DECEMBER 21, 2007

TEST REPORT #207814
REVISION 1.1

MECHANICAL SHOCK/RANDOM VIBRATION
TESTING

PART NUMBERS

ERM8-025-L-D-EM2
ERF8-025-05.0-L-DV

SAMTEC, INC.

APPROVED BY: THOMAS PEEL
PRESIDENT AND
DIRECTOR OF TEST PROGRAM DEVELOPMENT
CONTECH RESEARCH, INC.

ilac-MRA
1478 - 01
ACCREDITED
Test Laboratory
1478 - 02

Contech Research
An Independent Test and Research Laboratory

REVISION HISTORY

DATE	REV. NO.	DESCRIPTION	ENG.
12/21/2007	1.0	Initial Issue	TP
11/29/2010	1.1	Typographical change on page 15, Power Spectral Density changed from $0.01g^2/Hz$ to $0.04\ g^2/Hz$.	DA

CERTIFICATION

This is to certify that the evaluation described herein was designed and executed by personnel of Contech Research, Inc. It was performed with the concurrence of Samtec, Inc. of New Albany, IN who was the test sponsor.

All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1 and ANSI/NCSL Z540-1 and MIL-STD-45662 as applicable.

All data, raw and summarized, analysis and conclusions presented herein are the property of the test sponsor. No copy of this report, except in full, shall be forwarded to any agency, customer, etc., without the written approval of the test sponsor and Contech Research.

APPROVED BY: THOMAS PEEL
PRESIDENT AND
DIRECTOR OF TEST PROGRAM DEVELOPMENT
CONTECH RESEARCH, INC.

TP:cf

SCOPE

To perform mechanical shock and random vibration testing on the ERM8/ERF8 connectors as manufactured and submitted by the test sponsor Samtec, Inc.

APPLICABLE DOCUMENTS

1. Unless otherwise specified, the following documents of issue in effect at the time of testing performed form a part of this report to the extent as specified herein. The requirements of sub-tier specifications and/or standards apply only when specifically referenced in this report.

2. Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1. The following test samples were submitted by the test sponsor, Samtec, Inc., for the evaluation to be performed by Contech Research, Inc.

   Part Numbers

   a) ERM8-025-L-D-EM2
   b) ERF8-025-050-L-DV

2. Test samples were supplied assembled with stabilizing mediums and terminated to test boards by the test sponsor.

3. Test boards for mounting test samples were supplied by the test sponsor.

4. The test samples for vibration and shock were prepared by terminating all positions in series for monitoring contact interruptions during vibration and/or shock.

5. The test samples were tested in their ‘as received’ condition.

TEST SELECTION

See Test Plan Flow Diagram, Figure #2, for test sequences used.

SAMPLE CODING

1. All samples were coded. Mated test samples remained with each other throughout the test group/sequences for which they were designated. Coding was performed in a manner which remained legible for the test duration.

2. The test samples were coded in the following manner:

   Sample ID# D-A-1, D-A-2

FIGURE #1

TEST PLAN FLOW DIAGRAM

SAMPLE PREPARATION

|

MECHANICAL SHOCK

|

RANDOM VIBRATION

DATA SUMMARY

TEST	REQUIREMENT	RESULTS
SEQUENCE A		
MECHANICAL SHOCK	NO DAMAGE	PASSED
	1.0 MICROSECOND	PASSED
RANDOM VIBRATION	NO DAMAGE	PASSED
	1.0 MICROSECOND	PASSED

