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Webster et al.

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(54) **DUAL PACKET CONFIGURATION FOR WIRELESS COMMUNICATIONS**

(75) Inventors: **Mark A. Webster**, Melbourne Beach, FL (US); **Steven D. Halford**, Palm Bay, FL (US); **Richard D. Roberts**, Palm Bay, FL (US)

(73) Assignee: **Conexant, Inc.**, Red Bank, NJ (US)

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(51) **Int. Cl.**
H04J 9/00 (2006.01)

(52) **U.S. Cl.** **370/204**; 370/338; 370/341

(58) **Field of Classification Search** 370/310, 370/321, 328, 329, 330, 431, 436, 468, 478, 370/482, 483, 485, 203, 204, 206, 335, 342, 370/349, 338, 341; 375/298, 130, 133, 140, 375/141, 260, 261; 455/452
See application file for complete search history.

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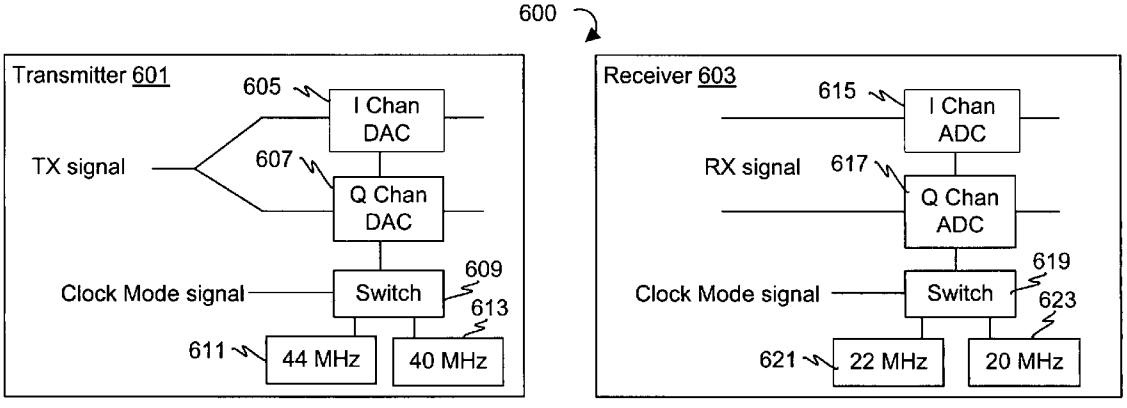
Primary Examiner—Huy D. Vu
Assistant Examiner—Jason Mattis
(74) *Attorney, Agent, or Firm*—Thomas, Kayden, Horstemeyer & Risley, LLP

(57) **ABSTRACT**

A dual packet configuration for wireless communications including a first portion that is modulated according to a serial modulation and a second portion that is modulated according to a parallel modulation. The serial modulation may be DSSS whereas the parallel modulation may be OFDM. The first portion may include a header, which may further include an OFDM mode bit and a length field indicating the duration the second portion. The first portion may be in accordance with 802.11b to enable dual mode devices to coexist and communicate in the same area as standard 802.11b devices. The dual mode devices can communicate at different or higher data rates without interruption from the 802.11b devices. The packet configuration may include an OFDM signal symbol which further includes a data rate section and a data count section. In this manner, data rates the same as or similar to the 802.11a data rates may be specified between dual mode devices. The first and second portions may be based on the same or different clock fundamentals. For OFDM, the number of subcarriers, pilot tones and guard interval samples may be modified independently or in combination to achieve various embodiments. Also, data subcarriers may be discarded and replaced with pilot tones for transmission. The receiver regenerates the discarded data based on received data, such as using ECC techniques.

