



ENGINEERING AND TEST DIVISION
CHURCH STREET, BOHEMIA, LONG ISLAND, NEW YORK 11716 (631) 589-6300

TEST REPORT NO.: DTB04R08-0445
DAYTON T. BROWN, INC. JOB NO.: 410215-00-000

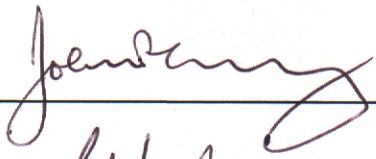
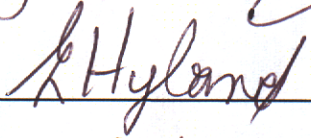
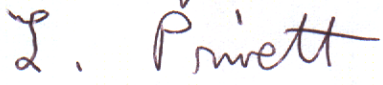
CUSTOMER: IMS ENGINEERED PRODUCTS, LLC
1 INNOVATION DRIVE
DES PLAINES, IL 60016

SUBJECT: TRANSPORTATION VIBRATION AND MEDIUM WEIGHT
HAMMER SHOCK TESTS CONDUCTED ON TWO ENCLOSURES,
SERIAL NOS. DTB-1 AND DTB-2

PURCHASE ORDER NO.: 4427

ATTENTION: MR. JIM WALENDA

THIS REPORT CONTAINS: THREE PAGES AND TWO ENCLOSURES

TEST ENGINEER	 J. LONG
DEPARTMENT SUPERVISOR	 G. HYLAND
QUALITY DEPARTMENT	 L. PRIETT
DATE	5 MAY 2008

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

TABLE OF CONTENTS

<u>Subject</u>	<u>Paragraph</u>	<u>Page No.</u>
Abstract	1.0	2
References	2.0	2
Administrative Information	3.0	3
Test Program Outline	4.0	3

<u>Enclosures</u>	<u>Number of Pages</u>	<u>Number of Photos</u>
(1) Transportation Vibration Test and Results	9	3
(2) Medium Weight Hammer Shock Test and Results	2	6



1.0 ABSTRACT

This test report details the results of the transportation vibration and medium weight hammer shock tests conducted on two Enclosures, Serial Nos. DTB-1 and DTB-2, under reference (a) to the requirements of references (c), (d), and (e).

Results of the tests are detailed in the following text.

Test data pertinent to this program will remain on file at Dayton T. Brown, Inc. for 90 days.

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

This test report shall not be reproduced, except in full, without the written approval of Dayton T. Brown, Inc.

2.0 REFERENCES

- | | | |
|-----|----------------------------------|---|
| (a) | Customer Purchase Order No.: | 4427 |
| (b) | Dayton T. Brown, Inc. Job No.: | 410215-00-000 |
| (c) | Test Specification: | MIL-STD-810 F |
| (d) | Test Specification: | MIL-S-901D |
| (e) | Dayton T. Brown, Inc. Quotation: | Dayton T. Brown, Inc. Quotation No. ISL-08-0800A, dated 7 April 2008. |



4.0 ADMINISTRATIVE INFORMATION

<u>Customer</u>	IMS Engineered Products, LLC 1 Innovation Drive Des Plaines, IL 60016
Test Item Description	Enclosure
Quantity Received	Two
Serial No.	DTB-1 and DTB-2 (These serial numbers were assigned to the test items by Dayton T. Brown, Inc.)
Date Received	18 April 2008
Dates Tested	18 through 21 April 2008
Date Shipped	24 April 2008
Customer Representative Present During Portions of Testing	
Name	Affiliation
Vito Pesce	IMS Engineered Products, LLC

4.0 TEST PROGRAM OUTLINE

Test	Test Item Description	Results
Transportation Vibration	Enclosure, Serial No. DTB-1	No anomalies.
Medium Weight Hammer Shock	Enclosure, Serial No. DTB-2	See Enclosure 2.



Enclosure 1

Transportation Vibration Test and Results

TEST REQUIREMENT

The transportation vibration test shall be conducted in accordance with references (c) and (e) with the exception detailed on the Authorization for Specification Deviation/Clarification Form included on page 2 of this enclosure.

TEST RESULTS

A pretest visual inspection of the test item revealed no anomalies.

The test item was tested in accordance with the above referenced specifications with the exception detailed on the Authorization for Specification Deviation/Clarification Form included on page 2 on this enclosure.

A sketch showing the vibration axes is included on page 3 of this enclosure.

Refer to the Vibration Test Summary for tabulated results.

