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(12) **United States Patent**  
Sriram et al.

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(54) **METHOD FOR MAINTAINING TIMING IN A CDMA RAKE RECEIVER**

(56) **References Cited**

U.S. PATENT DOCUMENTS

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6,282,230 B1 \* 8/2001 Brown et al. .... 375/140  
6,567,017 B2 \* 5/2003 Medlock et al. .... 341/50  
6,639,907 B2 \* 10/2003 Neufeld et al. .... 370/342

\* cited by examiner

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 618 days.

(57) **ABSTRACT**

A system and method for maintaining timing in a CDMA rake receiver has a global chip counter that counts CDMA signal chips as they arrive at the CDMA rake receiver. A local pseudo-noise (PN) sequence replica of the incoming CDMA signal is generated and used to perform a sliding window correlation of the locally generated PN sequence replica with the incoming signal to correlate the CDMA signal timing relative to stored CDMA signal chip counts. The PN sequence timing is maintained relative to GCC, which avoids having to keep track of absolute time within each Rake finger.

(21) Appl. No.: **09/691,576**

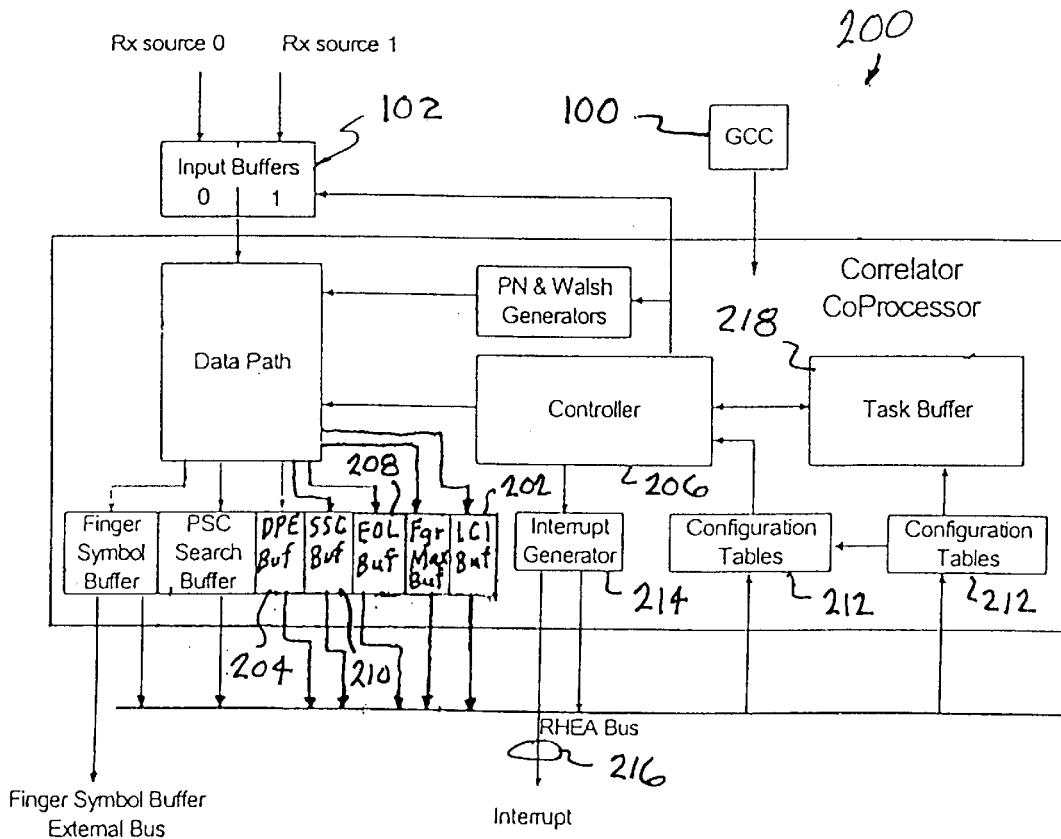
**23 Claims, 5 Drawing Sheets**

(22) Filed: **Oct. 18, 2000**

(51) **Int. Cl.**<sup>7</sup> ..... **H04B 1/69**; H04B 1/707; H04B 1/713

(52) **U.S. Cl.** ..... **375/147**; 370/320; 370/335; 370/342; 398/78

