*Testing is performed at an internationally recognized, independent research, engineering and evaluation laboratory who by contractual agreement with their clients does not allow the use of their name or logo because doing so may imply an endorsement of products or services. For this reason, all references to said independent third party lab have been removed. Should you require the full unedited version, please contact the company identified below.*

Mechanical Engineering Division
March 31, 2015

# SUMMARY OF TESTS PERFORMED

**Project Number:** 18.04481.28

**Company**: Panasonic System Communications Company
Two Riverfront Plaza
Newark, NJ 07102
Attn: Pala Vachirabanjong

**Equipment Tested:** Panasonic CF-54 Computer

**Test Dates:** January 2015 - March 2015

**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 18.04481.28.100.FR1.*

**Report Written By:**

Eric Dornes
Principal Engineer
Structural Dynamics and Product Assurance Section

## Summary of Tests Performed on the Panasonic CF-54 Computer

| Test Description | Test Parameters | Test Results* |
|---|---|---|
| Altitude: Storage/Air Transport | MIL-STD-810G, Method 500.5, Procedure I<br>• 40,000ft Non-Operating | PASS |
| Altitude: Operation/Air Carriage | MIL-STD-810G, Method 500.5, Procedure II<br>• 14,000ft Operating | PASS |
| High Temperature: Storage | MIL-STD-810G, Method 501.5, Procedure I<br>• 160°F Non-Operating | PASS |
| High Temperature: Operation | MIL-STD-810G, Method 501.5, Procedure II<br>• 140°F Operating | |
| High Temperature: Tactical – Standby to Operational | MIL-STD-810G, Method 501.5, Procedure III<br>• High Storage Non-Operating to High Operating (test for operation)<br>• Test results are for battery operation | |
| Low Temperature: Storage | MIL-STD-810G, Method 502.5, Procedure I<br>• -60°F Non-Operating | PASS |
| Low Temperature: Operation | MIL-STD-810G, Method 502.5, Procedure II<br>• -4°F Operating | |
| Temperature Shock | MIL-STD-810G, Method 503.5, Procedure I<br>• From 160°F to -60°F, three cycles | PASS |
| Humidity | MIL-STD-810G, Method 507.5, Procedure II (Aggravated)<br>• Temperature cycles 86°F to 140°F; 95%RH | PASS |
| Sand and Dust: Dust | MIL-STD-810G, Method 510.5, Procedure I<br>• Blowing Dust (operating)<br>• Operating temperature of 140°F | PASS |
| Sand and Dust: Sand | MIL-STD-810G, Method 510.5, Procedure II<br>• Blowing Sand (operating)<br>• Operating temperature of 140°F | PASS |
| Vibration: General Vibration – operating | MIL-STD-810G, Method 514.6, Procedure I<br>• Category 4, Typical Mission/Field Transportation Scenario (Fig 514.6C-1), 2hrs/axis<br>• Category 20, Ground Vehicles – Ground Mobile, composite wheeled vehicles, Fig 514.6C-3, 2hrs/axis | PASS |
| Vibration: General Vibration – non-operating | MIL-STD-810G, Method 514.6, Procedure I<br>• Category 24, General minimal integrity (non-operating), 1hr/axis | PASS |
| Shock: Functional | MIL-STD-810G, Method 516.6, Procedure I<br>• 40g, 11ms Operating | PASS |
| Shock: Transit-Drop 36-inch | MIL-STD-810G, Method 516.6, Procedure IV<br>• 26 drops – 36in height on to 2in plywood – non operating<br>• All drops performed on the same unit | PASS |
| IP51 testing | IEC 60529 (2001)<br>• Against ingress of solid foreign objects: Dust Protected<br>• Against ingress of water with harmful effects: Vertical Dripping | PASS |

** "Pass" indicates that the computer successfully booted Microsoft Windows 7 Professional following each test.*