VIBRATION TEST SUMMARY

Sequence	Axis	Condition	Duration (min)	Page No. (Enc 1)
1	Longitudinal	Transportation Random Vibration, 10 – 500 Hz, 0.7442 grms	60	4, 5
2	Transverse	Transportation Random Vibration, 10 – 500 Hz, 0.7442 grms	60	6, 7
3	Vertical	Transportation Random Vibration, 10 – 500 Hz, 1.051 grms	60	8

The test item completed all phases of testing.

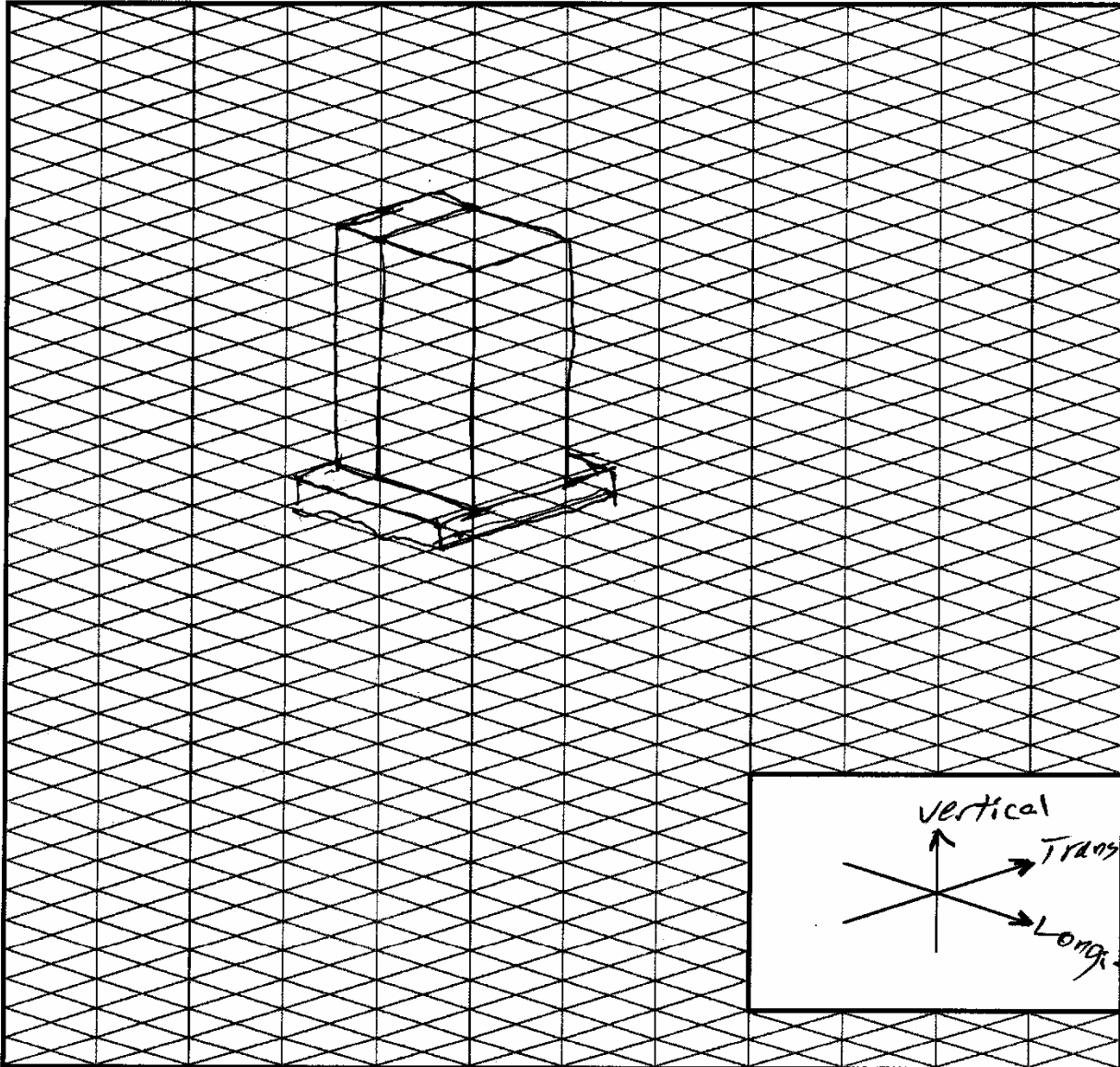
A post-test visual inspection of the test item revealed that there were no anomalies due to testing.

