



**United States Patent** [19]  
**Trompower et al.**

[11] **Patent Number:** **5,950,124**  
[45] **Date of Patent:** **Sep. 7, 1999**

[54] **CELLULAR COMMUNICATION SYSTEM WITH DYNAMICALLY MODIFIED DATA TRANSMISSION PARAMETERS**  
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[73] Assignee: **Telxon Corporation**, Akron, Ohio

[21] Appl. No.: **08/566,502**

[22] Filed: **Dec. 4, 1995**

**Related U.S. Application Data**

[63] Continuation-in-part of application No. 08/523,942, Sep. 6, 1995.

[51] **Int. Cl.<sup>6</sup>** ..... **H04B 7/00**

[52] **U.S. Cl.** ..... **455/422**; 455/466; 455/557; 455/561; 455/562; 455/550; 455/551; 455/571; 455/572; 455/403; 455/23; 455/517; 455/65; 455/126; 375/281; 342/463; 342/364; 342/362

[58] **Field of Search** ..... 455/422, 466, 455/557, 561, 562, 550, 551, 571, 572, 403, 23, 517, 65, 126, 522; 375/281; 342/463, 364, 362

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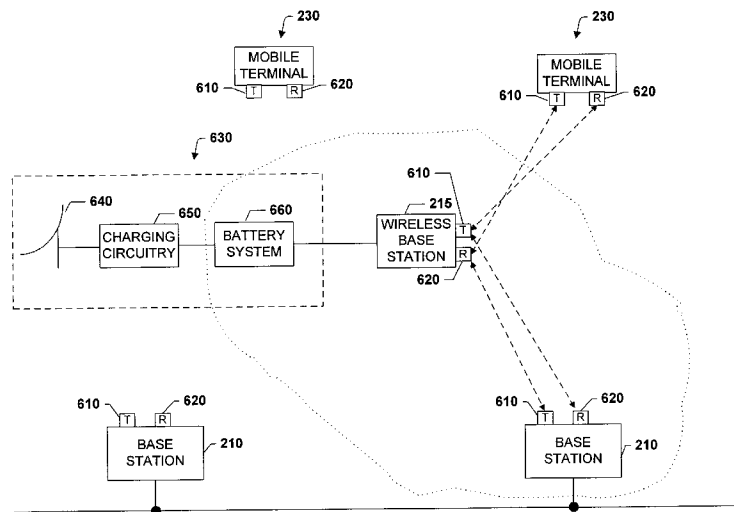
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*Assistant Examiner*—Keith Ferguson  
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[57] **ABSTRACT**

An apparatus and process for improving the performance of a cellular communication system using direct sequence spread spectrum techniques. The apparatus and process enable dynamic modification of communication system parameters including PN code length, chipping rate and modulation technique for transmission of a data packet. Modification is based on proximity of the transmitter and receiver, transmitter and receiver capabilities and other factors. The system evaluates tradeoffs between data transmission speed and communication range to improve system performance.

