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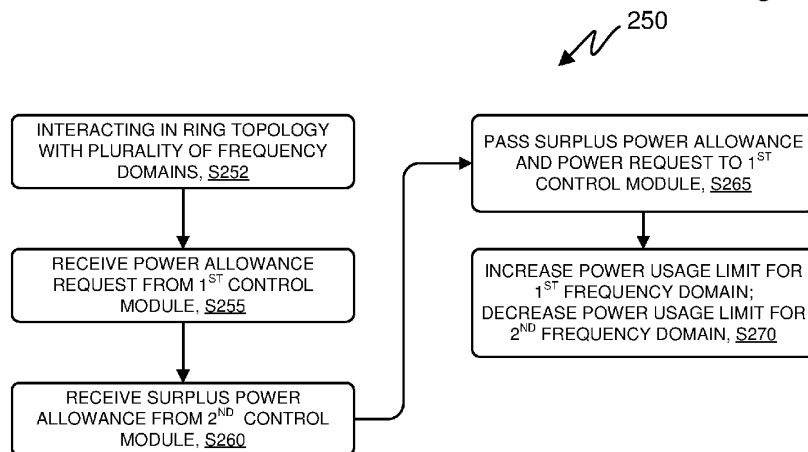
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(54) Title: POWER BUDGET DISTRIBUTION IN COMPUTER SYSTEM

Fig. 2



(57) Abstract: A method of power distribution in a computer system associates a number of tokens with a plurality of frequency domains (for example, cores) of a central processing unit (CPU) computer chip. The number of tokens allotted to the CPU is based on the CPU power budget. Cores are organized as a ring topology. A token pool traverses the ring, picks up excess tokens from cores having excess tokens, and gives the tokens to cores that need additional tokens. Tokens acquired by a core allows the core to increase operating frequency by an increment represented by the tokens. Consequently, power usage is weighted toward heavily loaded cores and away from lightly loaded cores. Overall power usage of the CPU remains within a power budget. The method budgets power optimally to sustain turbo frequencies for longer durations by not allowing control units to increase frequency in absence of any useful high frequency benefiting workload.

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