

(12) **United States Patent**
Zyren

(10) **Patent No.:** **US 6,377,608 B1**
(45) **Date of Patent:** **Apr. 23, 2002**

(54) **PULSED BEACON-BASED INTERFERENCE REDUCTION MECHANISM FOR WIRELESS COMMUNICATION NETWORKS**

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* 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 0 days.

(74) *Attorney, Agent, or Firm*—Gary R. Stanford

(57) **ABSTRACT**

(21) Appl. No.: **09/163,802**

A repetitively pulsed beacon based mechanism prevents interference between wireless communication devices of users of a band wireless local area network WLAN, and wireless communication devices of ad hoc networks using the same ISM band. A beacon generator is installed in the vicinity of an access point of the WLAN infrastructure, and generates a wireless beacon in a portion of the ISM band that does not overlap that portion used by the WLAN. A beacon responsive radio control mechanism, installed in each ad hoc radio, monitors the beacon channel for the presence of the wireless beacon. In response to detecting the beacon, the radio control mechanism adjusts the operation of its ad hoc radio, to avoid simultaneous use of the same portion of the ISM band as the WLAN. In one example, the ad hoc radio is adjusted so that it transmits within a selected portion of the ISM band other than that used by the WLAN.

(22) Filed: **Sep. 30, 1998**

(51) **Int. Cl.**⁷ **H04K 1/00**

(52) **U.S. Cl.** **375/132**

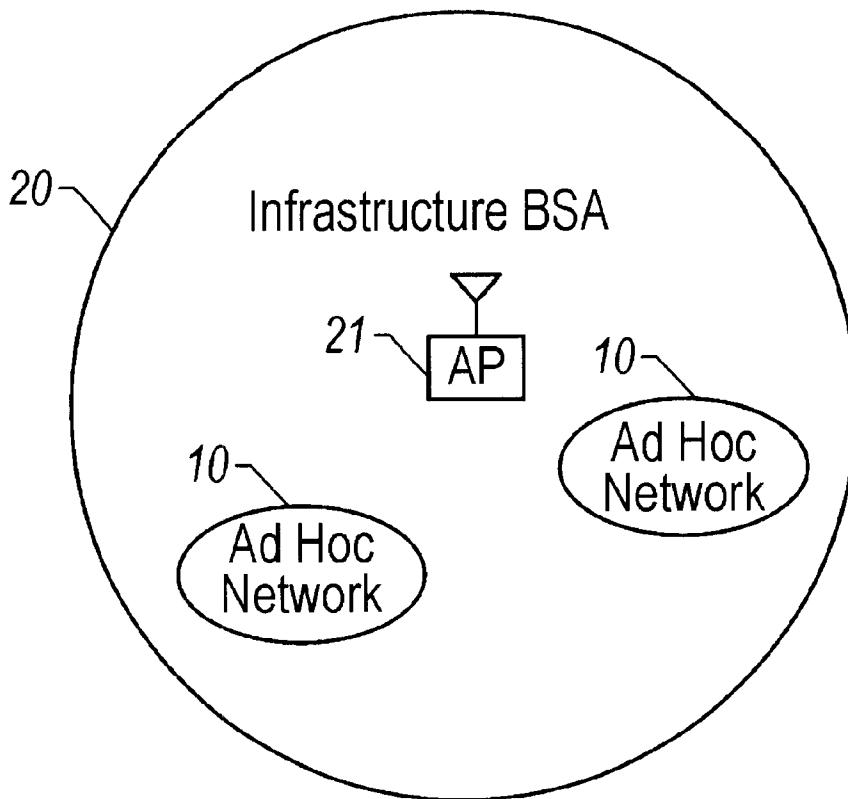
(58) **Field of Search** 375/130, 132, 375/140, 141, 220; 370/320, 335, 342, 441, 479; 455/403, 418, 434, 440, 456, 462, 556, 515, 501, 524, 63, 67.3