43 Claims, 12 Drawing Sheets



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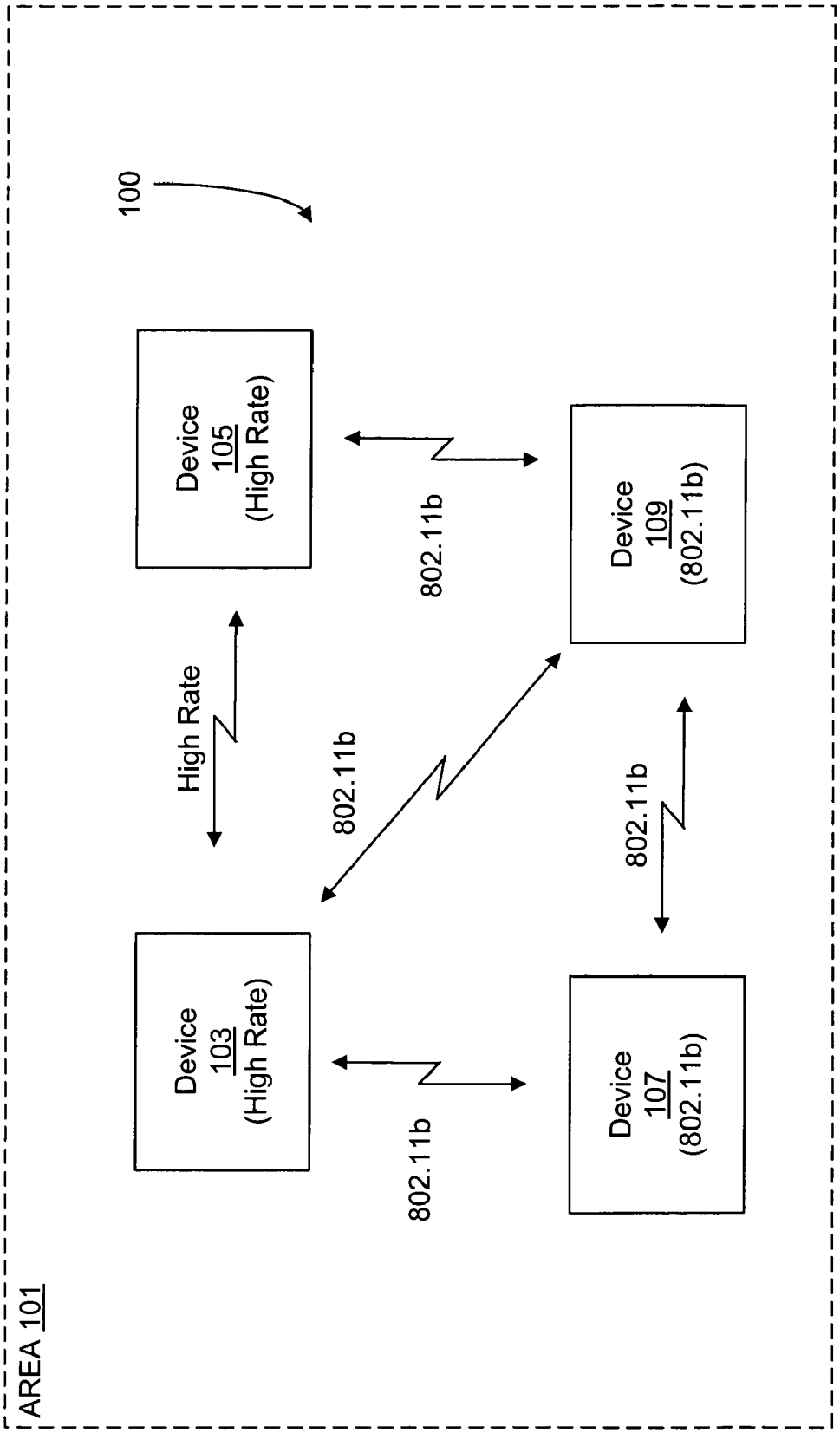