SKETCH OF TEST ITEM AXES



JOB NUMBER 410215-00-000

DATE 18 Apr 08



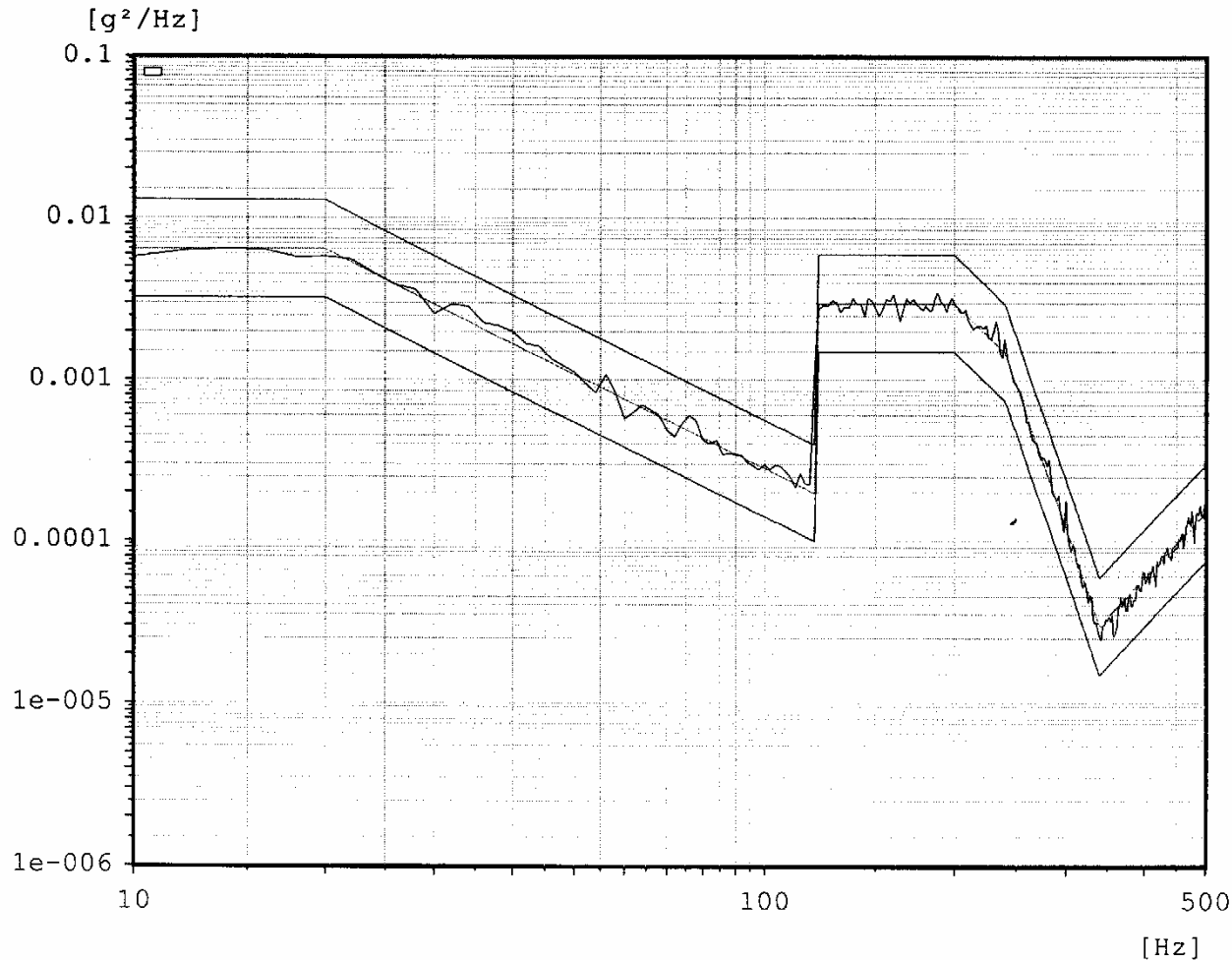
TECHNICIAN

ENGINEER

FILE:410215, SHEET: DATA, AXIS SKETCH

Random
U.S. Highway Truck Vibration
Axis: Long

Control channel



Chan.type: X
DOF: 528
Level: 0.0 dB
Resolution: 2 Hz
Contr.strat.: Average
Unit: g²/Hz
RMS (act.): 0.7457 g
RMS (req.): 0.7442 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:59:00