**46 Claims, 12 Drawing Sheets**



Qualcomm Incorporated

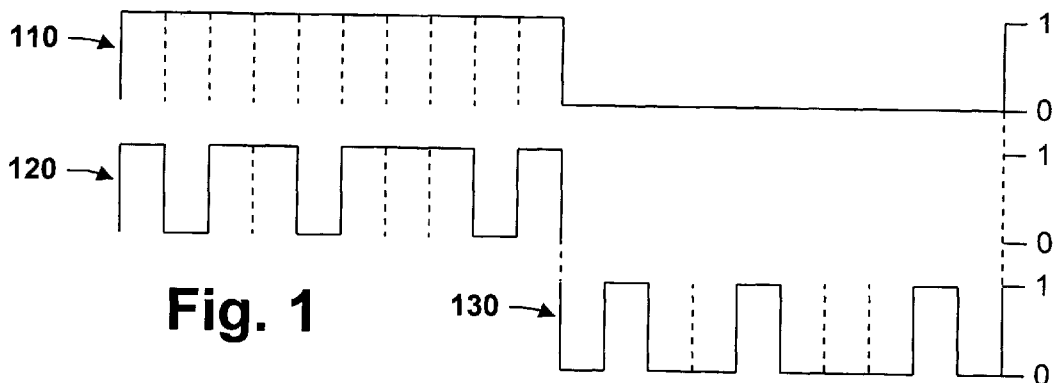


Fig. 1

