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(71) **Applicant (for all designated States except US):** **QUALCOMM INCORPORATED** [US/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants (for US only):** **WANG, Michael Mao** [US/US]; 8514 Rumex Lane, San Diego, California 92129 (US). **GANAPATHY, Chinnappa K.** [IN/US]; 12055 Mil Pitrero Road, San Diego, California 92128 (US).

BAI, Jinxia [US/US]; 13223 Sunset Point Way, San Diego, California 92130 (US).

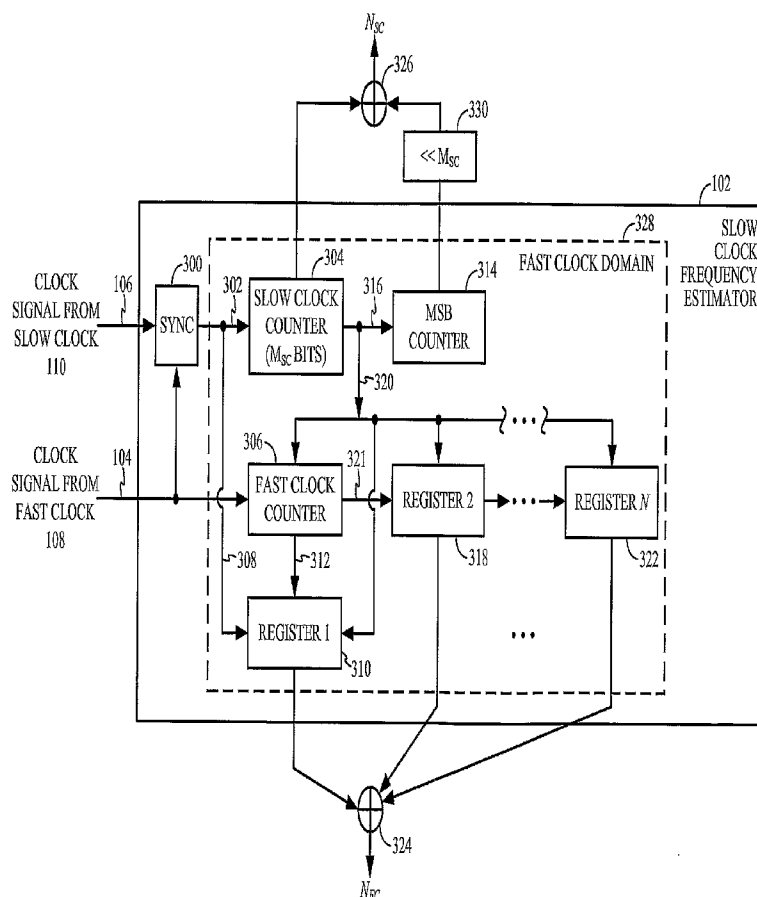
(74) **Agents:** **WADSWORTH, Philip R.** et al.; 5775 Morehouse Drive, San Diego, California 92121 (US).

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- (54) Title:** APPARATUS AND METHODS FOR ESTIMATING A SLEEP CLOCK FREQUENCY



(57) Abstract: Apparatus and methods for estimating the frequency of a sleep or slow clock using a fast clock, such as a temperature compensated crystal oscillator. The disclosed apparatus include an estimator having a first counter that receives sleep clock synchronized pulses issuing each cycle of the sleep clock period, yet are synchronized to a fast clock. The slow clock synchronized pulses are counted up to a predetermined number; whereupon a full count signal is issued. A second counter receives the full count signal and increments each time the full count signal is received. A third counter counts fast clock cycles until the full count signal occurs. Based on the number of counts of the slow and fast clock cycles, the frequency of the slow clock may be determined using only the domain of the fast clock for performing the measurement thereby tying accuracy of the measurement to the accuracy of the fast clock. The disclosed apparatus also include an integrated circuit and a transceiver employing the disclosed estimator. Corresponding methods are also disclosed.



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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