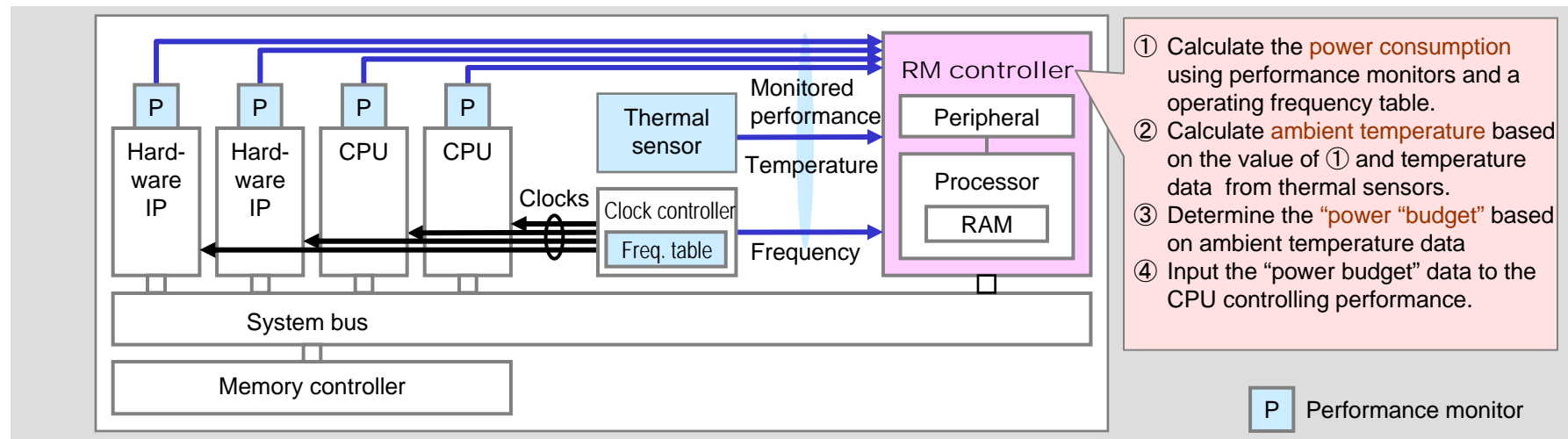


2007/2/14

On-chip temperature & power supply monitor to calculate the “power budget” for chips in operation based on ambient temperature



Hitachi, Ltd. and Renesas Technology Corp. have co-developed a technique to monitor on-chip temperature and power supply to calculate the allowable power consumption level (“power budget”) for the ambient temperature of a SoC (System-on-Chip) in operation. This technique employs thermal sensors integrated in the SoC to measure the chip temperature, as well as performance monitors and a operating frequency table data to calculate the power budget for the SoC using a dedicated microcontroller based on ambient temperature. By applying this technique, it will be possible to determine whether it is viable to increase performance above a preset value, for example, if the ambient temperature is low.

These results will be presented at the IEEE International Solid-State Circuits Conference (ISSCC 2007), held from 11th - 15th February 2007, in San Francisco, California, U.S.A.