



US005659891A

# United States Patent [19]

[11] Patent Number: **5,659,891**

Hays et al.

[45] Date of Patent: **Aug. 19, 1997**

[54] **MULTICARRIER TECHNIQUES IN BANDLIMITED CHANNELS**

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[73] Assignee: **Mobile Telecommunication Technologies,** Jackson, Miss.

47 C.F.R. § 22.106 (1994).

[21] Appl. No.: **480,718**

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*Assistant Examiner*—Lee Nguyen  
*Attorney, Agent, or Firm*—Finnegan, Henderson, Farabow, Garrett and Dunner

[22] Filed: **Jun. 7, 1995**

### [57] ABSTRACT

[51] Int. Cl.<sup>6</sup> ..... **H04B 1/02**

A method of multicarrier modulation using co-located transmitters to achieve higher transmission capacity for mobile paging and two-way digital communication in a manner consistent with FCC emission mask limits. Co-location of the transmitters obviates the need for stringent, symmetrical subchannel interference protection and provides for a wider range of operating parameters, including peak frequency deviation, bit rate, and carrier frequencies, to obtain optimal transmission performance.

[52] U.S. Cl. .... **455/103; 455/45; 370/339; 370/343**

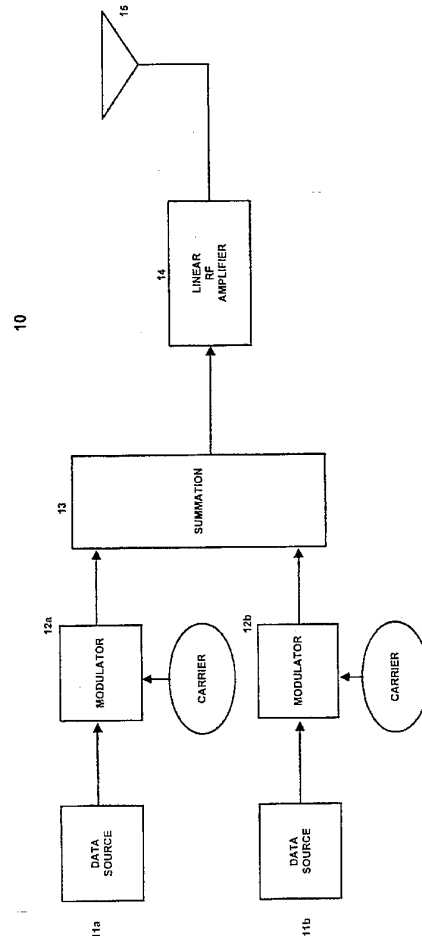
[58] **Field of Search** ..... 455/103, 104, 455/17, 46, 59, 60, 61, 62, 49.1, 45; 375/260; 370/69.1, 70, 38, 40, 121; 340/825.44

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**5 Claims, 11 Drawing Sheets**



