



ANSYS® + Hi-Tech Outsourcing Services

ANSYS Professional NLS helped us obtain results that complied with testing standard requirements. Hi-Tech Outsourcing Services met the specifications with the first prototype because ANSYS software delivered results within the appropriate timeframe and at a reasonable cost.

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Simulation shortens design cycle for seismic qualification of industrial PC rack

D: Modal
Total Deformation
Type: Total Deformation
Frequency: 8.3071 Hz
Unit: mm
11:52:39.13 11:44

6.2377 Max
5.2444
4.8516
4.1585
3.4054
2.7732
2.0792
1.2942
0.65398
0 Min



Total deformation plot

Computer storage racks that are used to mount servers or desktops must provide structural support for computers — and this must comply with Bellcore testing standards. These standards are the most common set of safety, spatial and environmental design guidelines applied to telecommunications equipment. Finite element analysis (FEA) methods can be used to ensure compliance.

Business Challenges

As competition increases, new designs require quick turnaround during product development. At the same time, computer storage racks must meet industry standards including seismic tests. To deliver this faster time to market, companies need to develop products using fewer prototype tests.

Technology Used

ANSYS® Professional™ NLS

Engineering Solution

- Engineers constructed a 3-D model of the industrial PC rack and performed finite element analysis to determine structural integrity and performance characteristics of the rack system under different seismic loading conditions.
- The simulation allowed Hi-Tech Outsourcing Services to quantify system performance characteristics under the influence of seismic inertia loads based on specification and regulatory documents as well as industry standards.

Benefits

- Based on the seismic analysis results and margin of safety calculations for the rack, engineers determined that the industrial PC rack design complied with the Bellcore seismic testing standard.
- Using FEA shortened the design cycle and ensured that rack design would perform according to the specifications.
- The first prototype met the testing standards — saving any additional time and costs that would be required for further prototyping.

Company Description

Hi-Tech Outsourcing Services is a leading architectural engineering construction (AEC) and industrial services provider in India. Hi-Tech provides solutions for automotive, aerospace, defense, power plant, chemical, construction and marine industries. Hi-Tech partners with its clients to provide sound and affordable business solutions.

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