-- Time total --
elapsed: 000:02:45
remaining: 000:59:00

Date: 04-18-08
Time: 19:23:55

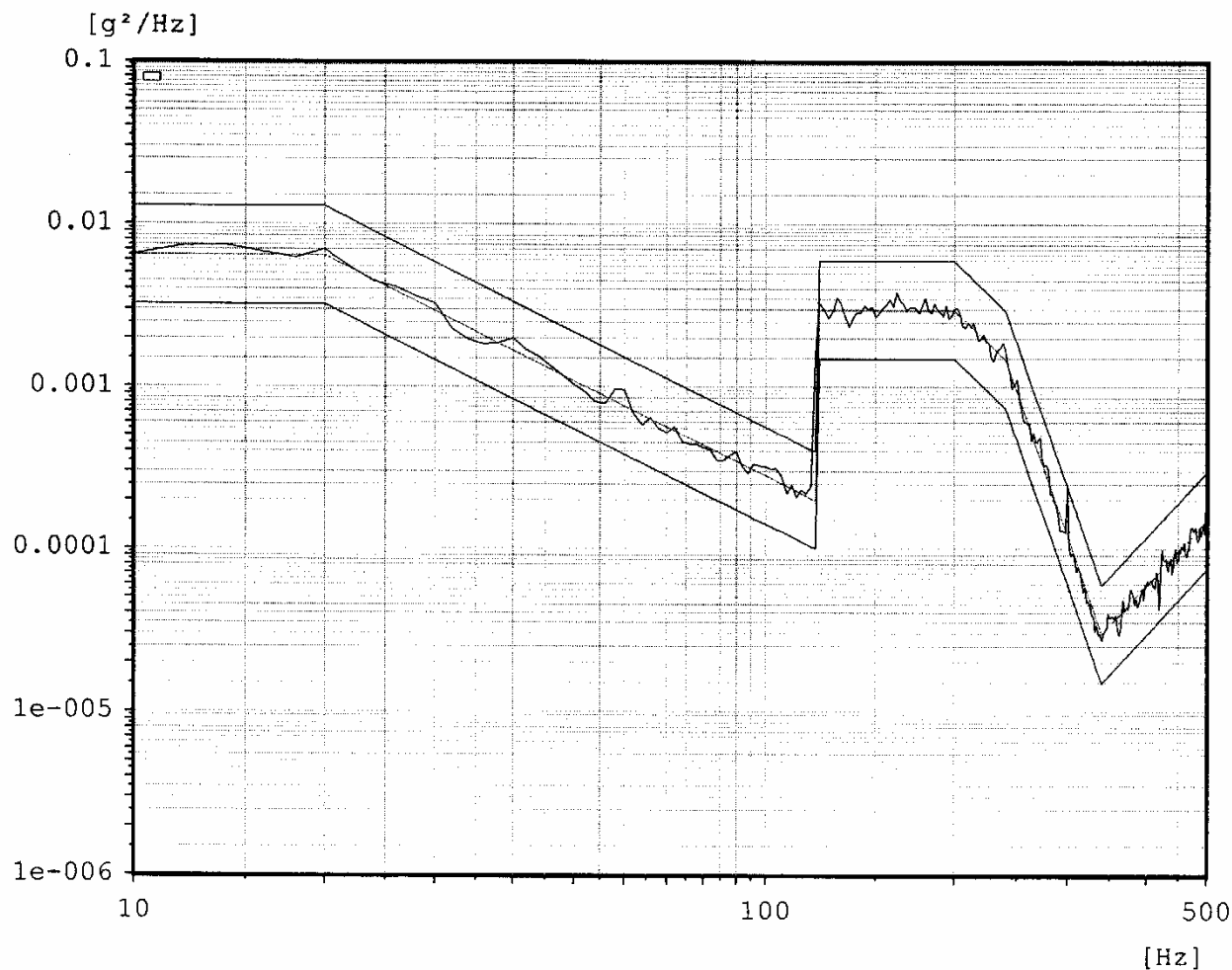
IMS Engineered Products, LLC
Test Item: Enclosure
J/N: 410215-00-000
S/N: DTB #1
Eng.: J. Long

Tech: F. Baumbach

Plot: 1A1

Random
U.S. Highway Truck Vibration
Axis: Long

Control channel



Chan.type: X
DOF: 528
Level: 0.0 dB
Resolution: 2 Hz
Contr.strat.: Average
Unit: g²/Hz
RMS (act.): 0.7543 g
RMS (req.): 0.7442 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 001:00:01
remaining: 000:00:-1

