



1150 W. Euclid Avenue ~ Palatine, IL 60067-7368

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RANDOM VIBRATION TEST REPORT

PREPARED FOR:

Mr. Jim Blair
Saint Technologies, Inc.
10 North Locust
Shannon, IL 61078

PREPARED BY:

Trace Laboratories-Central
1150 West Euclid Avenue
Palatine, IL 60067-7368

FILE # 01-16335

S.O. # 19070-01

Saint Technologies, Inc. P.O. # 000063-00

DATE IN: September 25, 2001

DATE OUT: September 28, 2001

REPORT DATE: October 23, 2001

SAMPLE

SUBMISSION: Two (2) Reallock Switch Samples, P/N CRL-1000-18 and SRL-1000-250, mounted In fixtures supplied by customer.

Samples were visually inspected prior to testing and were deemed acceptable for testing.

SAMPLE

DISPOSITION Returned to Customer via UPS Ground on September 28, 2001.

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TEST DATE: September 27, 2001
TYPE OF TEST: Random Vibration
CUSTOMER: Saint Technologies, Inc.
DESCRIPTION: Reallock Switches
P/N: CRL-1000-18 and SRL-1000-250
S/N: Not Provided
QTY: Two (2)
SPECIFICATION: Per Saint Technologies Test Plan TP-100
REQUIREMENTS: Nuts do not move due to vibration.

RANDOM VIBRATION TEST

REQUIREMENTS:

Two (2) Reallock switch samples shall be subjected to random vibration testing in accordance with the requirements set forth in Saint Technologies Test Plan TP-1000. The customer shall supply samples mounted to a suitable aluminum holding fixture. The holding fixture shall be capable of transmitting the required input vibration to the specimens and shall minimize the effects of unbalanced loads. The holding fixture shall be securely mounted to the shaker table, and test set-up photographs shall be taken to depict axis orientation. A control/measurement accelerometer shall be placed near the point of specimen attachment.

Random vibration shall be applied with a frequency ranging from 15 Hz to 2000 Hz, with an overall level of 36 g's rms. Testing shall be applied for two (2) hours per axis in each of three (3) mutually-perpendicular axes. Random vibration testing shall be conducted for a total test duration of six (6) hours. All test data shall be recorded. Upon completion of random vibration testing, the samples shall be visually inspected for any evidence of physical damage, and any observations shall be recorded. The test samples shall be returned to Customer for any further post-test evaluation, for which Saint Technologies, Inc. personnel shall be responsible



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PROCEDURE:

The test samples were attached to an aluminum plate, which was in turn mounted to a fixture. The holding fixture was securely attached to the vibration shaker table. Photographs of the test set-up were taken to depict axis orientation. A control/measurement accelerometer was placed near the point of specimen attachment.

The required random vibration was applied for two (2) hours per axis, in each of three mutually perpendicular axes, for a total test time of six (6) hours. Upon completion of random vibration testing, a visual inspection was performed, and all observations were recorded. Saint Technologies, Inc. personnel shall be responsible for any further post-test evaluation, including all performance checks.

INSTRUMENTATION OR EQUIVALENT:

<u>EQUIPMENT</u>	<u>MANUFACTURER</u>	<u>MODEL #</u>	<u>LAB #</u>	<u>LAST CAL.</u>	<u>NEXT CAL.</u>
Shaker Table	Unholtz Dickie	T-1000-IAR	TL458	N/A	N/A
Vibration Controller	GenRad	2552	TL451	04/02/01	10/02/01
Accelerometer	PCB	353B17	TL887	12/21/00	12/21/01
Fixture Plate	Saint Technologies	N/A	N/A	N/A	N/A



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RESULTS:

Two (2) Reallock switch samples, underwent and successfully completed random vibration testing in accordance with the requirements given by Saint Technologies Test Plan TP-100. Upon completion of vibration testing, the test samples did not display any evidence of having incurred damage as a result of having been subjected to the random vibration testing. The nuts did not move before, during, or after the vibration testing. Test set-up photographs are contained in the data section of this report along with typical random vibration test spectra. Any further post-test evaluation, including all performance checks, are the responsibility of Saint Technologies, Inc. personnel.