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44 Claims, 6 Drawing Sheets



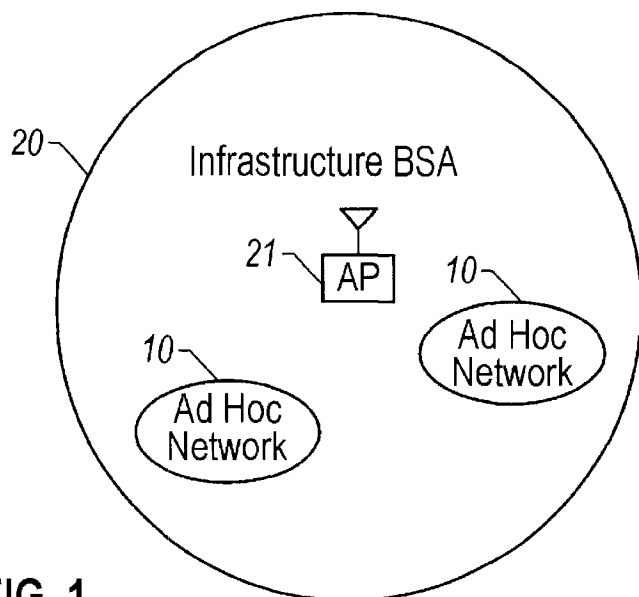


FIG. 1

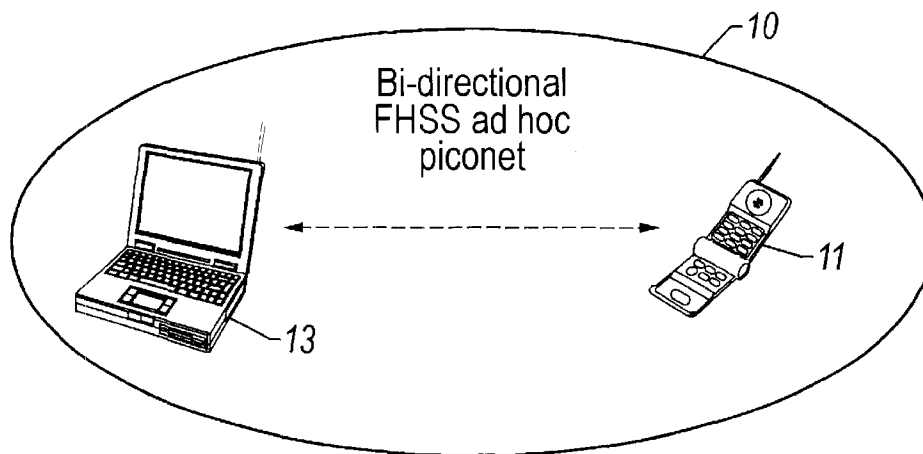


FIG. 2

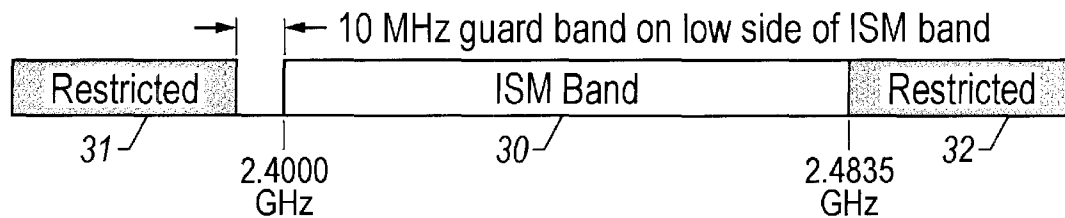


FIG. 3

