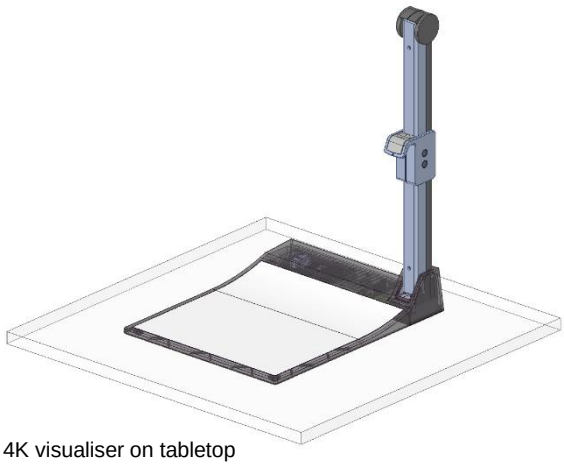
Project example - Simulation

4K visualiser - Thermal flow simulation

Aim of the simulation project

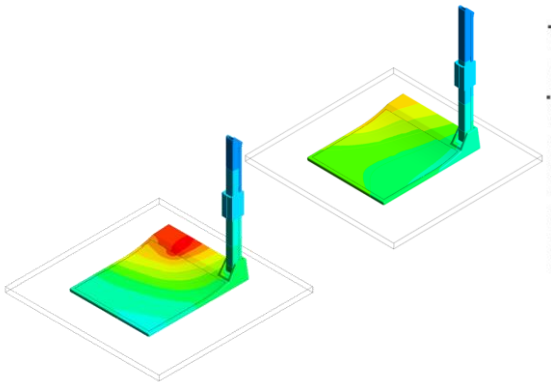
High resolutions in high-end multimedia products result in greater thermal loads in electronic assemblies. The aim of this simulation project was to analyse the entire assembly of a 4K visualiser by means of thermal flow simulation in order to visualise temperature distributions as well as air flow velocities and to identify the potential for optimisation.



4K visualiser on tabletop

Procedure and simulation results

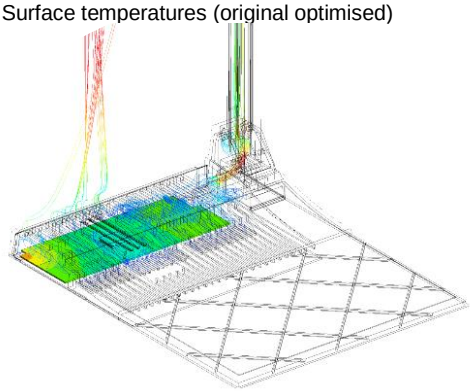
The thermal flow simulation carried out takes into account all relevant heat transport mechanisms (thermal conduction, thermal radiation, natural convection) as well as all important properties of the PCB and microelectronic components installed in the assembly. CAD data in a common format was used as the basis for the simulation and prepared according to the criteria for a thermal flow simulation. The visualisation of the results of the simulation facilitated the efficient and targeted derivation of improvement measures.



Surface temperatures (original optimised)

Added value for the customer

The simulation facilitated a detailed analysis of the thermal behaviour of the 4K visualiser. The comprehensive insight gained enabled concrete and effective improvement measures to be put forward. For the customer, significant advantages resulted from a comprehensive understanding of the visualiser's temperature behaviour and the saving of prototype loops for thermal tests.



Flow lines of the thermal lift

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