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TESTED

BY: _____ DATED: _____

Ron Pienkowski
Test Technician

REVIEWED

BY: _____ DATED: _____

John A. Lindberg
Manager, Vibration & Environmental Testing Services

APPROVED

BY: _____ DATED: _____

Jeffrey A. Schutt
General Manager

Unless otherwise stated herein, all equipment used to generate the test results contained herein meets the requirements of ANSI/NCSL Z540-1 and is in calibration and traceable to NIST. As a mutual protection to clients, the public and Trace Laboratories, this report is submitted for the exclusive use of the client to whom it is addressed. This report applies only to the sample(s) tested and is not necessarily indicative of the qualities of apparently similar or identical products. Use of this report, whether in whole or in part, or anything else connected therewith, in any advertising or publicity matter, without prior written authorization from Trace Laboratories is prohibited.



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TEST DATA



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VIBRATION TEST DATA, INCLUDING...

- Test Set-up Photographs
- Typical Vibration Test Spectra



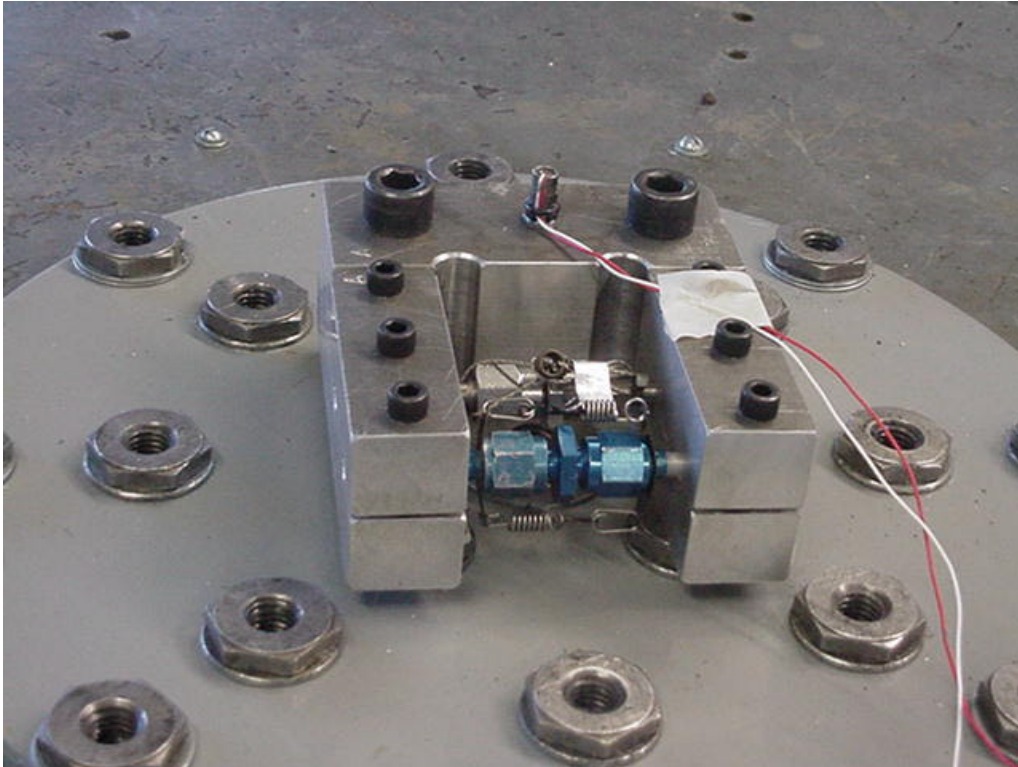
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Axis One