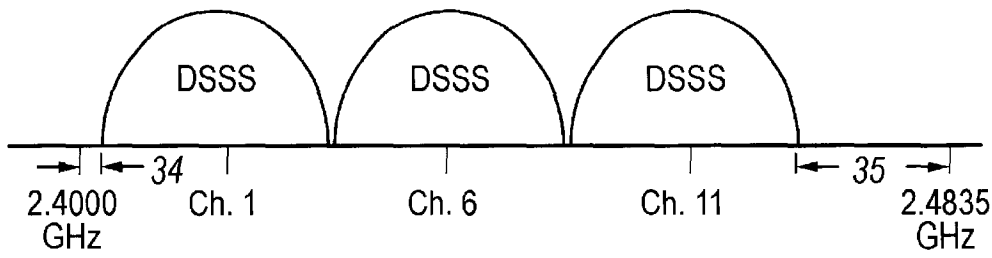


FIG. 4

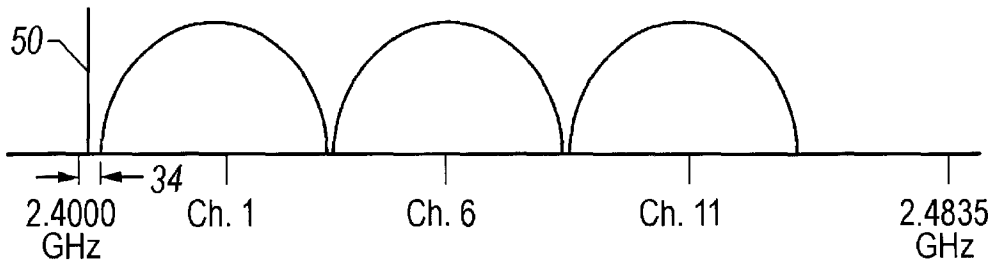


FIG. 5

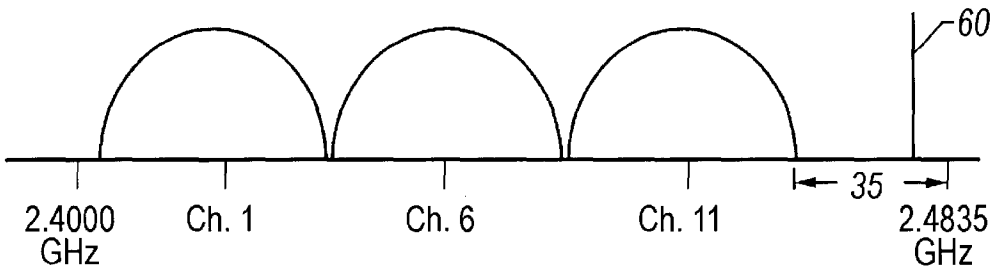


FIG. 6

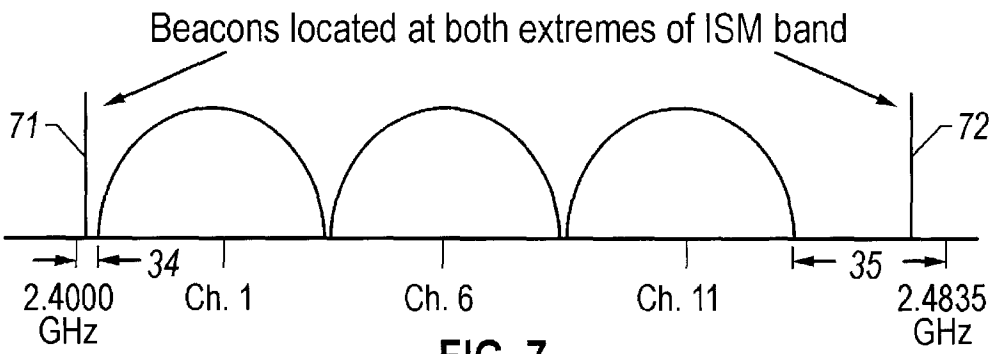


FIG. 7

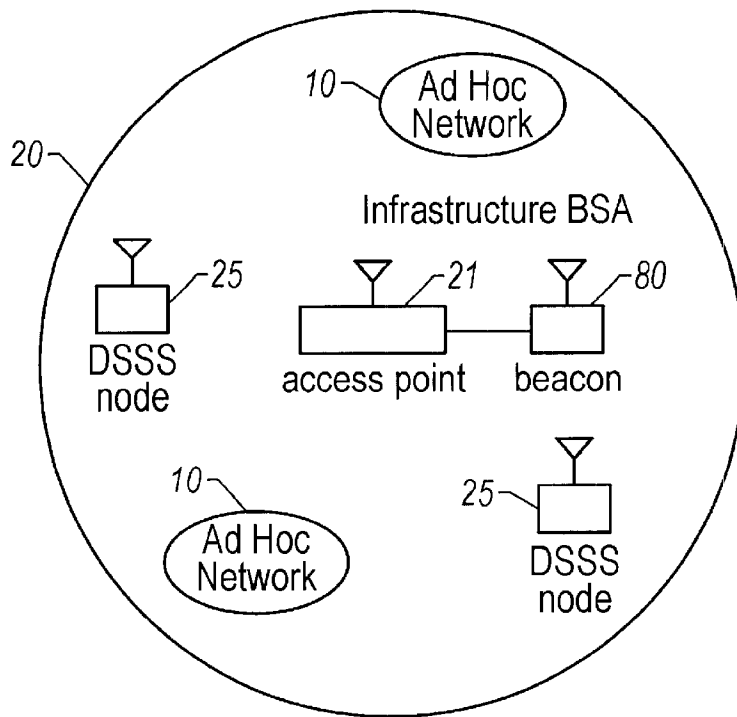


FIG. 8

