5G-Telecom Industry Vertical

Niharika Computational Engineering Solutions Pvt Ltd

Overview, Services and Key Projects

Overview:

The Impressive performance of 5G devices is associated with significant thermal challenges resulting from Integration complexities and high heat flux devices like Power amplifiers. An efficient thermal cooling design is essential to manage the generated heat, which may limit RF performance and ultimately lead to reliability issues.

The structural integrity of the device shall be as per the telecom equipment Industry standards (ETSI EN 300 019-2-2) to ensure its durability during and after exposure to intense conditions. The manufacturer must validate the product for Random vibration, Sine Sweep, Shock, Seismic, Acceleration & Wind load requirements.

Our Institutional knowledge of thermal and structural solutions for electronic devices is the chief factor that makes us distinctively different in the industry. Our founders bring over 20 years of experience with global Semiconductor and technology companies like Lam Research Corporation, Applied Materials, and ISRO Satellite design center.

Our deep domain knowledge and expertise in Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) software tools have enabled us to efficiently address thermal and structural issues associated with 5G and telecom devices and add value to our customers business.

Experience with prominent and diverse clients

Services:

Thermal design and Computational Fluid Dynamics analysis

- Conduction cooled, and Liquid cooled chassis design and CFD analysis
- Active and passive thermal control system design
- Conduction, convection, and Radiation modeling
- Heat sink – selection/custom design
- Proven experience with Compact thermal models – DELPHI, 2R models, etc
- Section and Implementation of passive thermal elements like Heat pipes, Optical solar reflectors, Multi-layer Insulation, etc.
- Board level, Subsystem level, and Integrated level CFD analysis

Structural analysis

- Static structural and Thermal analysis
- Modal analysis
- Vibration: Sine sweep analysis
- Acceleration analysis
- Random vibration analysis, Shock analysis, Seismic analysis
- Wind load analysis, Crash analysis

Mechanical design

- Reverse Engineering
- Concept Design, Sheet Metal Design
- Enclosure & chamber design, 2D to 3D Conversion

List of Key Projects: CFD analysis

SL No	Project title	Customer
1	Development of a turn-key thermal solution for high heat flux power amplifier (GaN RF module) assembly	Bharat Electronics Limited
2	CFD analysis for 5G Multi Band Remote Radio Units (RU)	US client
3	Aerodynamics analysis for Multiband 5G Remote Radio unit with antenna	US client
4	CFD analysis of Dual band Radio unit	Saankhya Labs

List of Key Projects: Structural analysis

SL No	Project title	Customer
1	Dynamic FEM analysis for 5G Multi Band Remote Radio Units (RU) with antenna, covering Modal analysis, Sinusoidal vibration, Random vibration, shock analysis, acceleration analysis, seismic analysis, and wind load analysis	US client
2	Dynamic FEM analysis for the dual-band and tri-band radio unit covering Modal analysis, Sinusoidal vibration, Random vibration, shock analysis, acceleration analysis, seismic analysis, and wind load analysis	Saankhya Labs

Contact us

Name: Mr. Rudresh Ganganna

Designation: Director

Address: JC Plaza, No.716(35), 42nd Cross, Rajajinagar 3rd block, Karnataka State, India

Telephone: +91 9916266179 , +91 9620000347

Website: www.nicecae.com

e-mail: accounts@nicecae.com   rudresh@nicecae.com