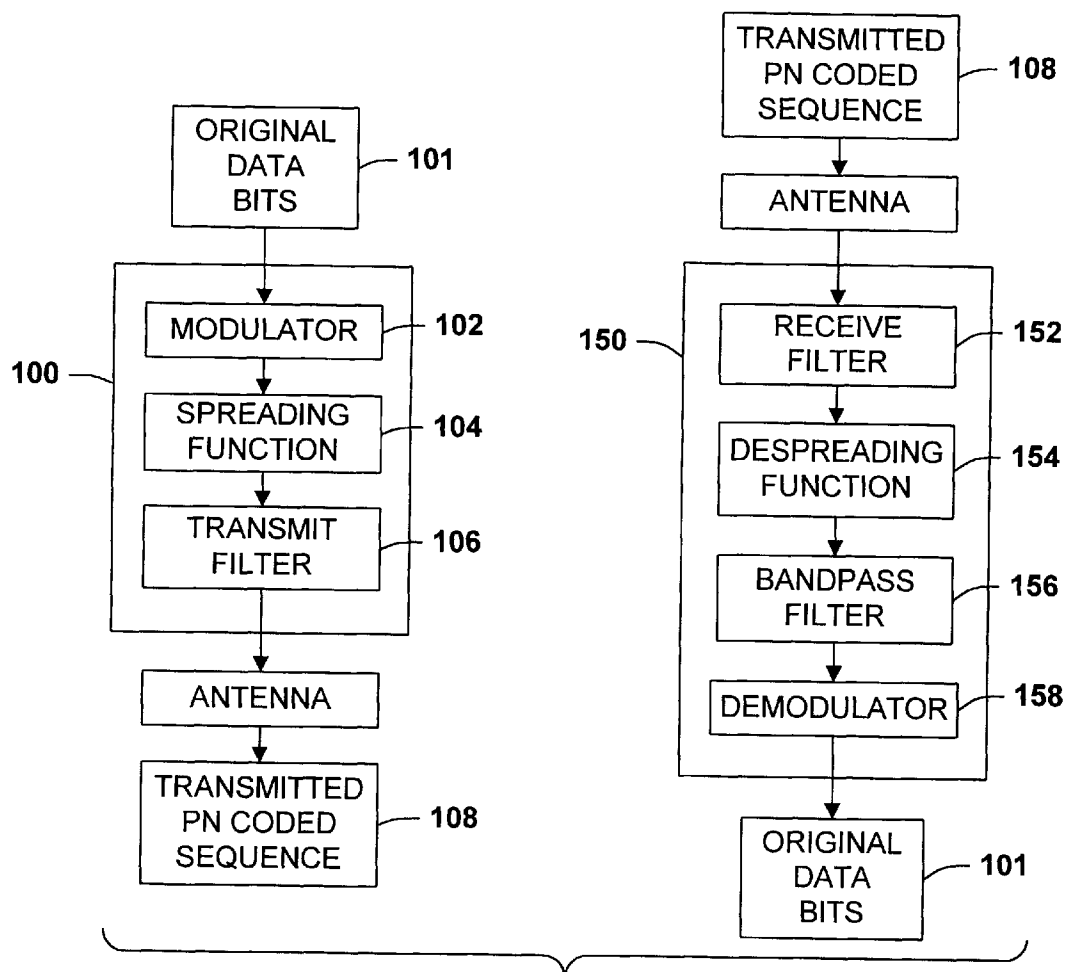


Fig. 1A

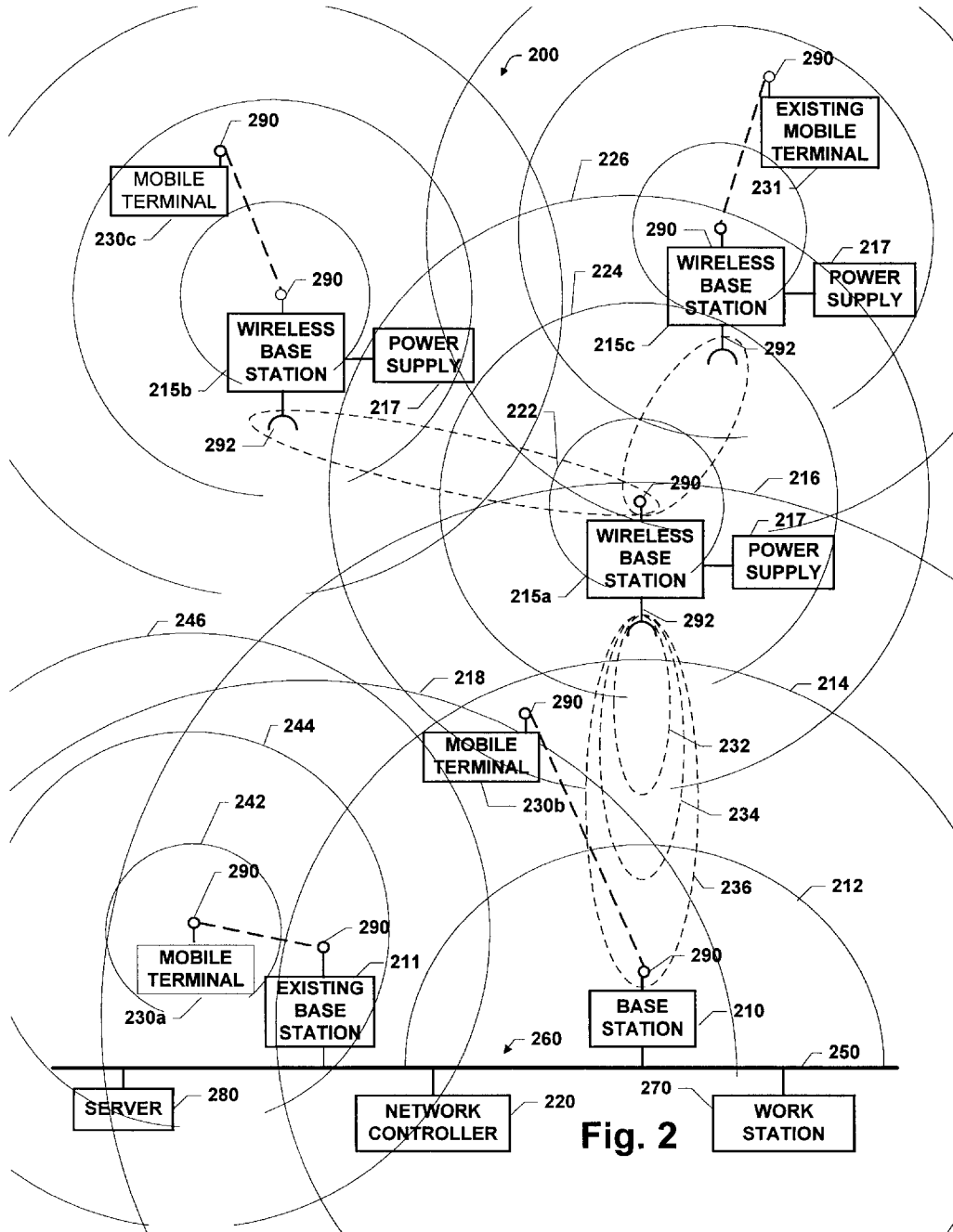
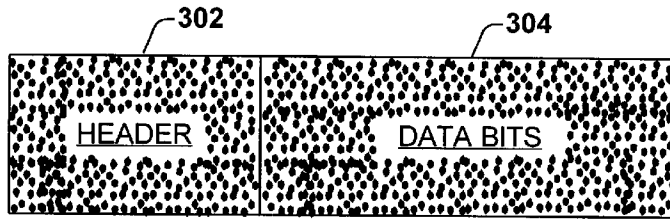