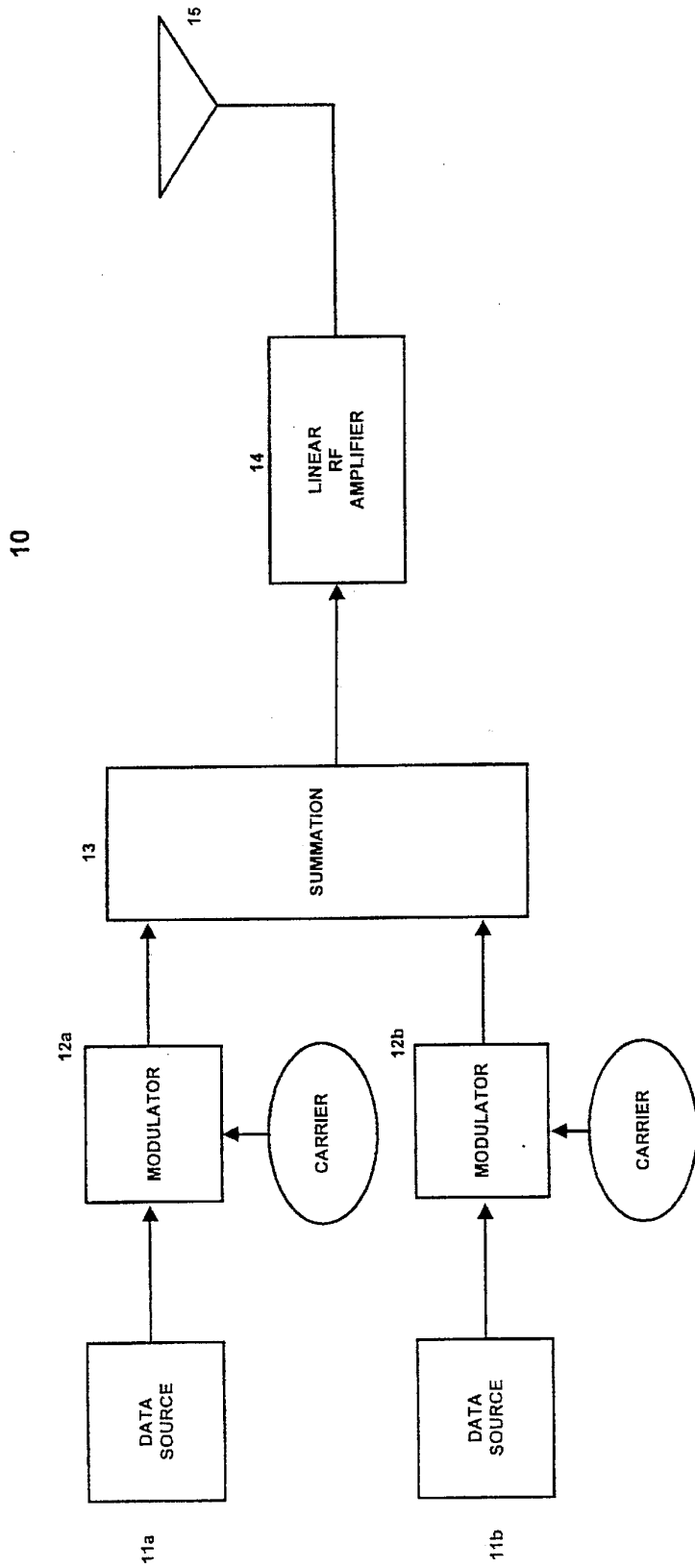


FIGURE 1

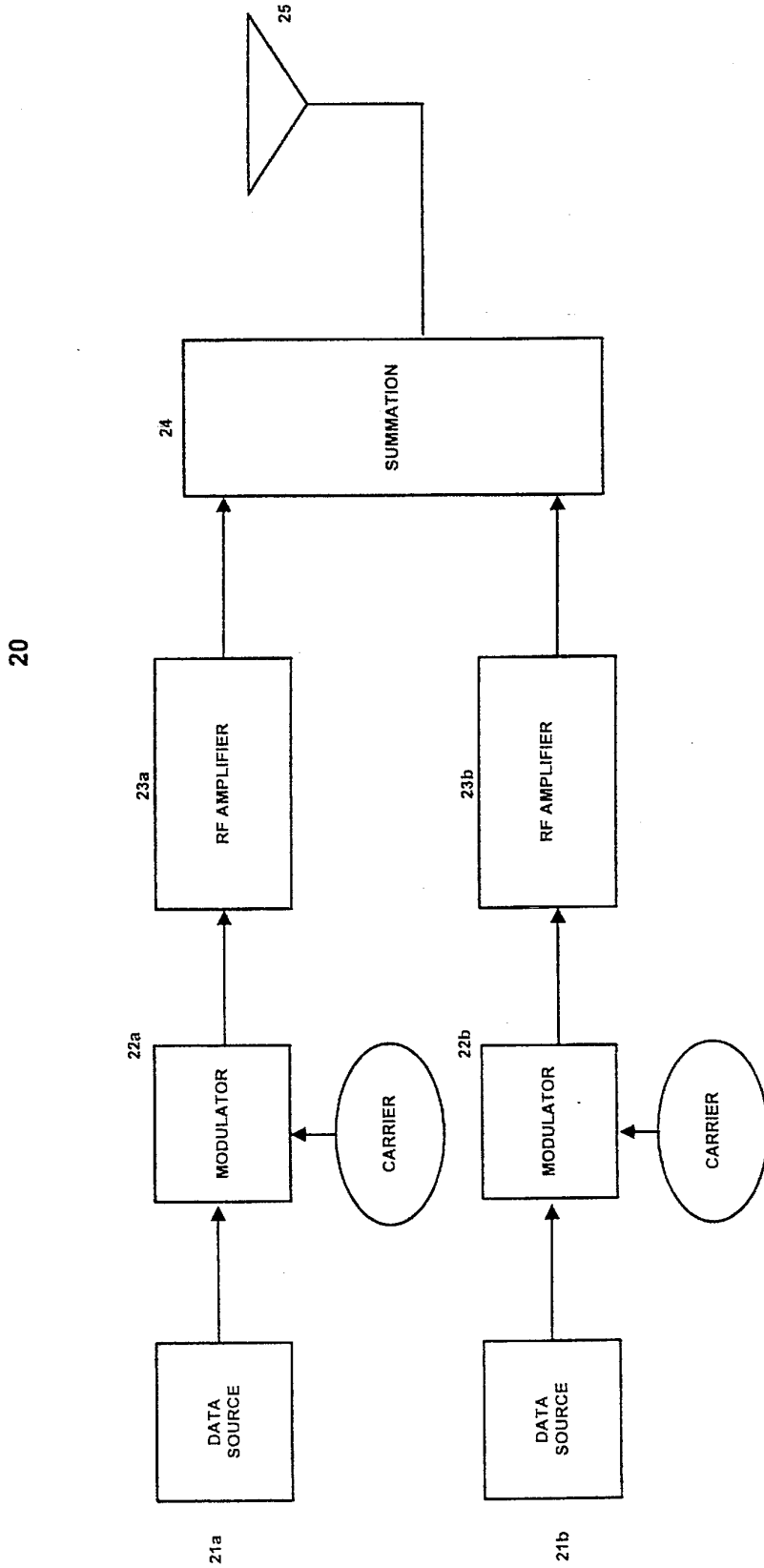


