



Latitude 7340,7440-7640 Laptop



Summary of Independent Environmental Testing.

Test name	Test procedure
Tests performed	MIL-STD-810H testing
Equipment tested	Latitude 7340-7440-7640
Independent testing facilities	14" & 16" 3rd Party Testing DEKRA iST Reliability Services Inc., Reliability Testing Laboratory 1F, No.22, Puding Road, Hsinchu City, Taiwan, R.O.C. Tel: 886-3-579-5766, Fax: 886-3-579-5756
	13" 3rd Party Testing SGS Taiwan Ltd. No.17, Wu Chyuan 8th Road, New Taipei Industrial Park, WuKu District, New Taipei City 248021, Taiwan(R.O.C) Phone: +886 2 2299 3279 Fax: +886 2 2298 9820

Notes

All environmental testing listed in the accompanying tables was performed and reported independently by accredited testing companies.

Documented MIL-STD-810H, testing guidelines were followed. All tests were performed with I/O and expansion doors closed, unless otherwise noted. A summary listing of tests appear in the tables included in this document.

For more information visit: dell.com

MIL-STD-810H environmental testing

MILSTD Test Spec	Test Name	Test Parameters	7340	7440	7640
MIL-STD-810H, Method 500.6, Procedure I	Altitude - Storage / Air Transport	Test Pressure: Equivalent to cabin altitude of 15,000' Temperature: 21°C Altitude Change Rate: <10 m/s Duration: 1 hour	Pass	Pass	Pass
Method 500.6 Procedure II	Altitude - Operational	Test Pressure: Equivalent to cabin altitude of 15,000' Temperature: 21°C Altitude Change Rate: <10 m/s Duration: 1 hour	Pass	Pass	Pass
MIL-STD-810H, Method 501.7, Procedure I	High temperature - - Induced (Storage and Transition) Conditions	Duration: 7 X 24 hr. cycles Temperature: 33 - 71°C (non-operational / storage) Table 501.7 - III High Temperature cycles, climate category A1 -Hot Dry	Pass	Pass	Pass
MIL-STD-810H, Method 501.7, Procedure II	High temperature - Operation Cycling temperature exposure	Operational State: Idle in Windows Duration: 5 X 24. hr. cycles Temperature: 32 - 49°C (Ambient Air) Table 501.7 - III High Temperature cycles Climate category A1 - Hot Dry	Pass	Pass	Pass
MIL-STD-810H, Method 502.7, Procedure I	Low temperature - Storage	Duration: 24 hrs. Temperature: -51°C	Pass	Pass	Pass
MIL-STD-810H, Method 502.7, Procedure II	Low temperature - Operational	Duration: 24 hrs. Temperature: -29°C	Pass	Pass	Pass
MIL-STD-810H, Method 503.7, Procedure I-A	Temperature Shock - One-Way Shock(s) from Constant Extreme Temperature	-Non-operational. - High Temperature: 96°C (205°F) - Low Temperature: -51°C (-60°F) - 3 high-to-low cycles - Dwell Time shall be 15min	Pass	Pass	Pass
MIL-STD-810H, Method 507.6, Procedure I Latitude 9k, 7k, & 5k Series only: Procedure II Aggravated Cycle Required Procedure I not required.	Humidity: - Induced (Storage & Transit) Cycles - Natural Cycles	- Duration: Table 507.6-II, (Hot-humid Cycle B3) - Material Category: Non-Hazardous Items Normal Test Non-operational. Test Criteria for Latitude Series: RH 95%; Temperature cycled between 30°C and 60°C ; Test cycle 24 hours; run 10 cycles	Pass	Pass	Pass
MIL-STD-810H, Method 510.7, Procedure I	Sand and dust - Blowing dust	Duration: 12 Hour Air velocity = 1.5 m/s (300 ft/min) to 8.9 m/s (1750 ft/min) Temperature: 60°C Relative Humidity: 30%	Pass	Pass	Pass

MIL-STD-810H, Method 514.8, Procedure I, Table 514.8C-II Category 4	Vibration	Operational Vibration, 5-500 Hz, 1.17 Grms, random 1 hour on Bottom, Left and Back side	Pass	Pass	Pass
MIL-STD-810H, Method 514.8, Procedure I, Category 24	Vibration - Minimum integrity test	Non-OP vibration, 20-2000 Hz, 7.69 Grms Test Duration: 1hr/axis Test axis: X,Y and Z.	Pass	Pass	Pass
MIL-STD-810H, Method 516.8, Procedure I	Shock - Functional Shock	185g, 2ms Half Sine 1 shock/axis/direction for a total of 6 shocks Note: Dell to use Half Sine Waveform to replace Saw Tooth Waveform in accordance with MIL SPEC.	Pass	Pass	Pass
MIL-STD-810H, Method 516.8, Procedure II	Shock, Transportation Shock	- On-road Shock, 5.1g / 11m (Table 516-8-VII) - Off-road Shocks 15.2g / 5ms (Table 516-8-VII) - Test unit orientations at x, y and z axis for both test. - Unit is Non-Operational during both test - Saw tooth wave form can be replaced by other classical wave forms necessary to meet test equipment capability. See Durability Engineering for acceptable alternative wave forms if needed. Example: Alternate Half Sine for On-road shock 5g, 5ms. Alternate Half Sine for Off-Road shock 15g, 5ms"	Pass	Pass	Pass
MIL-STD-810H, Method 516.8, Procedure IV	Shock - Transit Drop	Modified - 26 X 30" drops (unless specified differently by LOB below) onto 2" of plywood over non-yielding surface. The 26-drop requirement (Table 516.6-VI) may be divided among up to five samples of the same test item in any combination. For Latitude Series: - Latitude 3k Series, test to 18" Drop Height - Latitude 5k Series, test to 30" Drop Height - Latitude 9k, & 7k Series, test to 36" Drop Height - Education Series, test to 48" Drop Height	Pass	Pass	Pass
MIL-STD-810H, Method 516.8, Procedure V	Shock - Crash Hazard Shock	Non Operational. 185g, 2ms Half Sine 2 shocks/ axis/direction for a total of 12 shocks For Latitude Series (Follow Latitude Series Marketing Requirements): Operational. 3 shocks/axis/direction for a total of 18 shocks; 40 Gs peak, 11 ms Note: Dell to use noted test to replace MIL- STD-8108, Method 516.8, Procedure V, Table 516.8-XIII.	Pass	Pass	Pass

MIL-STD-810H, Method 516.8, Procedure VI	SHOCK - Bench Handling	Angle drops onto Bench Top per MIL STD Procedure VI	Pass	Pass	Pass
MIL-STD-810H, Method 524.1, Procedure III	Freeze/ Thaw - Rapid Temperature Change	Non-operational Exposed to a temperature drop of -10°C (14°F) for two hours. Unit is removed and checked for operation.	Pass	Pass	Pass

Pass criteria and test scope information

For operational tests, a pass indicates that the unit remained operational during the entirety of the test. For non-operational tests, a pass indicates that a functional verification was performed immediately after the test exposure, in which the unit was powered on and booted to the primary operating system. Cosmetic damage does not constitute a failure unless there is a safety concern. Sample sizes tested are not statistically significant.