



(12) **United States Patent**
Abrol

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(54) **RADIO LINK PROTOCOL ENHANCEMENTS FOR DYNAMIC CAPACITY WIRELESS DATA CHANNELS**

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(73) Assignee: **Qualcomm Incorporated**, San Diego, CA (US)

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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.

TIA/EIA-707-A.8 "Data Service Options for Spread Spectrum Systems: Radio Link Protocol Type 2" pp. i-section 4-12 (Mar. 1999).

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(21) Appl. No.: **09/321,296**

Primary Examiner—Steven Nguyen

(22) Filed: **May 27, 1999**

Assistant Examiner—Phuongchau Ba Nguyen

(51) **Int. Cl.**⁷ **H04L 12/28**; H04B 7/212

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(52) **U.S. Cl.** **370/394**; 370/252; 370/335; 370/342

(57) **ABSTRACT**

(58) **Field of Search** 370/246, 389, 370/252, 392, 393, 465, 473, 474, 475, 394, 335, 342; 348/384; 345/132, 153; 714/782, 701

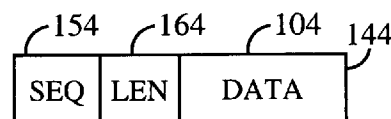
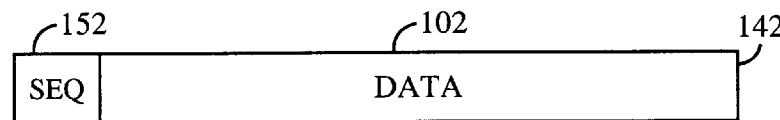
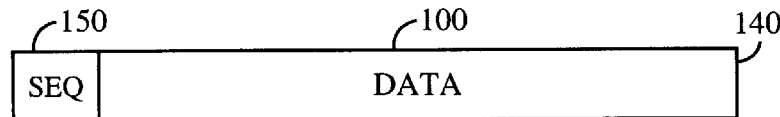
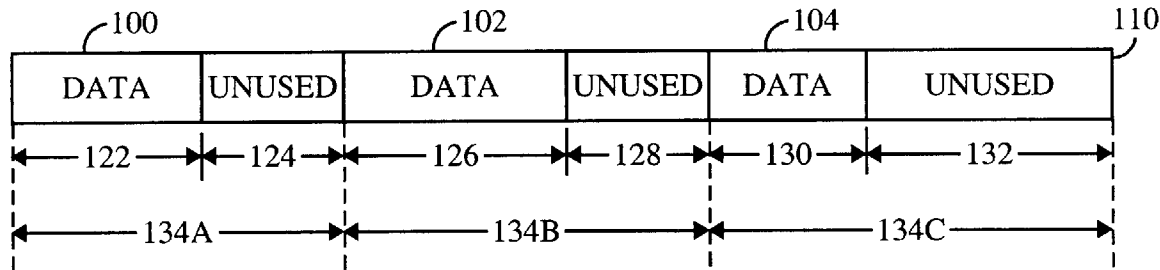
An improved method and system for transmitting a stream of data bytes through a channel whose capacity may change during transmission. By utilization of selective regions of sequence number space, the enhanced radio link protocol (RLP) provides the benefits of large byte sequence numbers while transmitting a fraction of the sequence number bits in the majority of over-the-air frames. Frame header sequence numbers are shortened by dividing the byte sequence number by a page size, and by performing a modulo function on the byte sequence number.