FIGURE 2

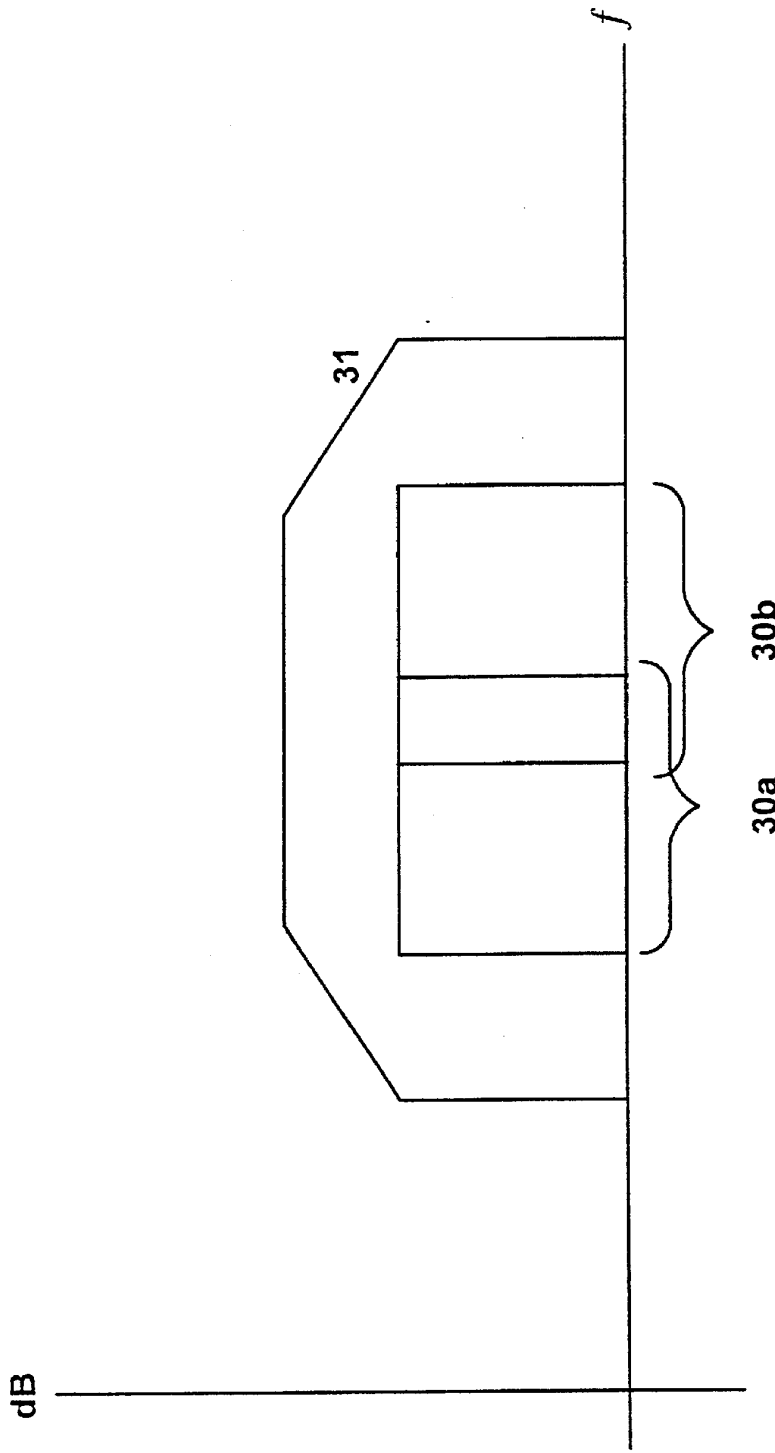


FIGURE 3A

