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(54) Title: DETERMINISTIC POWER-ESTIMATION FOR THERMAL CONTROL

(57) Abstract: A system is described that includes a microprocessor and a thermal control subsystem. The microprocessor includes execution resources to support processing of instructions and consumes power. The microprocessor also includes at least one throttling mechanism to reduce the amount of heat generated by the microprocessor. The thermal control subsystem is configured to estimate an amount of power used by the microprocessor and to control the throttling mechanism based on the estimated amount of current power usage to ensure that junction temperature will not exceed the maximum allowed temperature.