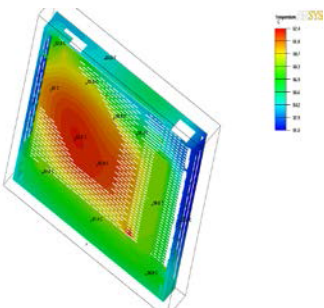
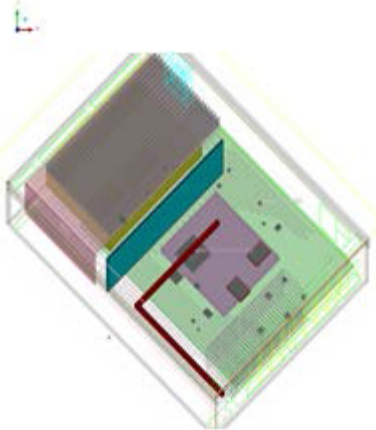
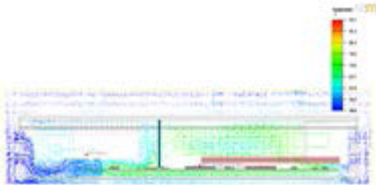


**Industry:**  
**Consumer Electronics**  
**Application:**  
**HD DVR**



## Introduction

- A consumer electronics company was developing a new Set Top Box (STB) HD DVR for a well known satellite television provider. The client requested the assistance of Aavid, Thermal division of Boyd Corporation, in their overall thermal and mechanical design of the chassis. The objective was to develop a cost effective solution considering ease of manufacturing in a high volume application.

## The Challenge

- Aavid must provide a mechanical chassis design that meets requirement specified from STB service provider.
- Select or design a natural convection heat sink(s) for the CPU and chipset and determine the optimum location for a cost effective, inexpensive, and easily manufactured solution.
- Design proper heat spreader for hard disk drive (HDD)

## The Solution

- Aavid's thermal analysis & design included:
- Optimizing air ventilation in terms of percentage opening and location.
- Use part of chassis for heat sinking while monitoring its touch temperature.
- Optimizing internal and external thermal radiation and internal conduction. Maximize cooling performance for natural convection and select a low speed fan/blower if additional cooling is necessary.

## The Deliverables/Results

**Aavid:**

- Optimized air ventilation in terms of percentage opening and location
- Designed proper heat spreader for HDD
- Designed natural convection heat sinks for CPU and chipset and determined optimum location.
- Allowed the client to have a reliable thermal solution for its end customer.