



INDUSTRIAL CONTROL

APPLICATION EXAMPLE

High-performance IPC with smart heat management

High-quality inspection systems for use in electronics manufacturing have to satisfy a wide range of requirements and, depending on the case, may need very high-performance industrial PCs (IPCs) containing powerful processors.

For one of its customers, HEITEC designed a high-performance IPC with long-term availability to serve as a control unit for a sub-assembly tester, taking a standard IPC casing as its base. The special requirements of the target application lay in ensuring effective heat management despite high packing density and the need to observe strict EMC guidelines at the same time. Because the motherboard was fitted in the middle of the 19-inch wide and 3U high IPC casing, and this is where most of the heat is generated because of the high processor performance, HEITEC switched to a new fan arrangement that moved the fans from the outside into the center. This enabled all critical elements on the motherboard to be directly

supplied with cool air to mitigate these hot spots as far as possible. Knurled screws were used to attach the fan covers. These can be loosened by hand, which makes servicing much easier. The wiring was also adjusted and the mountings for the SSD cards were designed to enable them to be removed with no need for tools. These changes also make it easy to upgrade if needed.

HEITEC also came up with something special to speed up the manufacturing process. The mounting plate on which the main board is fitted was adapted to enable it to be screwed into place from below, i.e. through the base plate of the chassis, not in the more usual way from the inside of the casing. That means customers can mount the final assembly comprising motherboard, their own I/O and PCI-X cards as a single unit in parallel with mounting the casing. This also works in reverse, to disassemble the casing and perform any required maintenance work.

Innovative System Solution



A chassis designed and manufactured by HEITEC for use as sub-assembly test equipment, including application-specific electronics



The new arrangement of the fans in the HEITEC chassis enables smart heat management

Technical Summary

- › Industrial PC with high-performance motherboard
- › ATX power supply, 600 W
- › 4 additional axial fans
- › Assembly plate screwed into place through the base plate
- › Full front plate and I/O area of rear plate painted in RAL 9005

Customer Benefits

- › Easy system upgrade possible if needed
- › Simple to screw by hand, making maintenance very easy
- › Final assembly at customer's end using innovative screw attachment design for the mounting plate
- › Low noise level
- › Optimized heat management
- › Maximum performance with minimum space requirement
- › Long-term availability
- › Cost-optimized customer solution

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