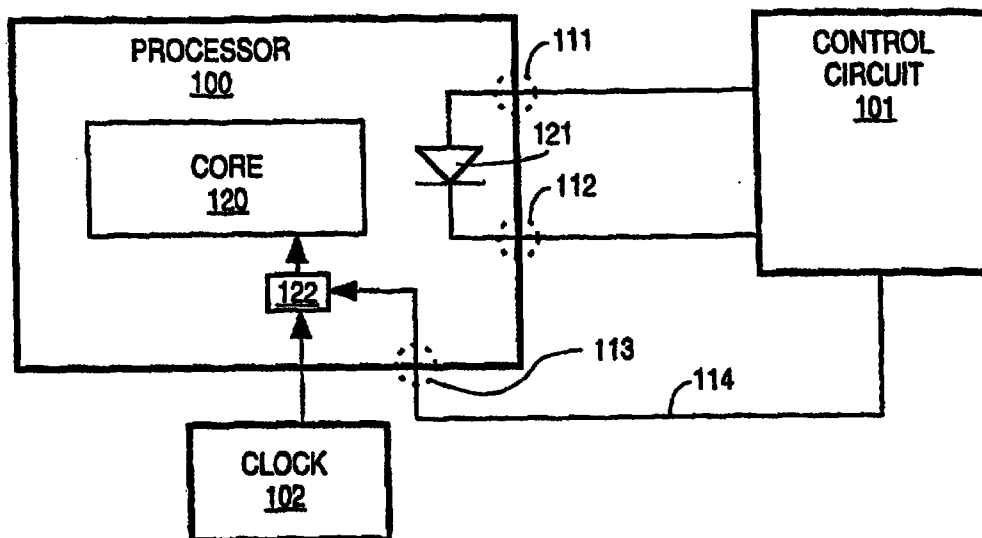




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| (51) International Patent Classification 7 :<br><b>G06F 1/20</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <b>A1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | (11) International Publication Number: <b>WO 00/58813</b>             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | (43) International Publication Date: <b>5 October 2000 (05.10.00)</b> |
| (21) International Application Number: <b>PCT/US00/06474</b><br>(22) International Filing Date: <b>9 March 2000 (09.03.00)</b><br>(30) Priority Data:<br>09/281,632                  30 March 1999 (30.03.99)                  US<br>(71) Applicant (for all designated States except US): <b>INTEL CORPORATION [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).</b><br>(72) Inventor; and<br>(75) Inventor/Applicant (for US only): <b>SENYK, Borys, S. [US/US]; 1020 Polk Lane, San Jose, CA 95117 (US).</b><br>(74) Agents: <b>MILLIKEN, Darren, J. et al.; Blakely, Sokoloff, Taylor &amp; Zafman LLP, 12400 Wilshire Boulevard, 7th floor, Los Angeles, CA 90025 (US).</b> |  | (81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b><br><br>Published<br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |                                                                       |

(54) Title: A METHOD AND APPARATUS FOR MONITORING THE TEMPERATURE OF A PROCESSOR



## (57) Abstract

A processor (100) comprises a processing core (120) integrated on the same chip with a temperature sensing diode (121). The two terminals of the diode are coupled to each of two I-O ports (111, 112) of the processor. In accordance with one embodiment of the present invention, the electrical characteristics across the I-O ports are measured by an external control circuit (101) to calculate a temperature of the processor. This temperature is compared to a threshold, and either an overtemp or undertemp signal is transmitted via a control line.