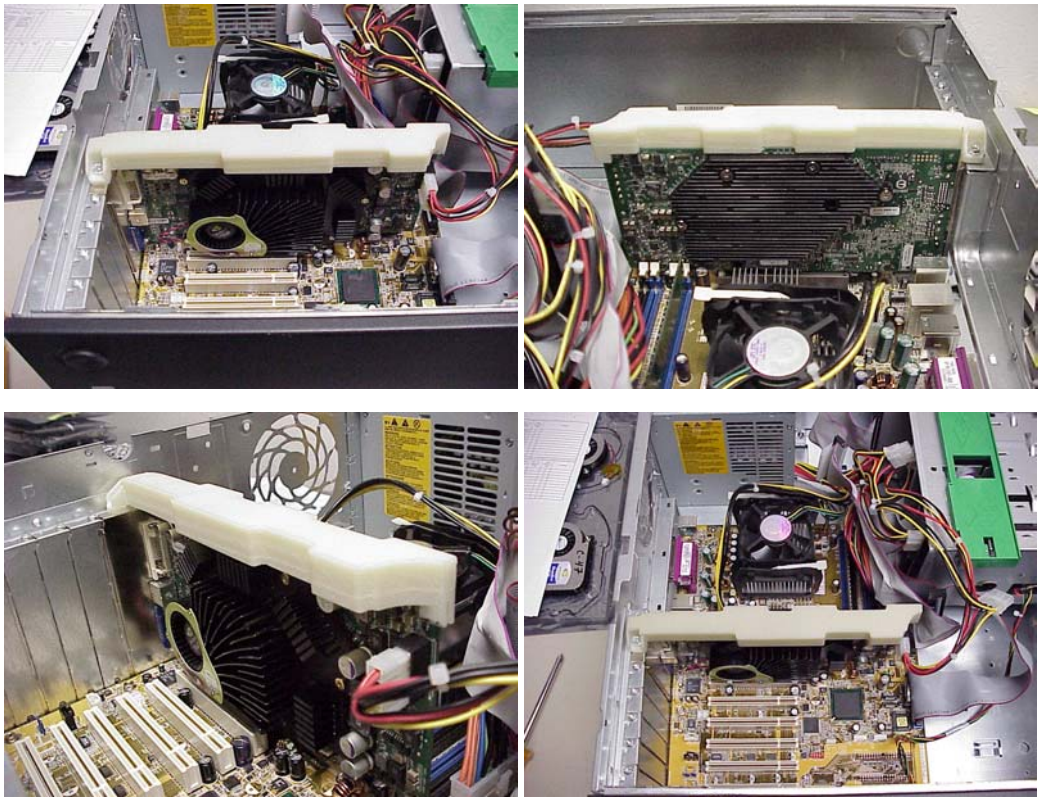
NVIDIA BOARD + CARDKEEPER (BUBBA WITH TAB) STIFFENER

600-10172-0001-000 WITH CARDKEEPER CK03-1255

SETUP ON PRESARIO 8000 TEST PLATFORM



TEST SUMMARY RESULTS

TEST PERFORMED	TEST CONDITIONS	RESULT	SAMPLE SIZE	REJECT	COMMENT
VIBRATION AND MECHANICAL SHOCK - *SYSTEM LEVEL, UNPACKAGED , Using a PRESARIO 8000 TEST PLATFORM*					
Non Operating-Random	0.015 G^2/Hz at 5-100 Hz, 0.008 G^2/Hz at 137-350 Hz, 0.0039 G^2/Hz at 500 Hz - nominal of 2.09 Grms and minimum of 10 minutes per axis.	**PASSED**	2	0	Same samples were used for these tests.
Non-Operating - Trapezoidal Shock	35 G, 150 in/sec on a Presario 8000 test platform. One shock input on each direction or a total of six shock inputs	**PASSED**	2	0	

TEST PROCEDURES AND DETAILED RESULTS

1.0 REQUIREMENTS/PROCEDURE

1.1 ***Vibration*** - To verify the PCBA's ability to withstand vibrations encountered during use and shipment. These PCBA's are subjected to specified vibration sweeps.

1.1.1 Test Parameters / Conditions - The PCBA shall be attached by its normal mounting means to a rigid fixture capable of transmitting the vibration conditions specified per paragraph 1.1.6. The fixture shall not inhibit any elastic or permanent deformation of the PCBA that may occur during the vibration tests.

1.1.2 Test / Inspection Frequency - Boards shall be visually inspected and tested prior to and after each test conditions using the latest manufacturing diagnostics and a selected application.