-- Time total --
elapsed: 001:01:46
remaining: 000:00:-1

Date: 04-18-08
Time: 20:22:51

IMS Engineered Products, LLC
Test Item: Enclosure
J/N: 410215-00-000
S/N: DTB #1
Eng.: J. Long

Tech: F. Baumbach

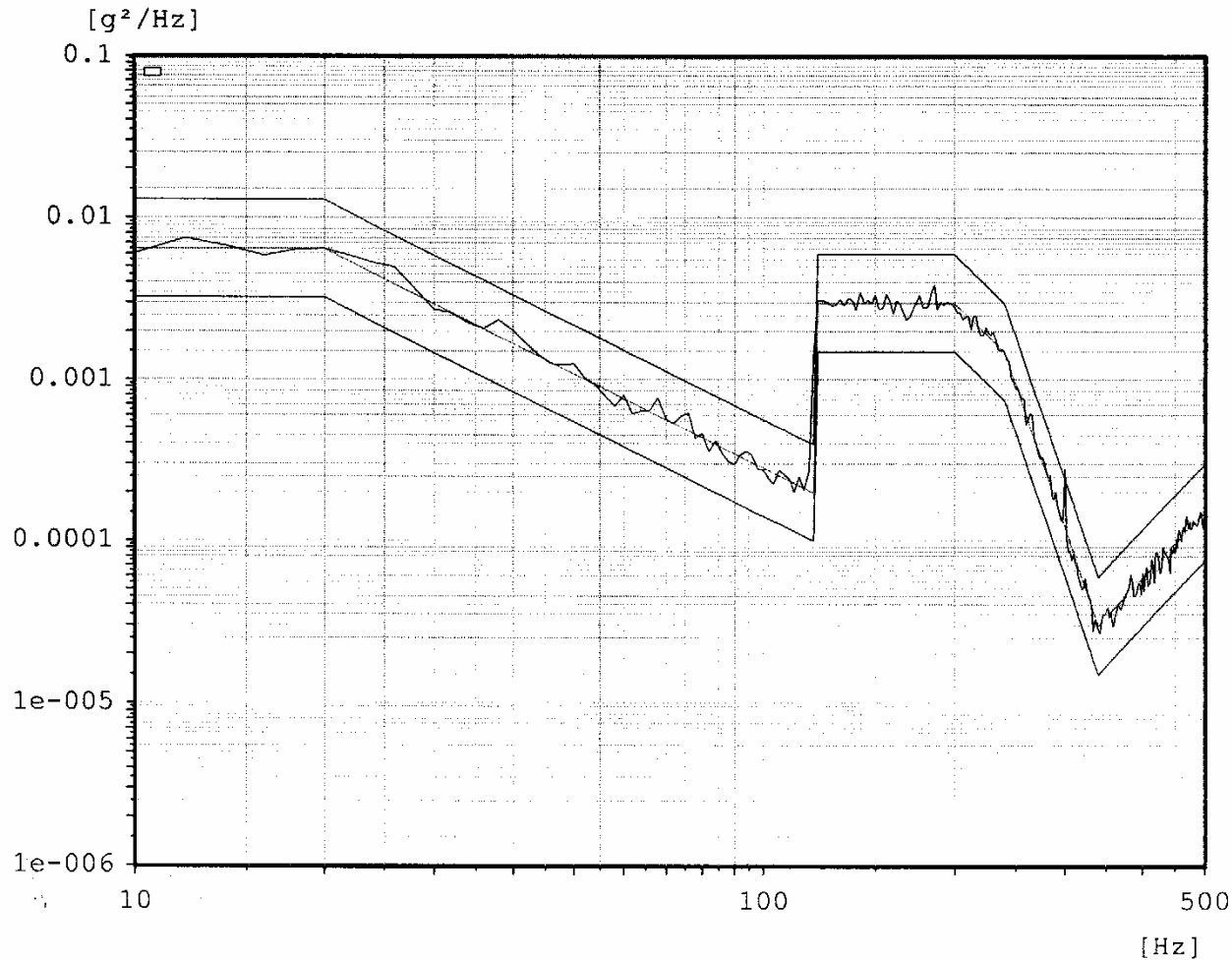
Plot: 131

Random

U.S. Highway Truck Vibration

Axis: Trans

Control channel



Chan.type: X
DOF: 528
Level: 0.0 dB
Resolution: 2 Hz
Contr.strat.: Average
Unit: g²/Hz
RMS (act.): 0.7512 g
RMS (req.): 0.7442 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:59:00

