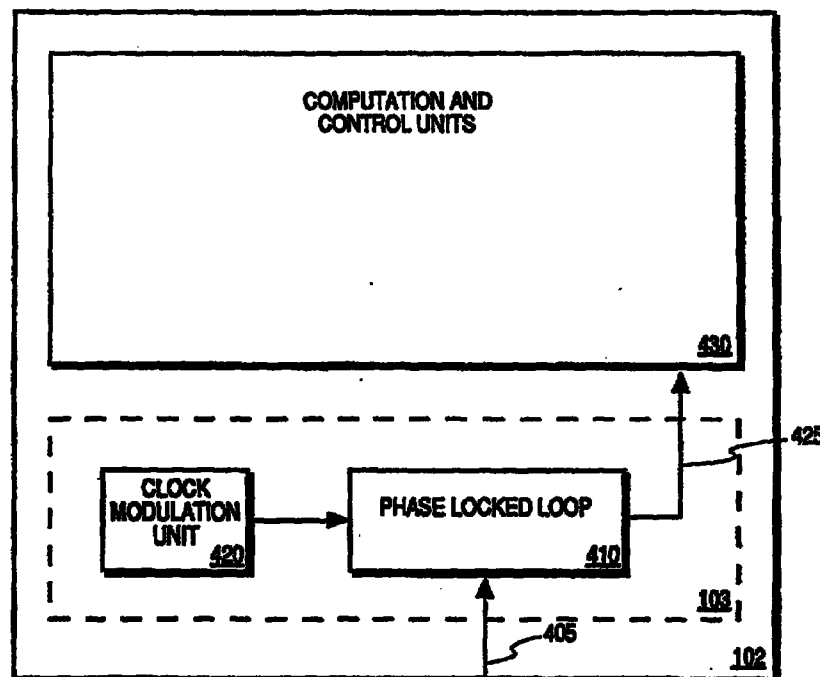


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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (51) International Patent Classification <sup>6</sup> :<br><b>H03B 29/00, H04L 7/00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>A1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (11) International Publication Number: <b>WO 96/27943</b><br>(43) International Publication Date: 12 September 1996 (12.09.96) |
| (21) International Application Number: <b>PCT/US96/01426</b><br>(22) International Filing Date: <b>22 February 1996 (22.02.96)</b><br>(30) Priority Data:<br><b>08/400,342</b> / <b>8 March 1995 (08.03.95)</b> <b>US</b><br>(71) Applicant: <b>INTEL CORPORATION [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).</b><br>(72) Inventor: <b>WEISS, Donald; 465 N.W. 170 Drive, Beaverton, OR 97006 (US).</b><br>(74) Agents: <b>SALTER, James, H. et al.; Blakely, Sokoloff, Taylor &amp; Zafman, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025-1026 (US).</b> | (81) Designated States: <b>AL, AM, AT, AT (Utility model), AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, (SG) SI, SK, SK (Utility model), TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</b><br><br>Published<br><i>With international search report.</i> |                                                                                                                                |

(54) Title: **FREQUENCY MODULATED CLOCK FOR REDUCED RADIATION**

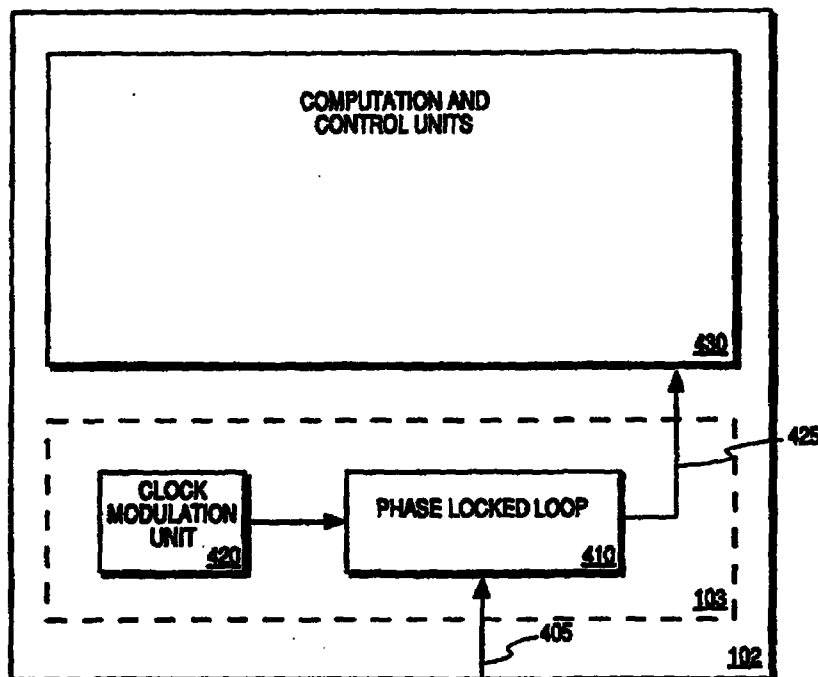
## (57) Abstract

A clock apparatus (420) reduces electromagnetic emissions from a microprocessor (102). The apparatus modulates the phase locked loop (410) of the microprocessor's internal clock so that it produces a frequency modulated output. The apparatus spreads the energy in the related harmonics of the internal clock over a wide band, reducing emission peaks at any given clock harmonic frequency.

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| <b>(51) International Patent Classification <sup>6</sup> :</b><br><b>H03B 29/00, H04L 7/00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 96/27943</b><br><b>(43) International Publication Date:</b> 12 September 1996 (12.09.96)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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