EQUIPMENT LIST

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
14	6/26/2008	6/26/2007	Accelerometer	PCB Piezotronics	302A	7040	See Cal Cert	12mon
33			Vib. Power Amp	Ling Dynamics	MPA4	149	N/A	N/A
282			Vibration Shaker Table	Ling Dynamics	V-730	163	N/A	N/A
553	1/8/2008	1/8/2007	12 channel Power Unit	PCB Co.	483A	1303	See Cal Cert	12mon
684	7/26/2008	7/26/2007	Accelerometer	PCB. Co.	353B04	47648	See Cal Cert.	12mon
874			Computer	M&P	Vectra	us75203327	N/A	N/A
1166	9/6/2008	9/6/2007	Sine/Rndm Vib Control Digitizer	Hewlett Packard	E1432A	US39342279	See Cal Cert	12mon
1167			Interface	Hewlett Packard	E8491B	US390100753	N/A	N/A
1168			Mainframe	Hewlett Packard	E8408A	US39000357	N/A	N/A
1271			Amplifier	Unholtz Dickie	SA15	3483	See Manual	N/A
1272			Shaker Table	Unholtz Dickie	S202PB	263	N/A	N/A
1366			Main Frame	Aiglent H.P.	8408A		N/A	N/A
1367			Interface	Aiglent H.P.	E8491A		N/A	N/A
1368	2/27/2008	2/27/2007	Sine/Rnd Control digitizer	Aiglent H.P.	E1432A	US35470169	See Manual	12mon
1474			Vib Pwr Amp	tira	A58312	003/06	N/A	N/A

TEST RESULTS

SEQUENCE A

PROJECT NO.: 207814 SPECIFICATION: TC0746--1503

PART NO.: ERM8-025-L-D-EM2 PART DESCRIPTION: Connectors
ERF8-025-05.0-L-D

SAMPLE SIZE: 2 samples TECHNICIAN: SR

START DATE: 12/12/07 COMPLETE DATE: 12/12/07

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 28%

EQUIPMENT ID#: 14, 282, 553, 874, 1366, 1367, 1368, 1474

MECHANICAL SHOCK (SPECIFIED PULSE)

PURPOSE:

To determine the mechanical and electrical integrity of connectors for use with electronic equipment subjected to shocks such as those expected from handling, transportation, etc.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 27, Test Condition C.

2. Test Conditions:

   a) Peak Value : 100 G
   b) Duration : 6 Milliseconds
   c) Wave Form : Sawtooth
   d) Velocity : 12.3 feet Per Second
   e) No. of Shocks : 3 Shocks/Direction, 3 Axis (18 Total)

3. Figure #2 illustrates the test sample fixturing utilized during the test.

4. A stabilizing medium was used such that the mated test samples did not separate during the test.

5. Discontinuity monitoring was performed on preselected positions designated by the test sponsor.

REQUIREMENTS: See next page.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. There shall be no contact interruption greater than 1.0 microsecond.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. There was no contact interruption greater than 1.0 microsecond.

3. The Mechanical Shock characteristics are shown in Figures #3 (Calibration Pulse) and #4 (Test Pulse). Each figure displays the shock pulse contained within the upper and lower limits as defined by the appropriate test specification.

