

Computer Heat Sink Design Analysis



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Synopsis


- ❑ Importance of Simulation
- ❑ Fin Geometries
- ❑ CFD Setup and Boundary Conditions
- ❑ Results
- ❑ Supporting Material
- ❑ Conclusions
- ❑ Comments

Importance

- ❑ Computers continue to get faster via smaller and more intricate circuitry, which generates mass amounts of heat.
- ❑ Heat given off by processors must be dissipated or electrical components will run slowly or short out.
- ❑ Gives rise to many irradiative, conductive, and natural and forced convection schemes for cooling.
- ❑ There seem to be a few very popular designs for forced convection fan heat sink combinations for CPU's.
- ❑ Why is one style chosen over the other?

Implemented Heat Fin Geometries

3 geometries were tested:



Pin Fin Heat Sink

Radial Plate Fin Heat Sink

Plate Fin Heat Sink