-- Time total --
elapsed: 000:02:45
remaining: 000:59:00

Date: 04-18-08
Time: 21:29:17

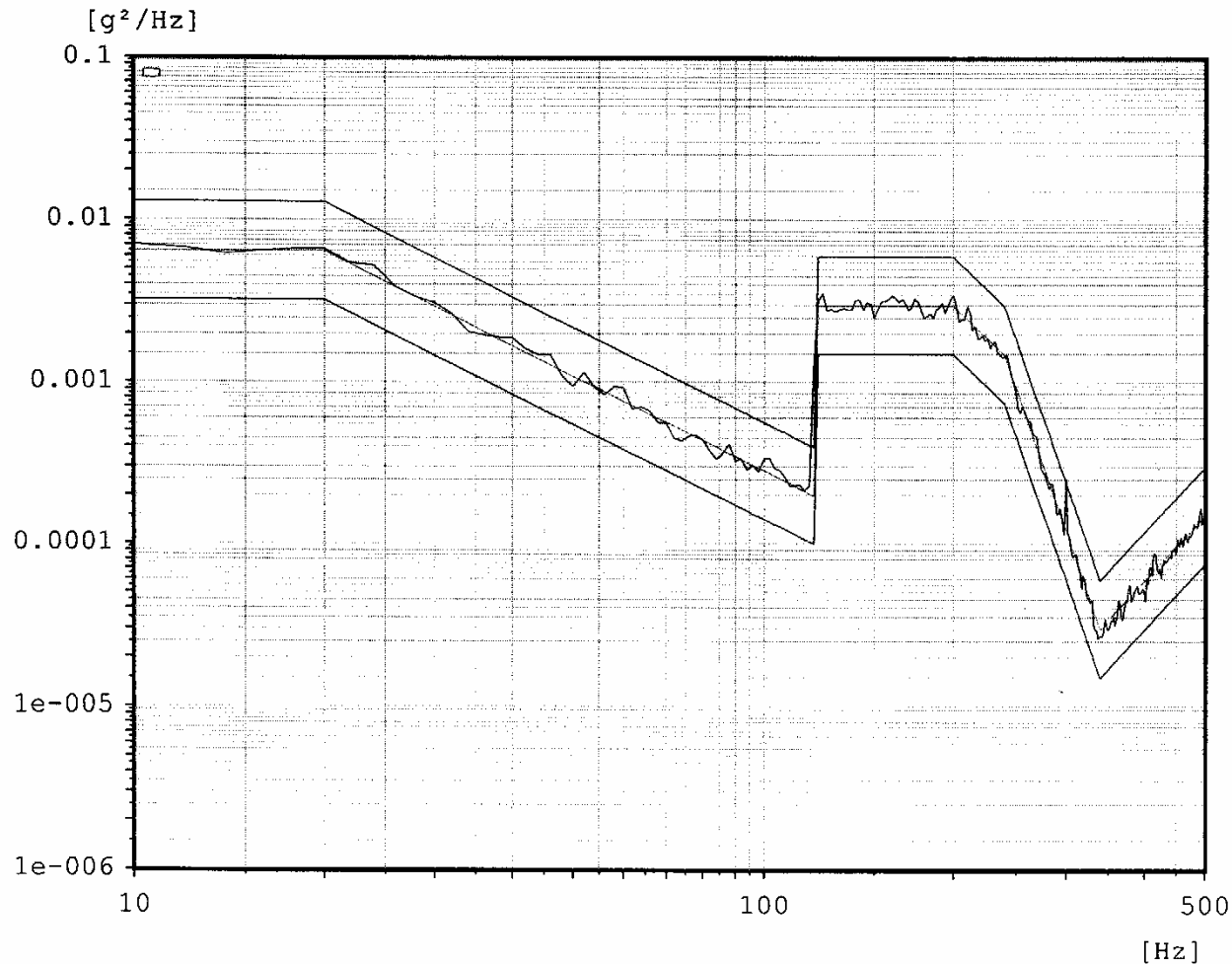
IMS Engineered Products, LLC
Test Item: Enclosure
J/N: 410215-00-000
S/N: DTB #1
Eng.: J. Long