FIGURE #2

Typical Mechanical Shock/Random Vibration
Fixture

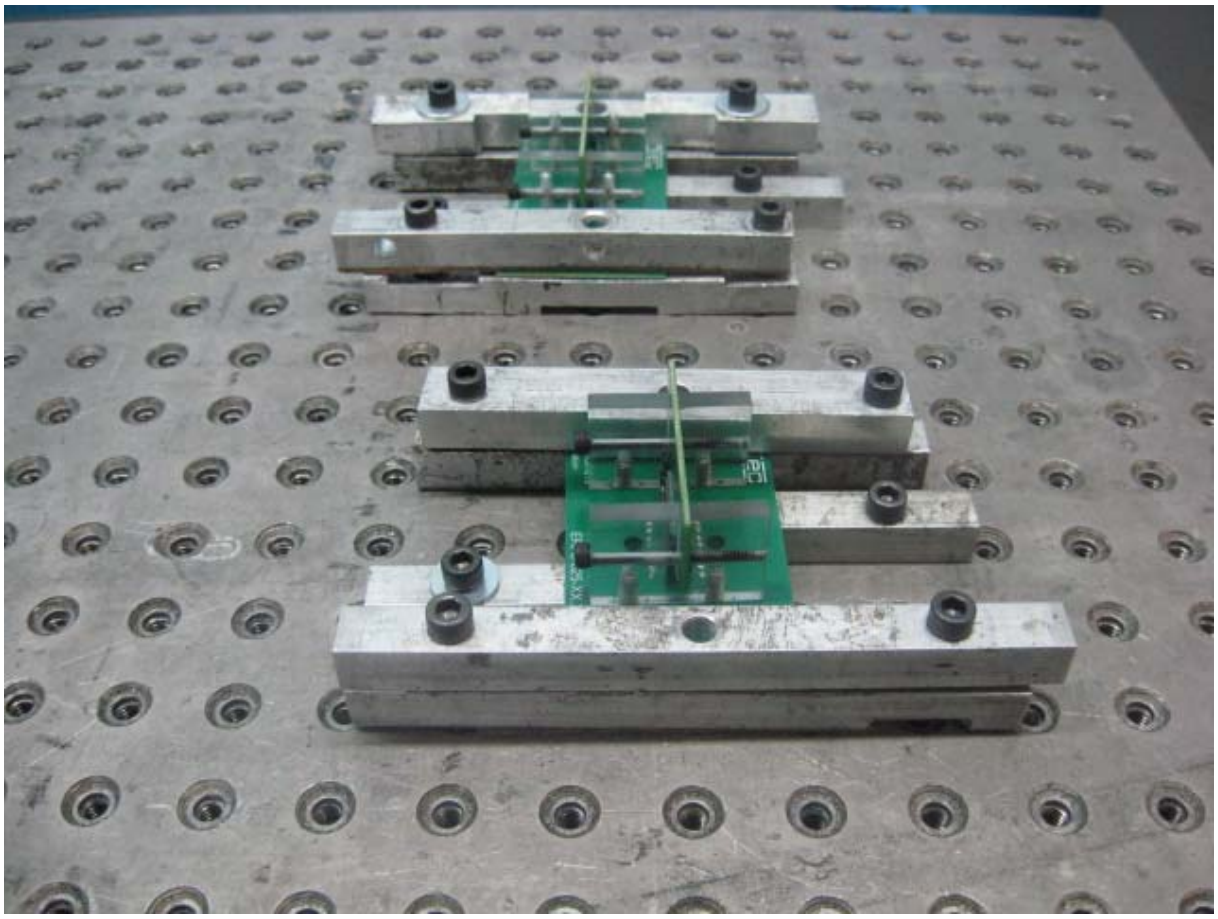
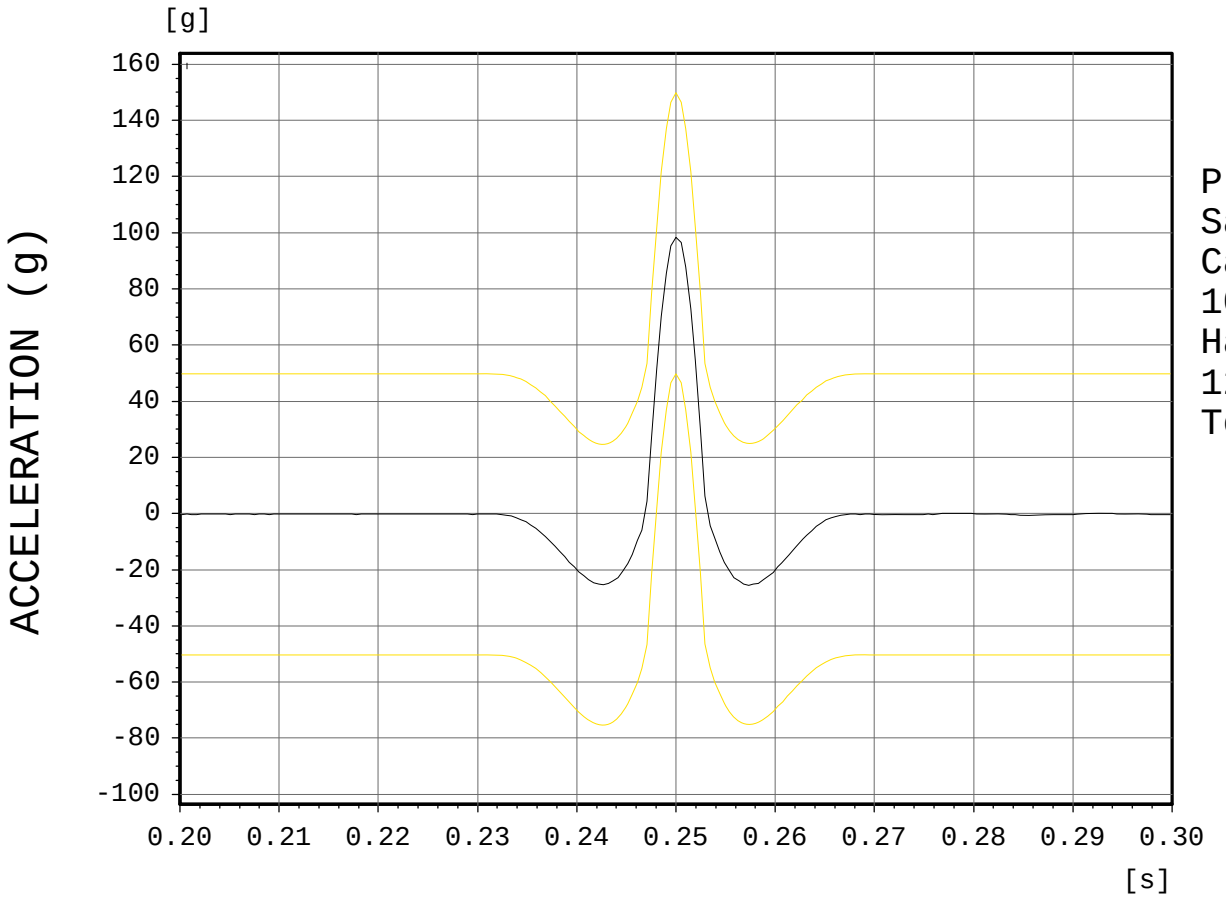