Fig. 2



300 ↗

Fig. 3A

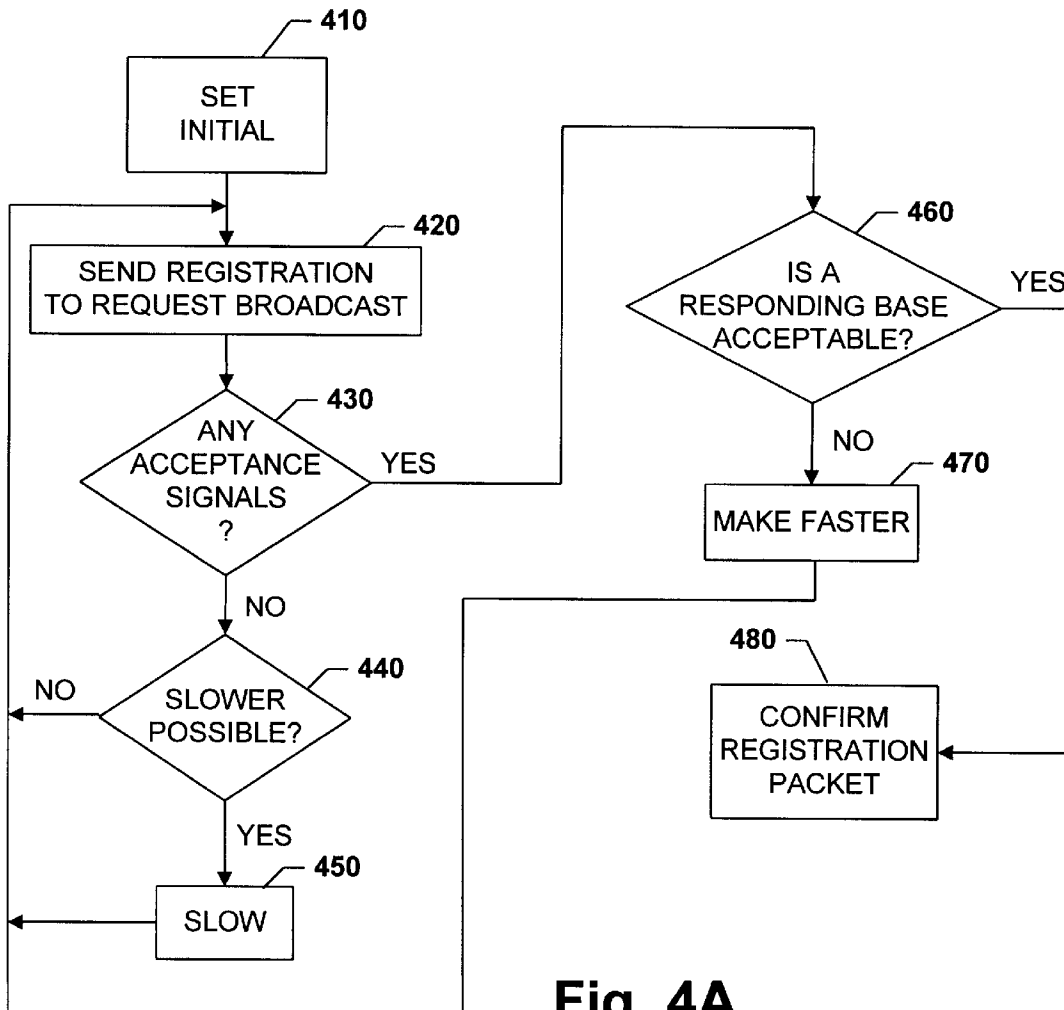