1.1.3 Test / Inspection Pass Criteria - Prior to and after each vibration test conditions, the graphic board should not exhibit any sort of hangs, display corruption, display any error codes and visual abnormality, such as loosening of hardware, component/material fatigue, etc. respectively.

1.1.4 Test Equipment Info

Test Equipment		Test Platform	
Mftr / Model	LDS 790-335T/Dactron Analyzer	Motherboard	Intel
Cal Date:	05/29/03	Microprocessor	PIII - 815 Chipset
Cal Due Date:	05/29/04	Memory	128 MB

1.1.5 Test Set Up: Non Operational -

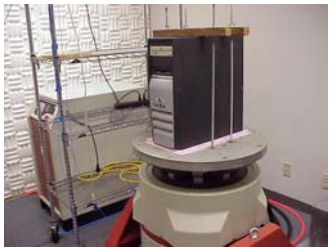
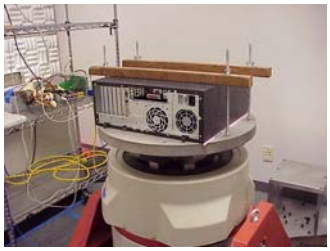
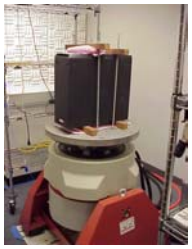




Photo shown are the set up of top to bottom, side-to-side and front to back axis of non-operational random vibration test using a Presario 8000 test platform. The P172 board with the stiffener are installed inside the box and tested without any shipping packaging.

1.1.6 Visual Inspection and Test Result /Test Software Info

TEST PERFORMED	TEST CONDITIONS	TEST ORIENTATION	RESULTS		Mfg Diags Pre/Post	BIOS Pre/Post
			SAMPLE #1	SAMPLE #2		
Non Operating-Random Vibration	0.015 G^2/Hz at 5-100 Hz, 0.008 G^2/Hz at 137-350 Hz, 0.0039 G^2/Hz at 500 Hz - nominal of 2.09 Grms and minimum of 10 minutes per axis.	TOP TO BOTTOM	PASSED	PASSED	618-20606-3700-CX8	04.35.20.23.04
		FRONT TO BACK	PASSED	PASSED		
		SIDE TO SIDE	PASSED	PASSED		

1.2 ***Mechanical Shock*** (Non-Operating Trapezoidal) - This test is done on a "PC box" with the PCBA and the stiffener installed. This is to verify that PCBA, installed in a PC box, the ability to withstand shock encountered at the transportation environment. The PC box as a unit is subjected to specified shock pulses.

1.2.1 Test Parameter / Conditions - The PC box (with the PCBA installed) shall be attached by its normal mounting means to a rigid fixture capable of transmitting the shock conditions specified per paragraph 1.2.5. The fixture shall not inhibit any elastic or permanent deformation of the PC box that may occur during the shock tests.

1.2.2 Test / Inspection Frequency - Boards shall be visually inspected and tested prior to and after the test using the latest manufacturing diagnostics and a selected application.

1.2.3 Test/Inspection Pass Criteria - Prior to and after each trapezoidal shock test, the graphic board should not exhibit any sort of hangs, display corruption, display any error codes and visual abnormality, such as permanent deformation, interference between parts, etc. respectively.

1.2.4 Test Equipment Info and Test Set Up

Manufacturer/ Model #	
AVEX MP SM110/Test Partner Analyzer	
Gross Mass Package Weight	
32 pounds	
Cal Date	Cal Due Date
10/30/02	10/30/03

Picture shown is a P172 board with the stiffener installed on a Presario 8000 test platform and setup of the 6 axis.

1.2.5 Visual Inspection and Test Result /Test Software Info

TEST PERFORMED	TEST CONDITIONS	TEST ORIENTATION	RESULTS		Mfg Diags Pre/Post	BIOS Pre/Post
			SAMPLE #1	SAMPLE #2		
Non-Operating - Trapezoidal Shock	35 G, 150 in/sec on a Presario 8000 test platform. One shock input on each direction or a total of six shock inputs.	BOTTOM DOWN	PASSED	PASSED	618-20606-3700-CX8	04.35.20.23.04
		BACK DOWN	PASSED	PASSED		
		SIDE-LEFT DOWN	PASSED	PASSED		
		TOP DOWN	PASSED	PASSED		
		FRONT DOWN	PASSED	PASSED		
		SIDE-RIGHT DOWN	PASSED	PASSED		

2.0 HISTORY

REV. LEVEL	DATE	DESCRITION OF CHANGE	ORIGINATOR
A	08/28/03	Completed required system level vibration and shock test.	tpdaquioag