FIG. 1

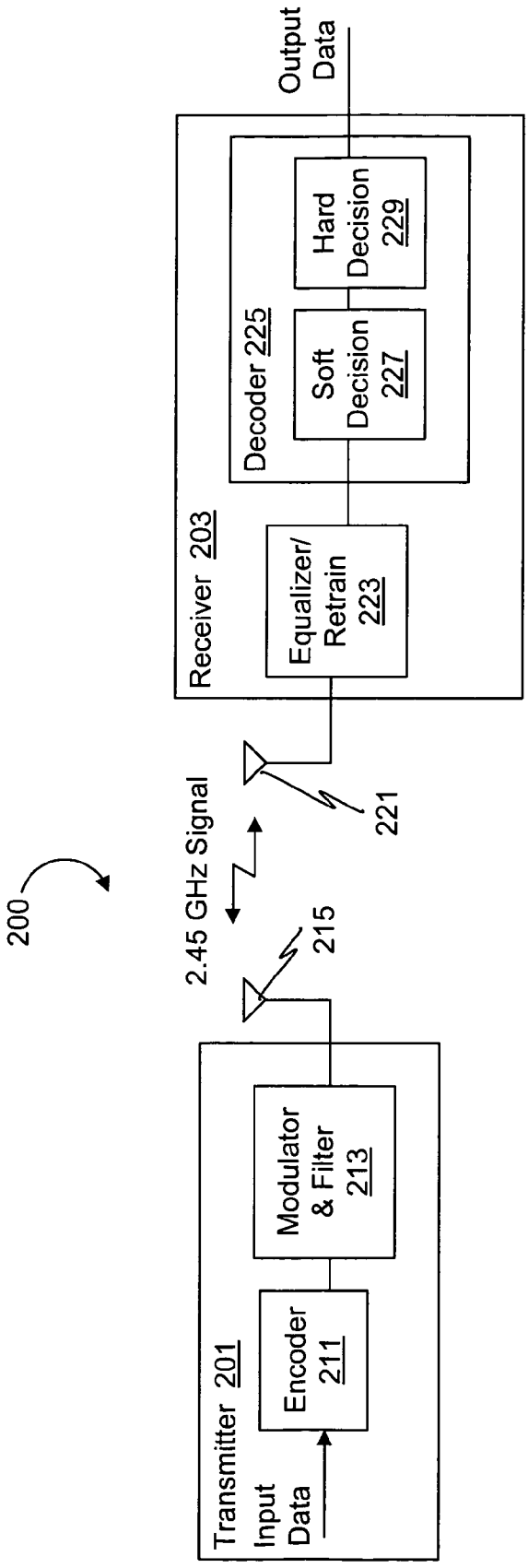

FIG. 2

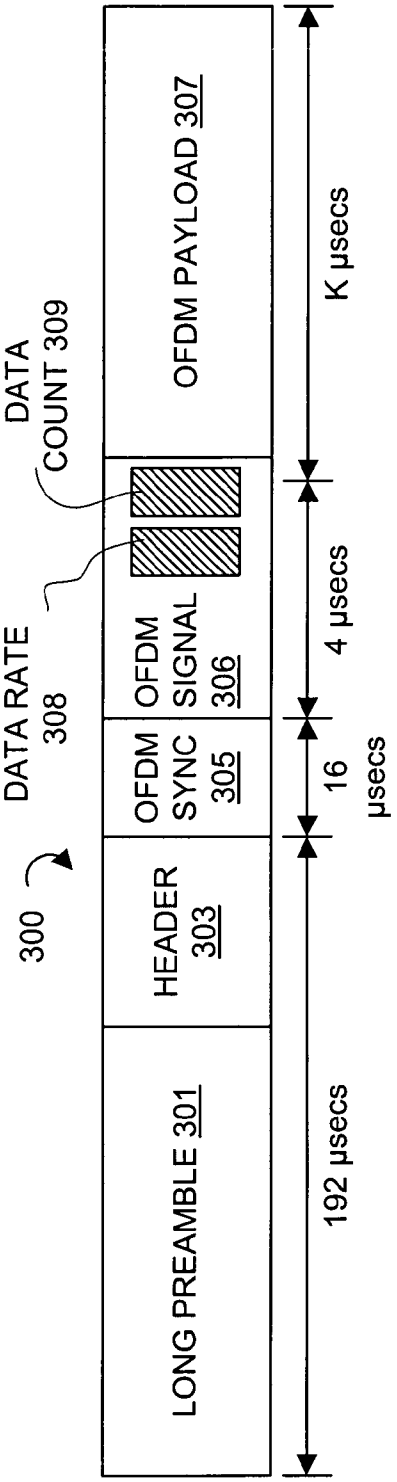

FIG. 3A

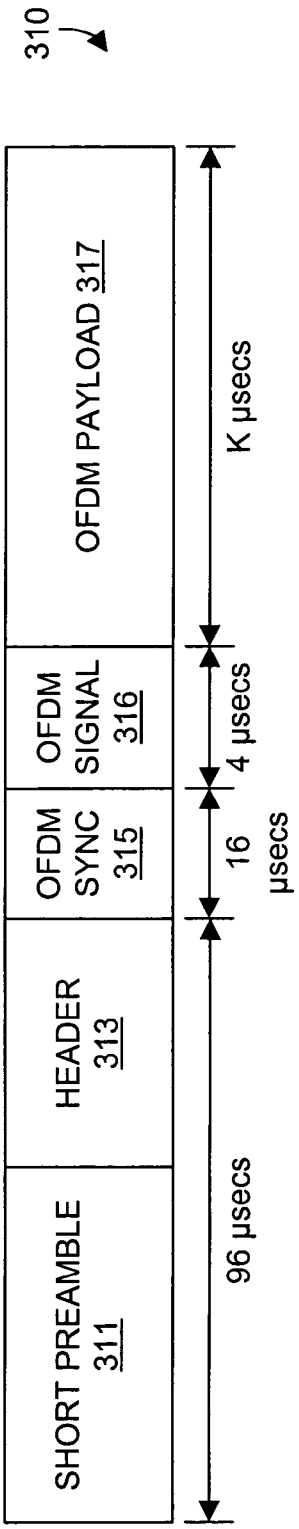

FIG. 3B

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