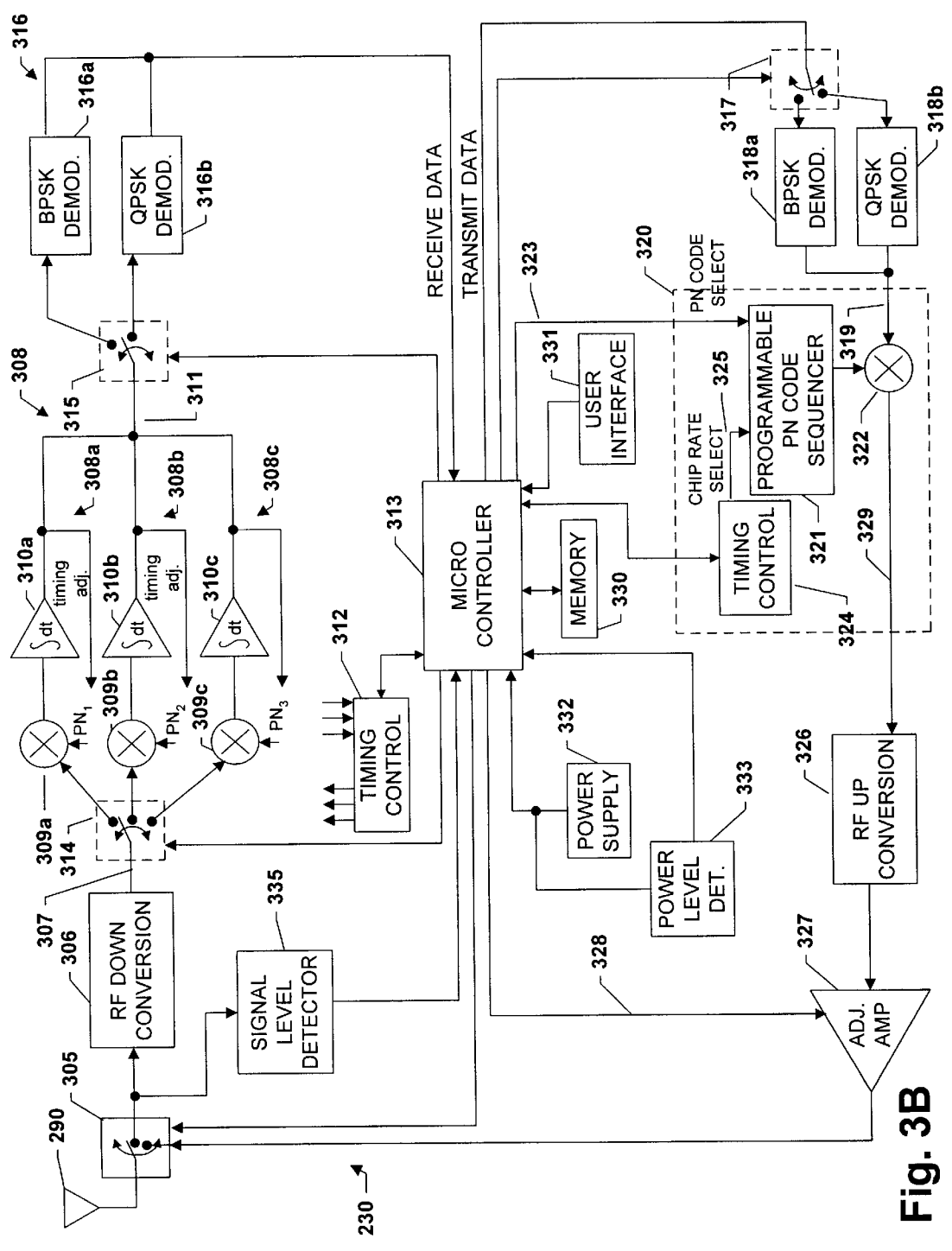


Fig. 4A



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