Power Macintosh 8100/110: PowerPC Microprocessor Cooling (11/94)

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TOPIC ---

Does the PowerPC microprocessor used in the Power Macintosh 8100/110 create more heat inside the enclosure and if so, how is the additional heat being dissipated?

DISCUSSION ---

Yes, the 110 megahertz version of the PowerPC microprocessor does generate more heat. We have incorporated a technology based on the Peltier effect to cool the processor.

The Peltier cooling effect is achieved by using a thermoelectric cooler that provides the absorption or generation of heat as a current passes through a junction of two dissimilar materials. Electrons passing across the junction absorb or give up an amount of energy equal to the transport energy and the energy difference between the disimilar-materials conduction bands.

This thermoelectric heatsink is a solid-state device that performs the same cooling functions as freon-based compression or absorption refrigeratiors, but in miniature. The benefits of using this type of device are its small size, high reliability, precision temperature control capability, DC operation, and minimal electrical noise. The Peltier device attaches directly to the microprocessor's heatsink and plugs into the logic board.

Article Change History:
08 Nov 1994 - Clarified that 110 Mhz processor generates more heat.

Support Information Services

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