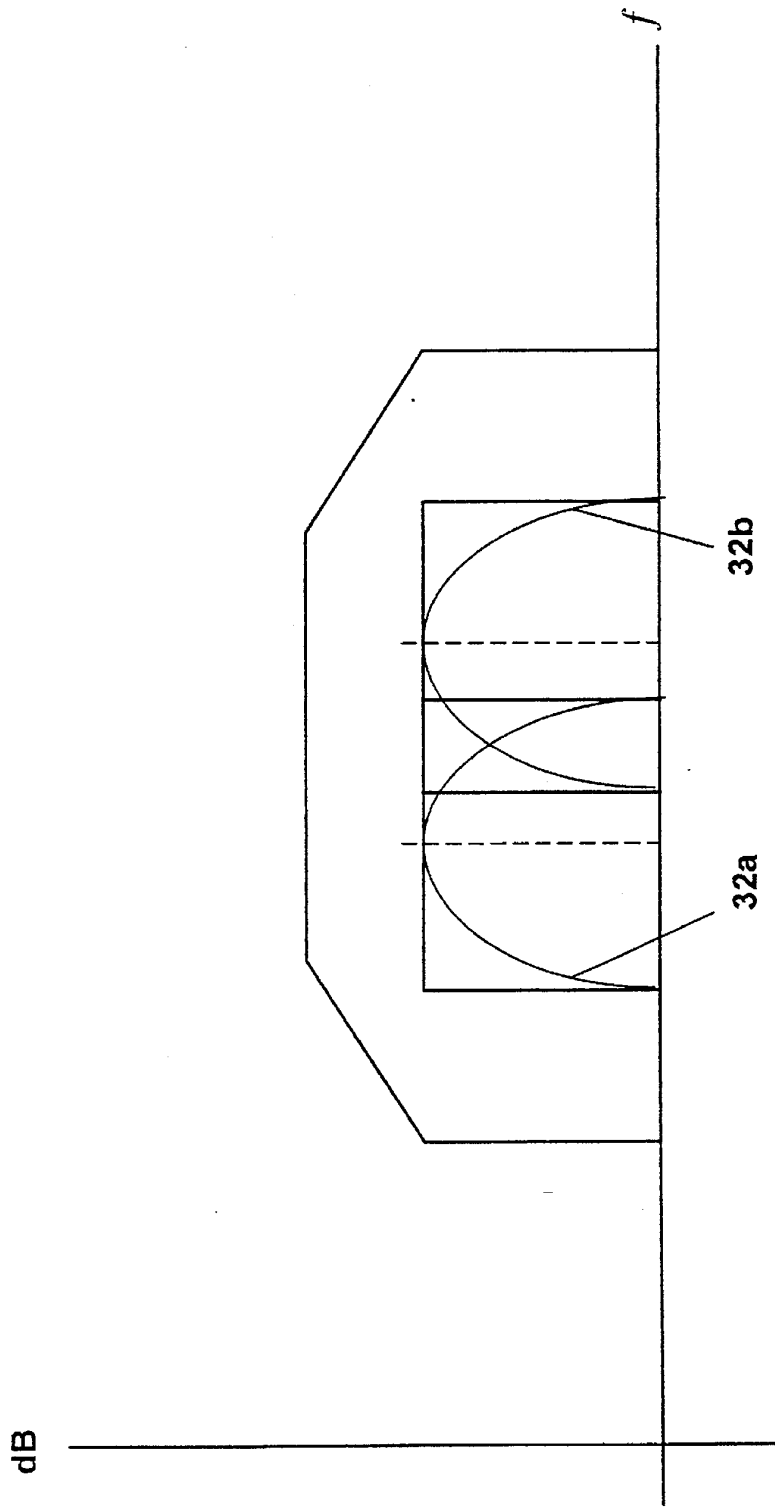


FIGURE 3B

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