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Mechanical Engineering Division  
November 10, 2011

## **SUMMARY OF ENVIRONMENTAL TESTS PERFORMED**

**Project Number:** 18.04481.19

**Company:** Panasonic Computer Solutions Company  
Three Panasonic Way, 2F-12  
Secaucus, NJ 07094  
Attn: Angela MacNeill

**Equipment Tested:** Panasonic CF-53

**Test Dates:** May 2011 through June 2011

**Notes:** *Each test item was able to boot into the Microsoft® Windows® 7 Professional operating system following each of the tests described within this summary report. For those tests requiring operation during the test parameter application, it was confirmed that the test item was able to play an audio/visual file. A listing of summarized tests and results appear in the accompanying table. Full details will be provided in Report Number 18.04481.19.100.FR1.*

**Report Written By:**



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Eric Dornes  
Principal Engineer  
Structural Dynamics & Product Assurance Section

**Summary of Environmental Tests Performed on the Panasonic CF-53**

<b>Test Description</b>	<b>Test Parameters</b>	<b>Test Results *</b>
Altitude: Storage/Air Transport	MIL-STD-810G, Method 500.5, Procedure I <ul style="list-style-type: none"> <li>• 15,000ft (non-operating)</li> </ul>	Pass
Altitude: Operation/Air Carriage	MIL-STD-810G, Method 500.5, Procedure II <ul style="list-style-type: none"> <li>• 15,000ft (operating)</li> </ul>	Pass
High Temperature: Storage	MIL-STD-810G, Method 501.5, Procedure I <ul style="list-style-type: none"> <li>• 160°F (non-operating), Hot Dry/Induced</li> </ul>	Pass
High Temperature: Operation	MIL-STD-810G, Method 501.5, Procedure II <ul style="list-style-type: none"> <li>• 140°F (operating)</li> </ul>	Pass
Low Temperature: Storage	MIL-STD-810G, Method 502.5, Procedure I <ul style="list-style-type: none"> <li>• -60°F (non-operating)</li> </ul>	Pass
Low Temperature: Operation <sup>#</sup>	MIL-STD-810G, Method 502.5, Procedure II <ul style="list-style-type: none"> <li>• 32°F (operating)</li> </ul>	Pass
Temperature Shock <sup>#</sup>	MIL-STD-810G, Method 503.5, Procedure I <ul style="list-style-type: none"> <li>• From 140°F to -4°F, three cycles</li> </ul>	Pass
Humidity	MIL-STD-810G, Method 507.5, Procedure II (Aggravated) <ul style="list-style-type: none"> <li>• Temperature cycles from 86°F to 140°F with relative humidity constant at 95%RH</li> </ul>	Pass
Sand and Dust: Dust	MIL-STD-810G, Method 510.5, Procedure I <ul style="list-style-type: none"> <li>• Blowing Dust (operating)</li> <li>• Operating temperature of 140°F</li> </ul>	Pass
Vibration: General Vibration – operating	MIL-STD-810G, Method 514.6, Procedure I (Transportation) <ul style="list-style-type: none"> <li>• Panasonic provided conditions (operating)</li> </ul>	Pass
Vibration: General Vibration – non-operating	MIL-STD-810G, Method 514.6, Procedure I (Transportation) <ul style="list-style-type: none"> <li>• Category 24, General minimal integrity (non-operating)</li> </ul>	Pass
Shock: Functional	MIL-STD-810G, Method 516.6, Procedure I <ul style="list-style-type: none"> <li>• 40g, 11ms (operating)</li> </ul>	Pass
Shock: Transit-Drop 36-inch	MIL-STD-810G, Method 516.6, Procedure IV <ul style="list-style-type: none"> <li>• 26 drops – 36in height on to 2in plywood (non-operating)</li> <li>• All drops performed on the same unit</li> </ul>	Pass

\* "Pass" indicates that the computer successfully booted Microsoft® Windows® following each test.

# Low Temperature Procedures were tested without optional hard drive heater