



PROJECT DETAILS

Customer: **Array
Telepresence**

Application: **Video
Conferencing &
Telepresence**

Technology: **System
Optimization &
BGA Heatsinks**

Industry: **Communications**

Location: **Ohio, USA**



THE DESIGN CHALLENGE

Video conferencing is becoming an increasingly popular way for people to connect, and has evolved significantly in the past few years. In the past the goal of videoconferencing was merely “seeing there.” Now the challenge of telepresence is to create an experience of “being there.” This causes significant hardware and software challenges for engineering teams who must deliver this experience under budget and on schedule.

Array Telepresence recently introduced the Equal-i Technology that consists of patented image improvement algorithms, cameras, and image processors. These together provide an improved immersive environment at low cost with the use the existing videoconferencing codec. At the time they engaged the services of Aavid, Thermal division of Boyd Corporation, they had completed the industrial, electrical, and mechanical design of the Equal-i 2S Image Processor, and were in the stage of final prototype testing. During this testing stage they discovered that a few critical components inside the device were exceeding their maximum recommended operating temperatures.

As the overall design of the device was completed and mature Array was looking for solutions that can be easily implemented with minimal changes in existing design. Most importantly, they did not want to delay their ship date.

To resolve the thermal issue quickly and efficiently they approached Aavid for thermal review and testing.

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For more case studies and information on Aavid Design & Engineering Services, please visit www.aavid.com.

THE AAVID SOLUTION

After preliminary discussions with Array and understanding their design targets and constraints, Aavid recommended their [Thermal Discovery](#) service as the most efficient way to move forward.

Aavid first set up and performed thermal testing to characterize the temperatures and air flow inside the Equal-I 2S. Eleven thermocouples were used to measure the case temperatures of the critical components and the inlet/outlet temperatures. Aavid also interacted with Array closely to understand what design and manufacturing freedoms existed that would enable the optimal solution.

With the baseline test results, five options with minimal system modifications were proposed to achieve the thermal requirements. The best case showed at least 20% case temperature improvement on all critical components. Evaluation of all five cases was completed within weeks to meet the tight schedule. The project plan was revised based on the latest test results to optimize the thermal improvements. Five Aavid BGA heat sinks were added to the hottest chips and baffles were added to shape the system airflow to provide maximum cooling.

The result: Success. Aavid rapidly characterized the image processor and resolved the thermal issue by offering multiple options that utilized off-the-shelf thermal management products.