(58) **Field of Search** ..... 375/147; 370/320; 341/50; 708/190; 714/732



**Samsung et al. v. XR Commc'ns.**  
IPR2022-01362  
Exhibit 1016

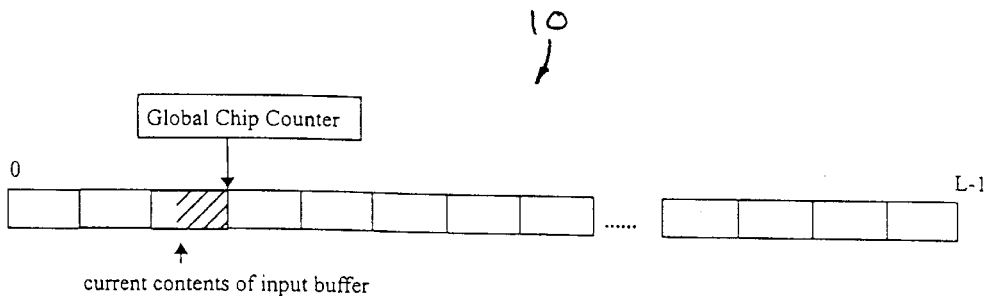


Figure 1. Global chip counter

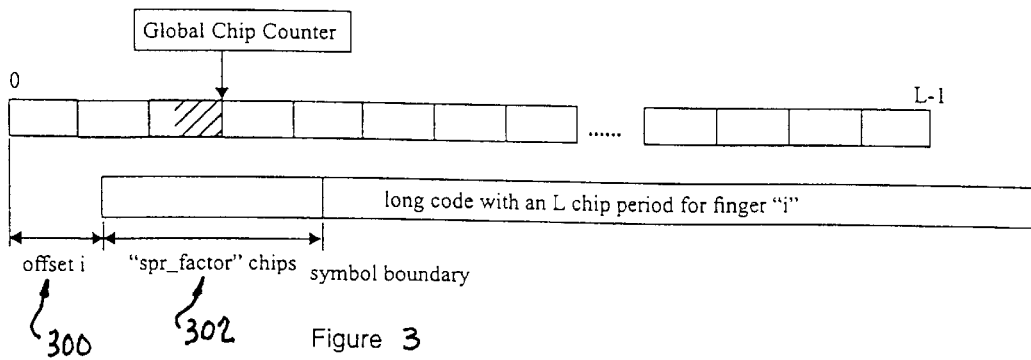


Figure 3

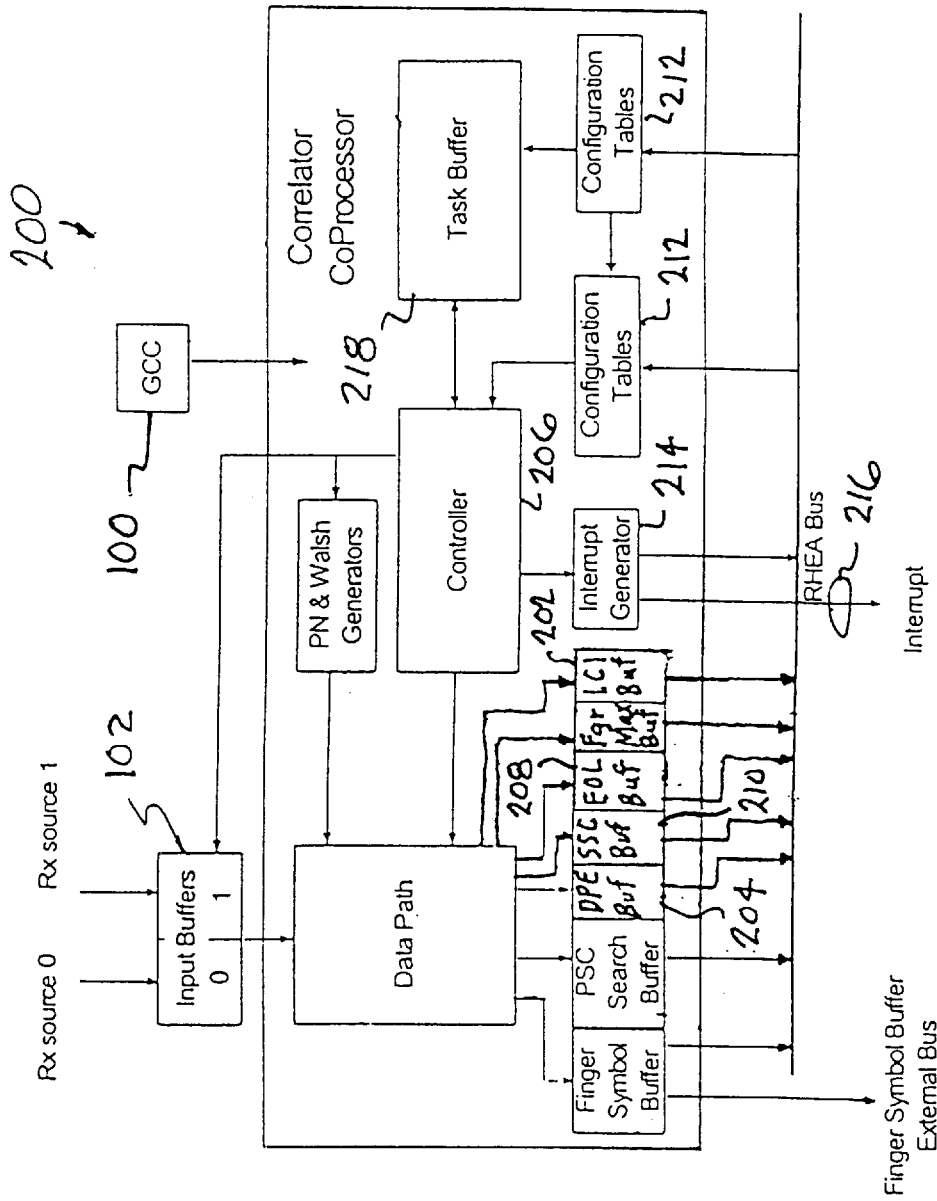


Figure 2

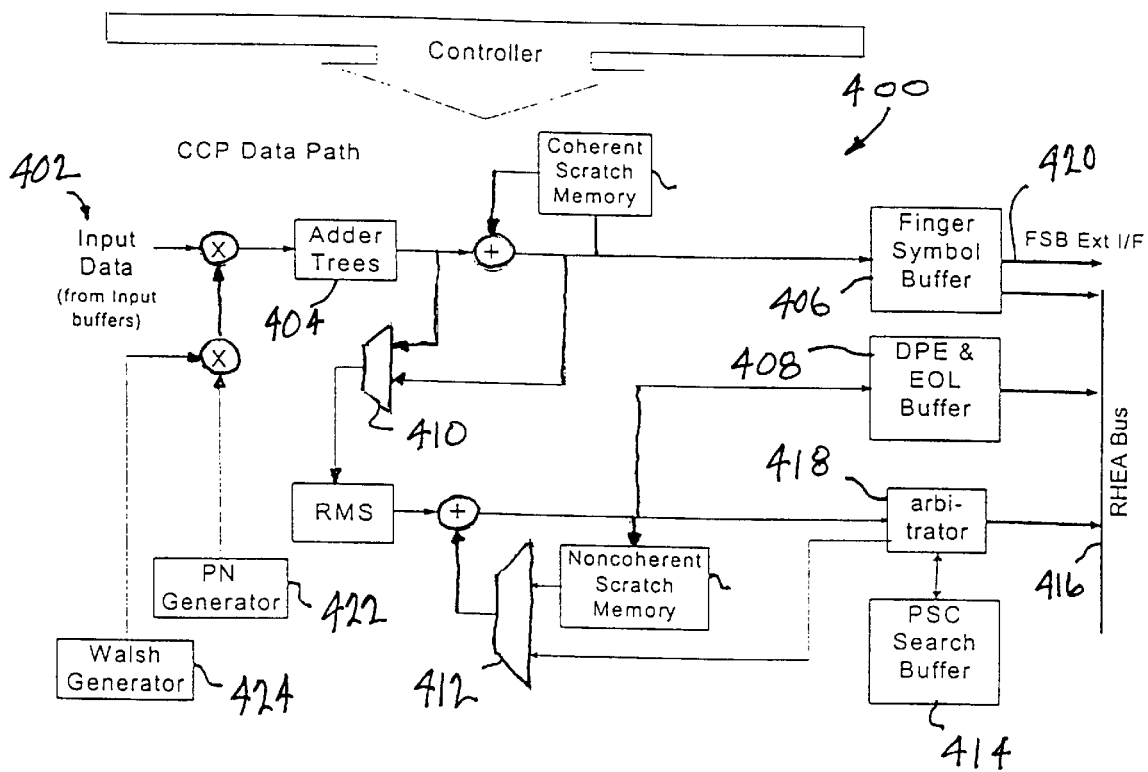


Figure 4 CCP Data Path

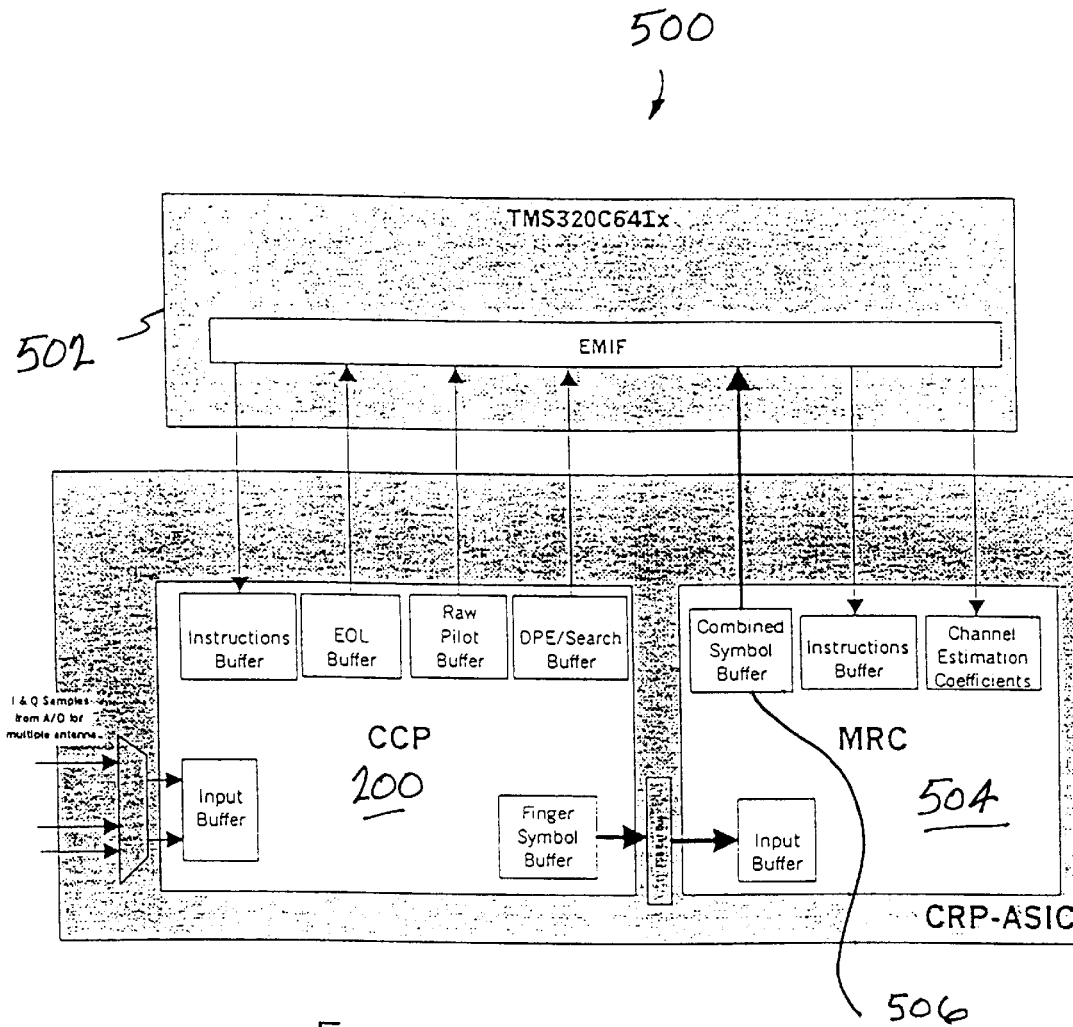


Figure 5

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