FIGURE #3

Classical Shock

Channel 5



Project-207814
Samtec
Cal Wave 1
100G's 6ms
Halfsine
12-12-07
Tech:S.Rath

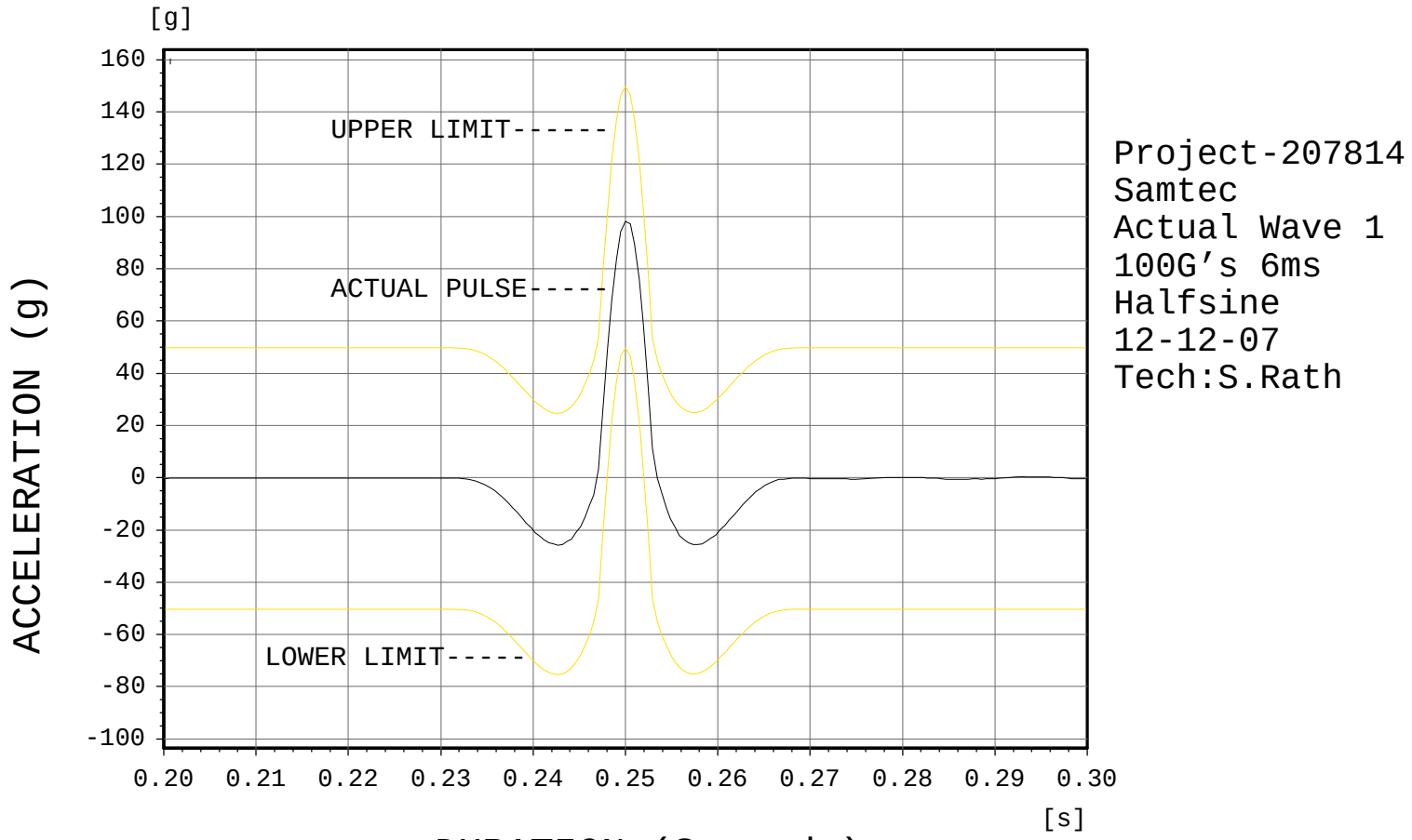
ilac-MRA A2LA ACCREDITED Test Laboratory 1478 - 01 1478 - 02

Contech Research
An Independent Test and Research Laboratory

FIGURE #4

Classical Shock

Channel 5



Project-207814
Samtec
Actual Wave 1
100G's 6ms
Halfsine
12-12-07
Tech:S.Rath

ilac-MRA 1478 - 01 ACCREDITED Test Laboratory 1478 - 02

PROJECT NO.: 207814 SPECIFICATION: TC0746--1503

PART NO.: ERM8-025-L-D-EM2 PART DESCRIPTION: Connectors
ERF8-025-05.0-L-D

SAMPLE SIZE: 2 samples TECHNICIAN: SR

START DATE: 12/13/07 COMPLETE DATE: 12/14/07

ROOM AMBIENT: 23°C RELATIVE HUMIDITY: 20%

EQUIPMENT ID#: 15, 33, 553, 684, 1166, 1167, 1168, 1271, 1272

VIBRATION, RANDOM

PURPOSE:

1. To determine if electrical discontinuities at the level specified exist.

2. To determine if the contact system is susceptible to fretting corrosion.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 28, Test Condition V, Test Letter B.

2. Test Conditions:

    a) Power Spectral Density : 0.04 g^2/Hz
    b) G 'RMS' : 7.56
    c) Frequency : 50 to 2000 Hz
    d) Duration : 2.0 hours per axis (3 axis total)
    e) Test Current : 100 milliamps

3. A stabilizing medium was used such that the mated test samples did not separate during the test.

4. Figure #2 illustrates the test sample fixturing utilized during the test.

REQUIREMENTS: See next page.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. There shall be no contact interruption greater than 1.0 microsecond.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. There was no interruption greater than 1.0 microseconds.