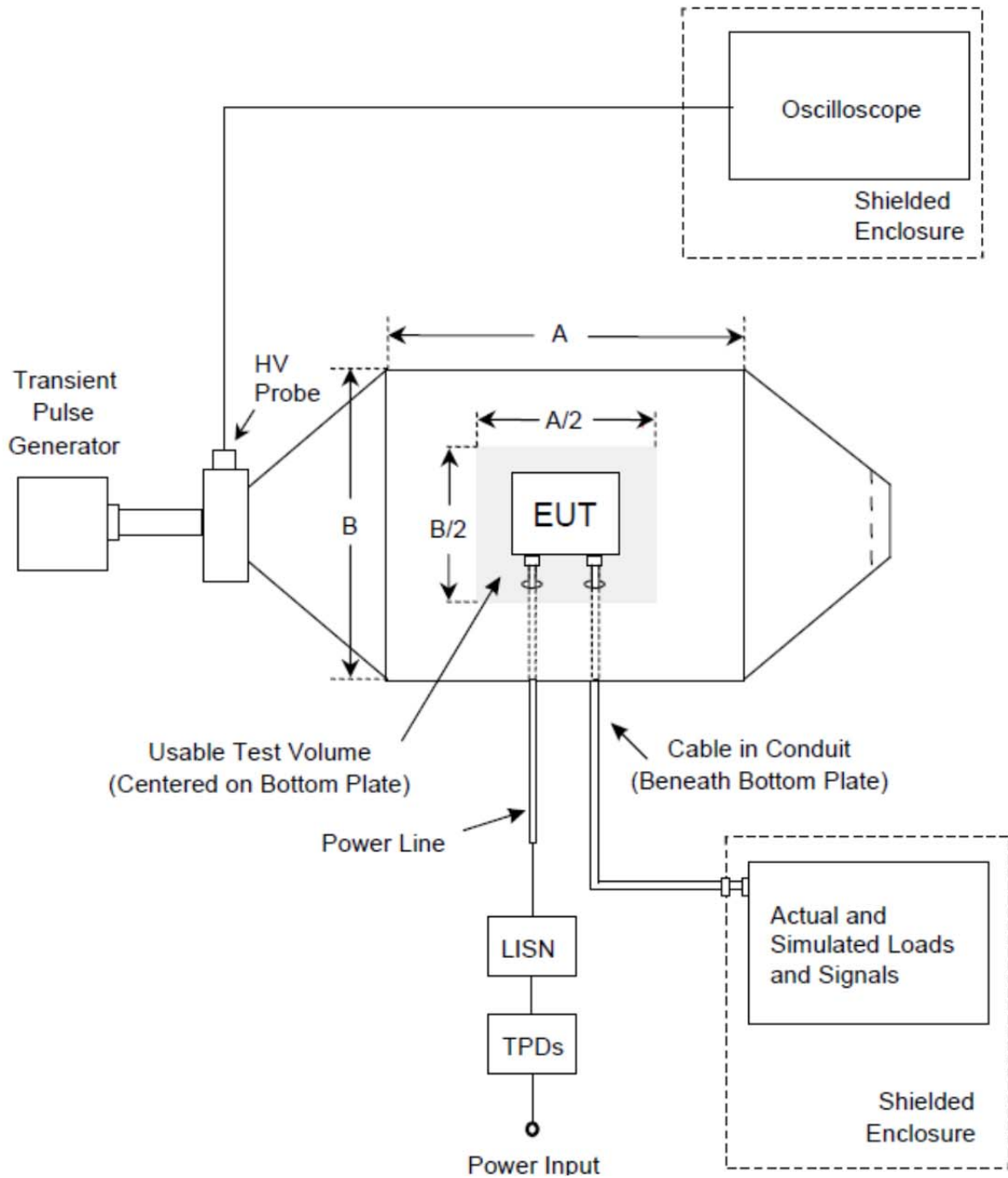


Figure 3 - RS105, Typical Test Setup

9.1.9 RS105, Test Setup Photograph(s)



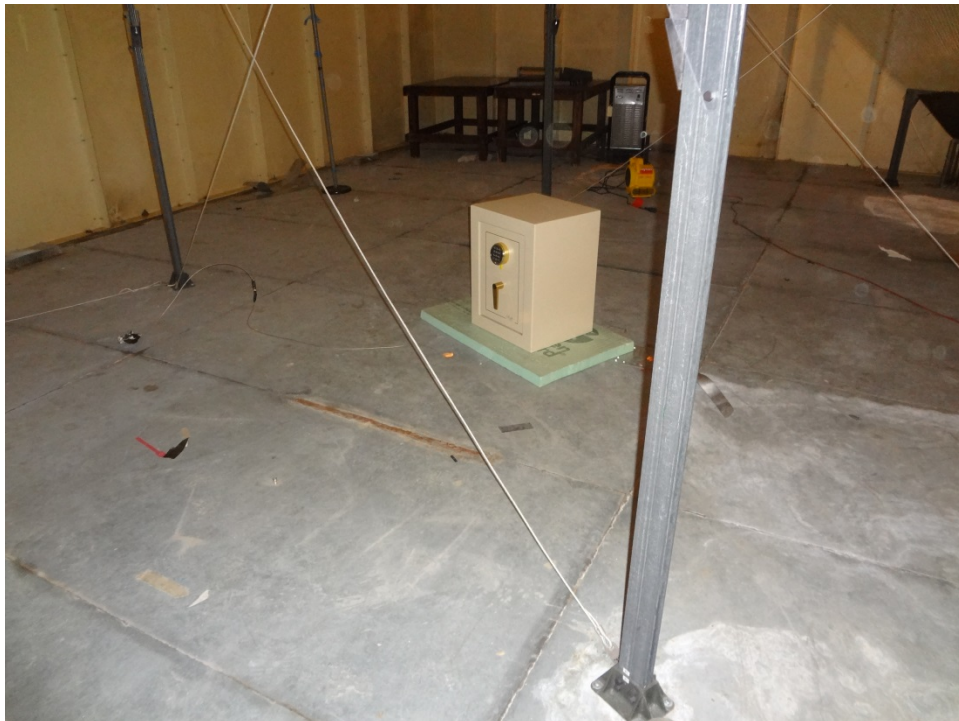
X-Axis



X-Axis



Y-Axis



Y-Axis



Z-Axis