Tech: F. Baumbach

Plot: 2 A1

Random
U.S. Highway Truck Vibration
Axis: Trans

Control channel



Chan.type: X
DOF: 528
Level: 0.0 dB
Resolution: 2 Hz
Contr.strat.: Average
Unit: g²/Hz
RMS (act.): 0.7483 g
RMS (req.): 0.7442 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 001:00:01
remaining: 000:00:-1

-- Time total --
elapsed: 001:01:46
remaining: 000:00:-1

Date: 04-18-08
Time: 22:28:12

IMS Engineered Products, LLC
Test Item: Enclosure
J/N: 410215-00-000
S/N: DTB #1
Eng.: J. Long

Tech: F. Baumbach

Plot: 2B1



Customer: Ims Engineered Products, LLC J/N: 410215-00-000

Axis: Vertical Eng: John Long Tech: W. Braska

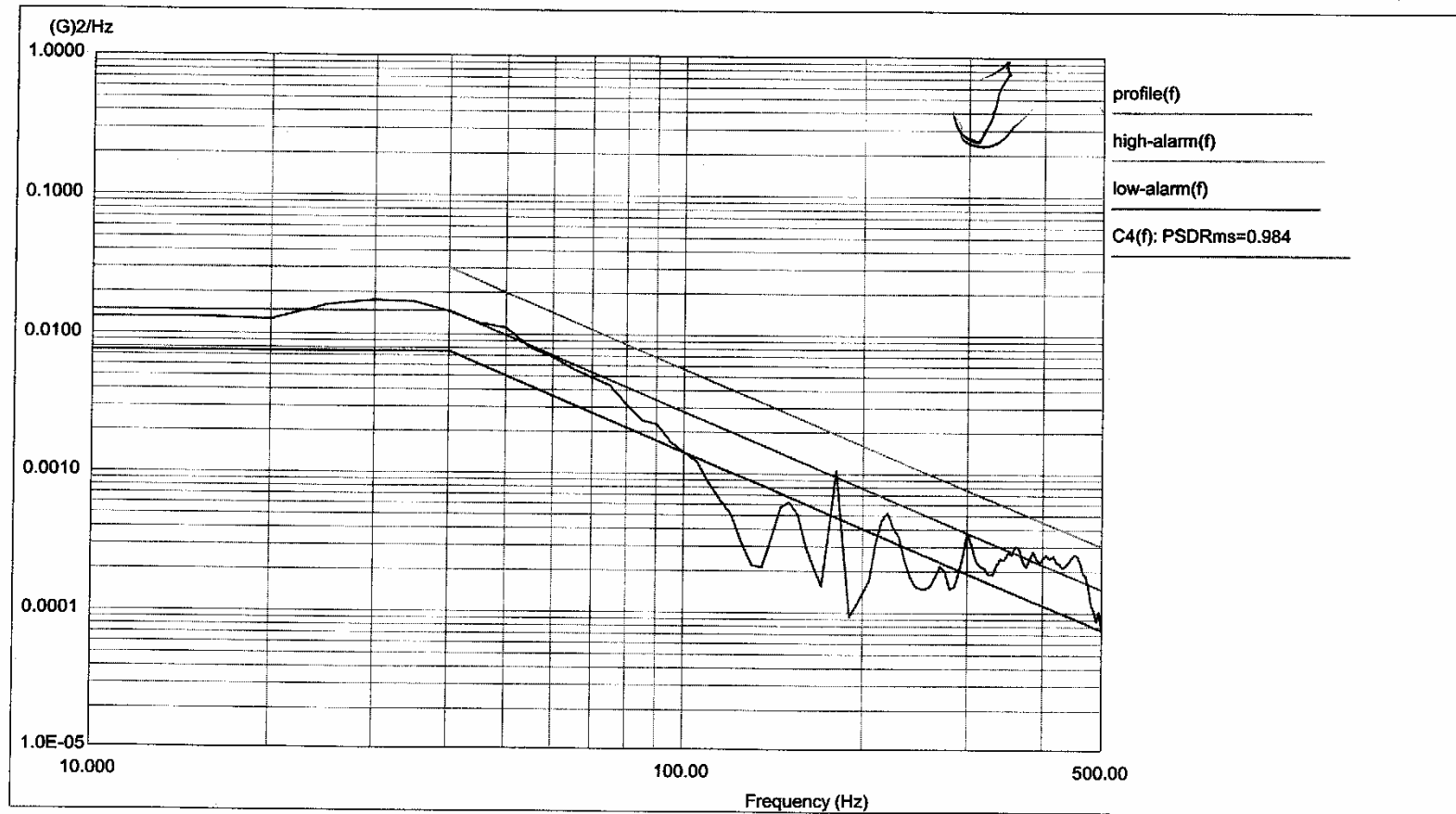
Project File Name: Vertical.prj

Profile Name: Transport Vert

Test Type: Random

Run Folder:

.Run Apr 21, 2008 10-26-19



Level: 0 dB

Control RMS: 1.169192 G

Full Level Elapsed Time: 01:00:00

Lines: 450

Frame Time: 0.200000 Seconds

Demand RMS: 1.051844 G

Remaining Time: 00:00:00

DOF: 120

dF: 5.000000 Hz

Data saved at 11:30:31 AM, Monday, April 21, 2008

Report created at 11:30:36 AM, Monday, April 21, 2008

3A1

Test equipment utilized for the program reported herein was within its assigned interval of calibration.
Details are on file at Dayton T. Brown, Inc. and will be made available upon request.



Job Sub: 410215-00 **TEST:** TRANSPORTATION VIBRATION

<u>ITEM</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>DTB NO.</u>	<u>ACCURACY</u>	<u>CAL DUE DATE</u>
VIBRATION EXCITER	MB ELECTRONICS	C-210-1	04V-001	N/A	N.C.R.
AMPLIFIER, POWER	LING	DMA48-30	04V-003	N/A	N.C.R.
MAINFRAME, VXI C-SIZE 6 SLOT	AGILENT TECHNOLOGIES	E1421B	10-195	MAINTENANCE ONLY	01/11/2009
INPUT MODULE, 16 CHANNEL	VXI TECHNOLOGY	VT1432A	10-196	MFR	01/11/2009
INPUT MODULE, 16 CHANNEL	VXI TECHNOLOGY	VT1432A	10-197	MFR	01/11/2009
ARBITRARY SOURCE, 2 CHANNEL	VXI TECHNOLOGY	VT1434A	10-198	MFR	01/11/2009
ACCELEROMETER	ENDEVCO	2224C	32-191	±5% (20 - 1000HZ) ±10% (5 - 20, 1000 - 3000HZ)	05/04/2008
ACCELEROMETER	ENDEVCO	2224C	32-192	±5% (20 - 1000HZ) ±10% (5 - 20, 1000 - 3000HZ)	05/04/2008
ACCELEROMETER, PIEZOELECTRIC	ENDEVCO	2224C	32-339	±5% 10HZ - 2KHZ; 10% 5HZ - 10HZ, 2KHZ - 3KHZ	10/12/2008
ACCELEROMETER	ENDEVCO	2224C	32-84	±5% (20 - 1000HZ) ±10% (5 - 20, 1000 - 3000HZ)	05/04/2008
AMPLIFIER, CHARGE	TRIG-TEK	203M	50-194	MFR	01/18/2009
AMPLIFIER, CHARGE	TRIG-TEK	203M	50-20	MFR	11/30/2008
AMPLIFIER, CHARGE	TRIG-TEK	203M	50-34	MFR	02/08/2009
AMPLIFIER, CHARGE	TRIG-TEK	203M	50-63	MFR	11/30/2008



08-10780

TESTED FOR IMS ENGINEERED PRODUCTS, LLC
ITEM: ENCLOSURE
TYPICAL VIEW OF THE TEST ITEM SETUP IN THE LONGITUDINAL AXIS FOR THE
TRANSPORTATION VIBRATION TEST
JOB NO. 410215-00-000
DTB04R08-0445
FILE NO. 08-10780
ENCLOSURE 1
S/N DTB-1
18 APRIL 2008
PHOTO 1





08-10781

TESTED FOR IMS ENGINEERED PRODUCTS, LLC
ITEM: ENCLOSURE

S/N DTB-1

TYPICAL VIEW OF THE TEST ITEM SETUP IN THE TRANSVERSE AXIS FOR THE
TRANSPORTATION VIBRATION TEST

JOB NO. 410215-00-000
DTB04R08-0445

FILE NO. 08-10781
ENCLOSURE 1

18 APRIL 2008
PHOTO 2





08-10782

TESTED FOR IMS ENGINEERED PRODUCTS, LLC
ITEM: ENCLOSURE

S/N DTB-1

TYPICAL VIEW OF THE TEST ITEM SETUP IN THE VERTICAL AXIS FOR THE
TRANSPORTATION VIBRATION TEST

JOB NO. 410215-00-000
DTB04R08-0445

FILE NO. 08-10782
ENCLOSURE 1

18 APRIL 2008
PHOTO 3