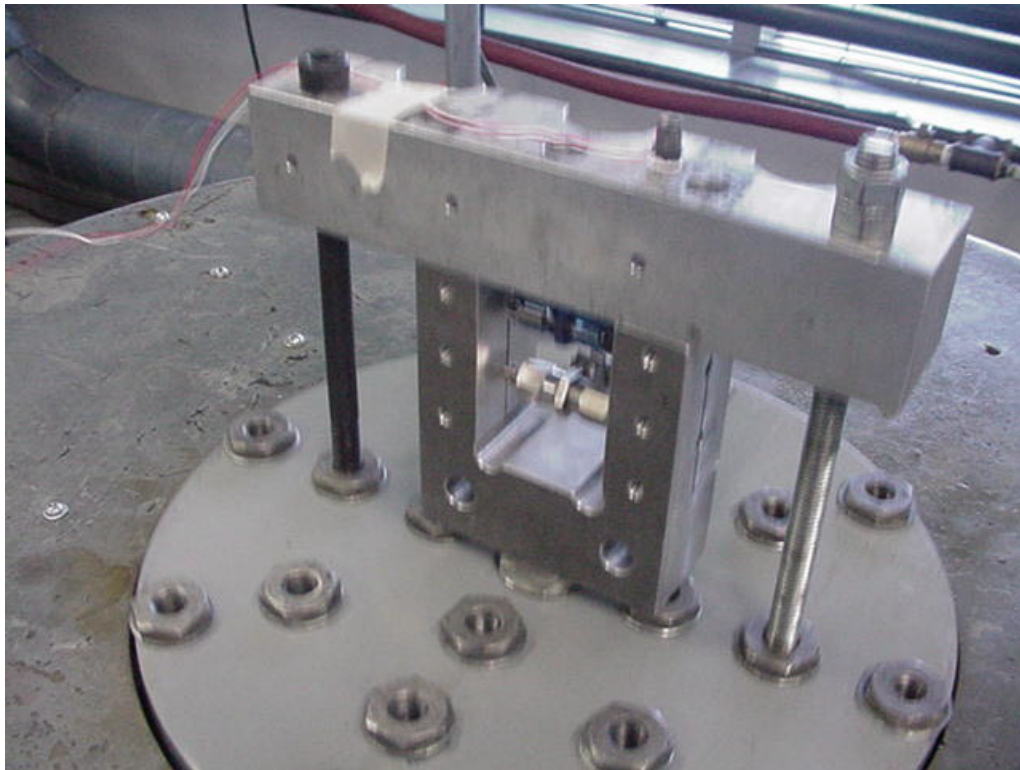
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Axis Two