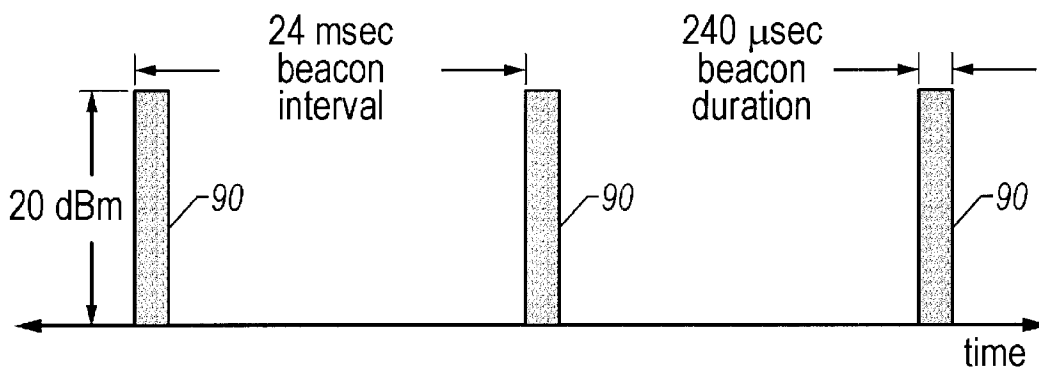


FIG. 9

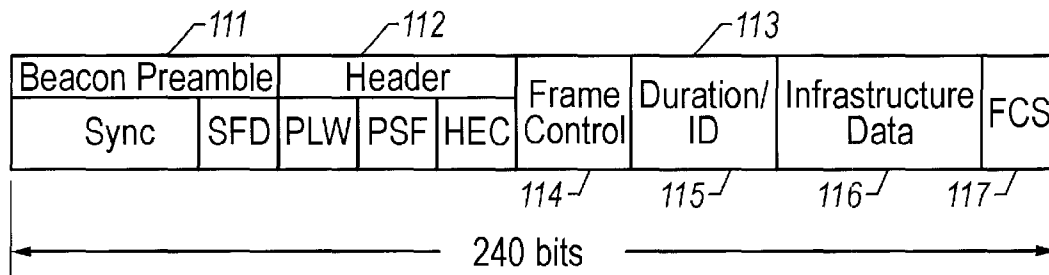


FIG. 10

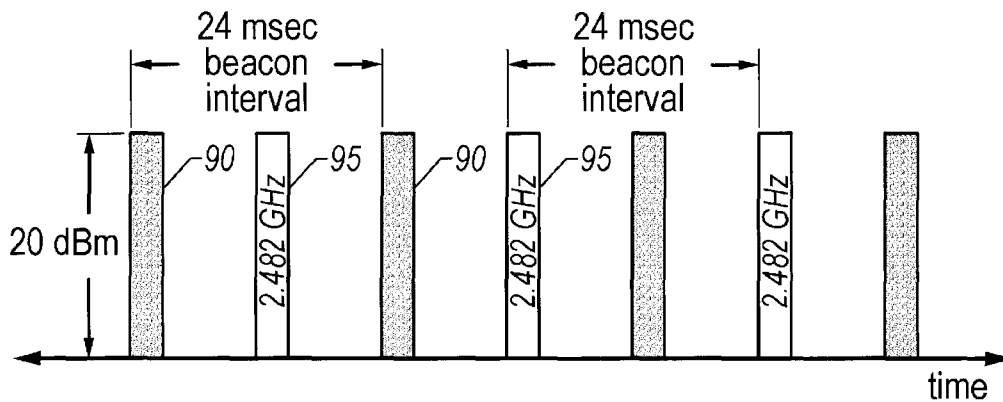


FIG. 11

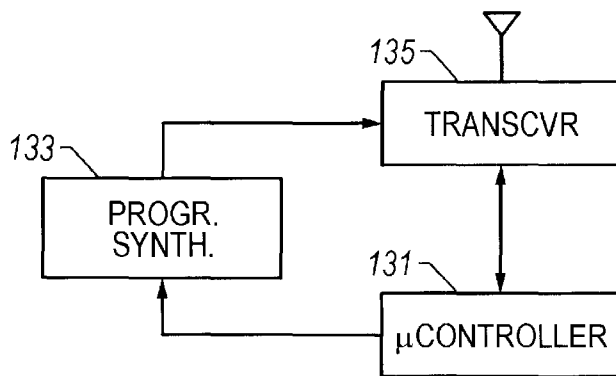


FIG. 12

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