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Axis Three



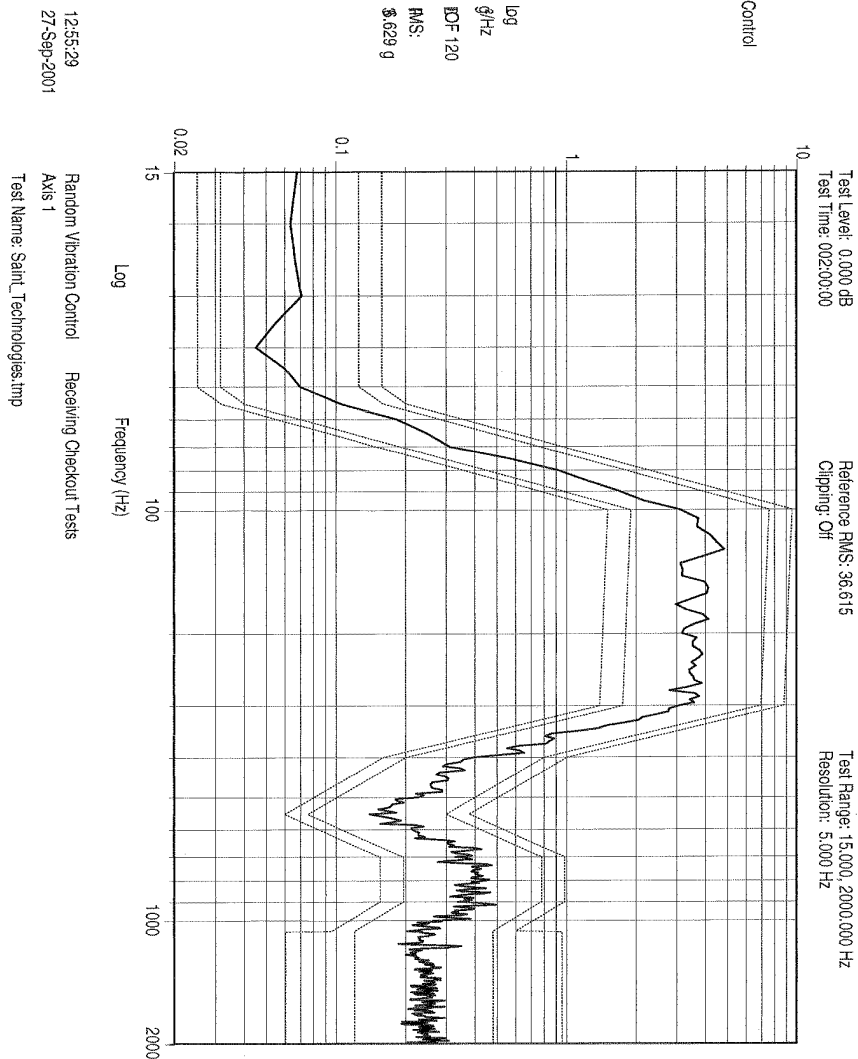


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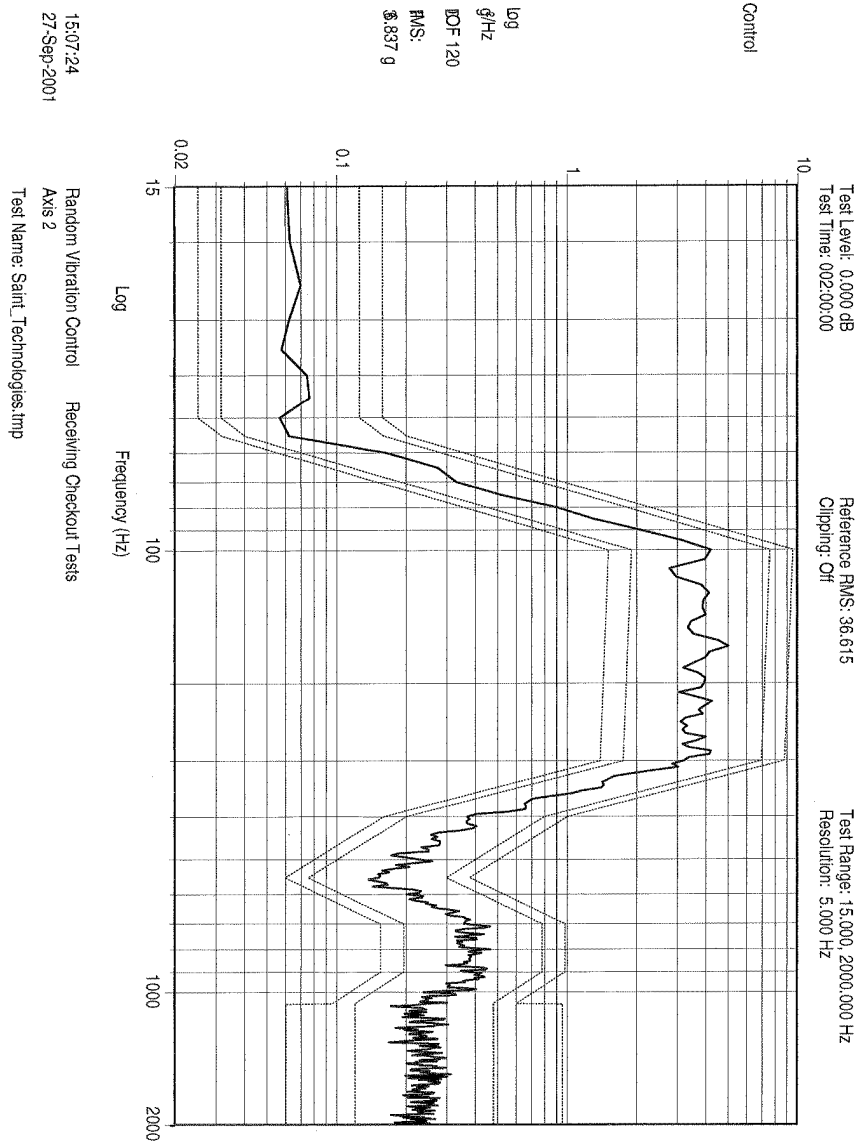


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17:17:36
27-Sep-2001

Log
g/Hz
QF 120
RMS:
\$.407 g

Control

Saint Technologies, 01-16335
Axis 3, Feedback Mechanism, Saint Switch Spec, SP-1090
Test Name: Saint_Technologies.imp