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12 Claims, 6 Drawing Sheets



MICROSOFT CORP.
EXHIBIT 1007

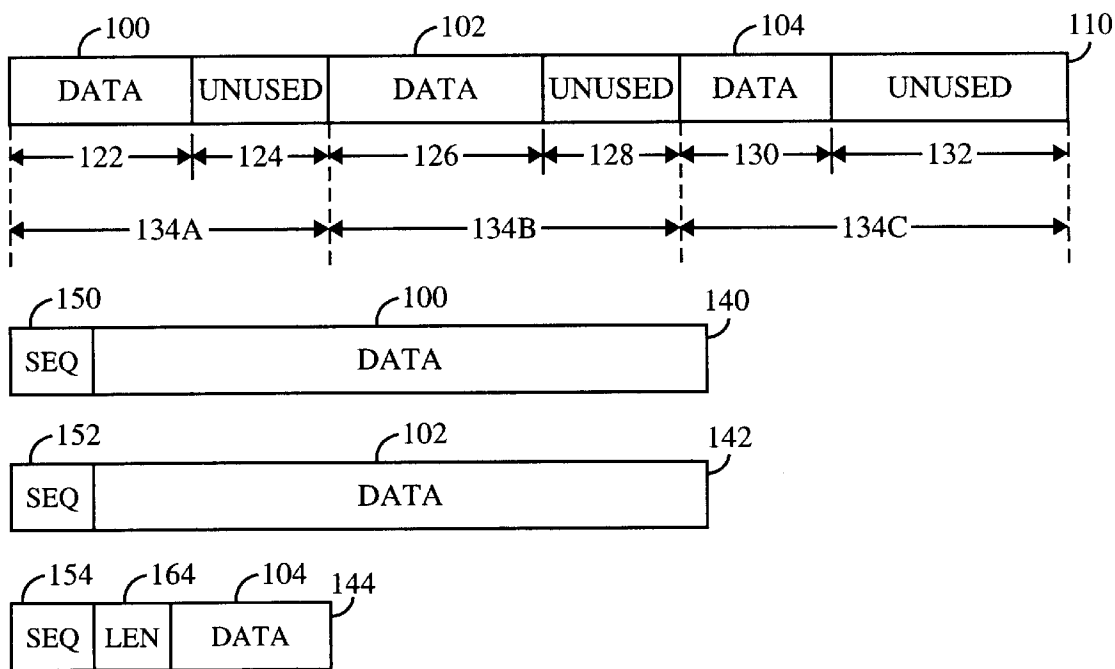


FIG. 1

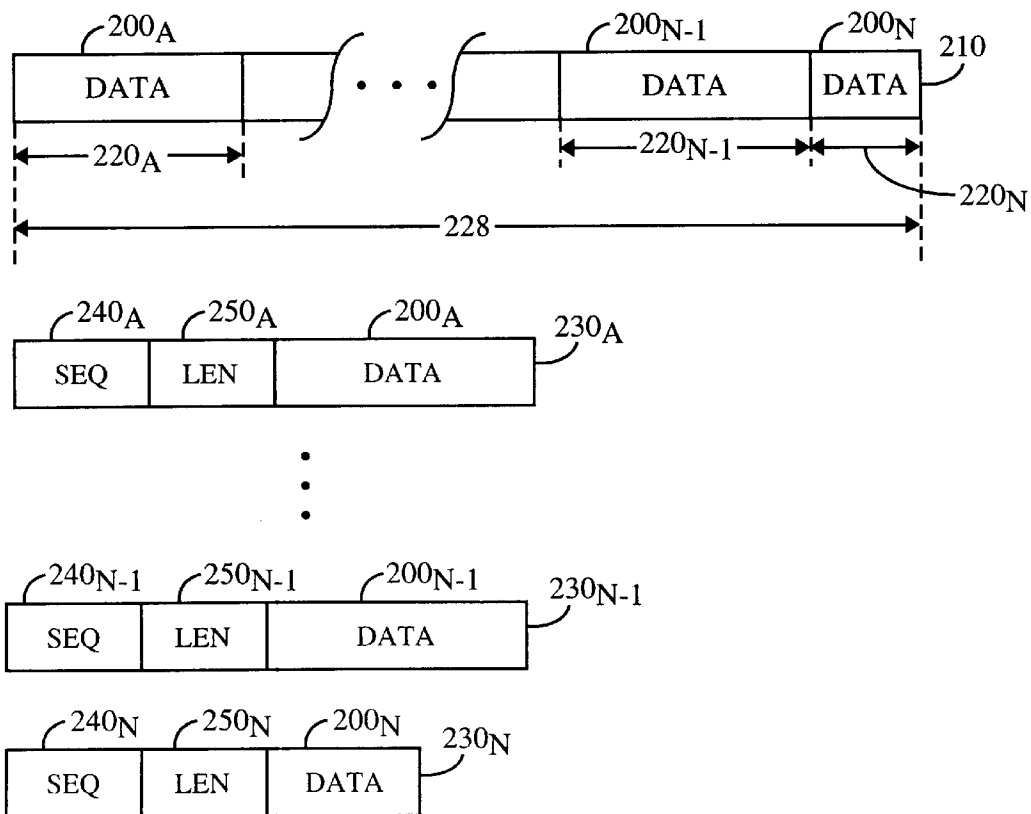


FIG. 2

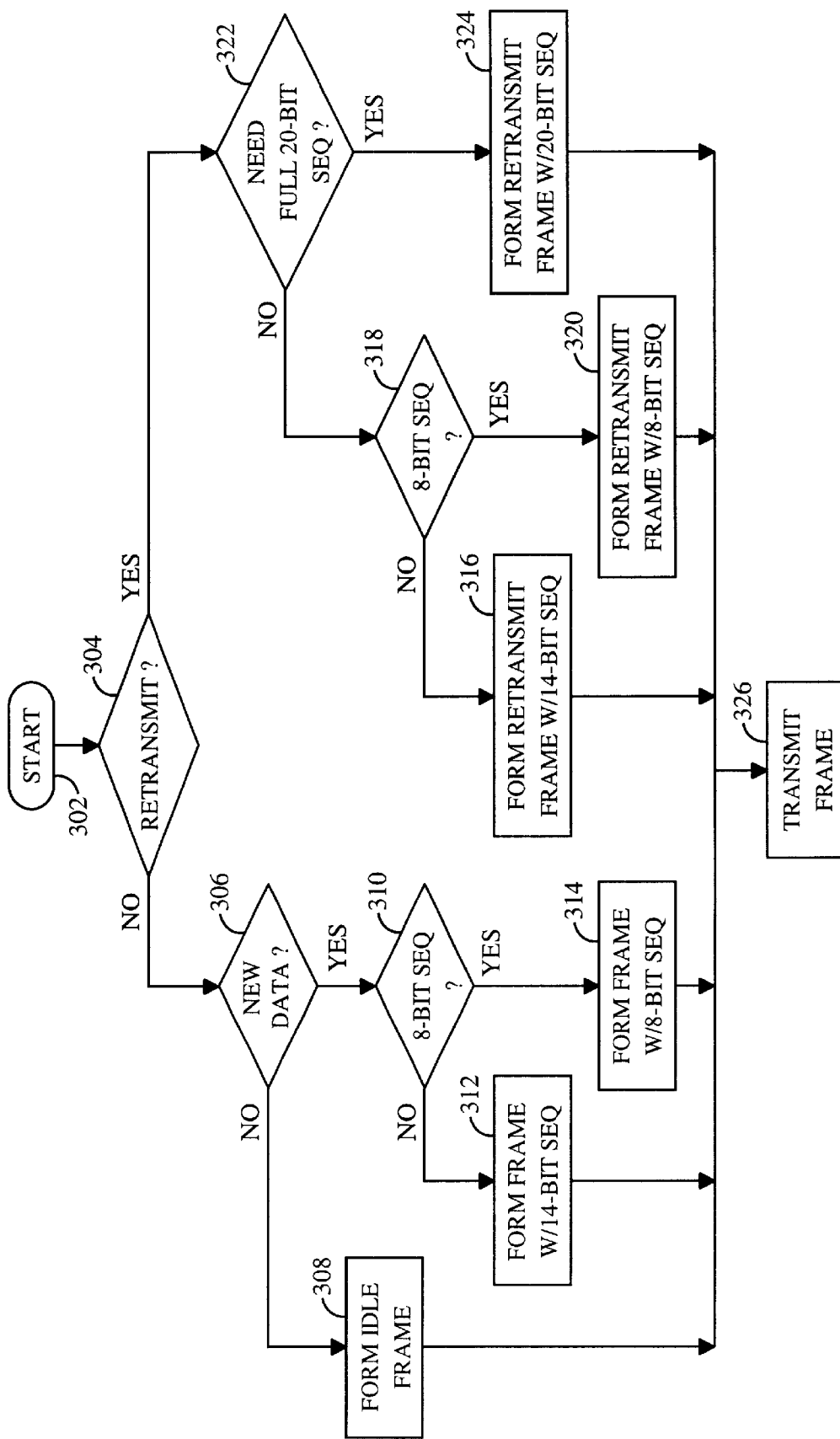


FIG. 3

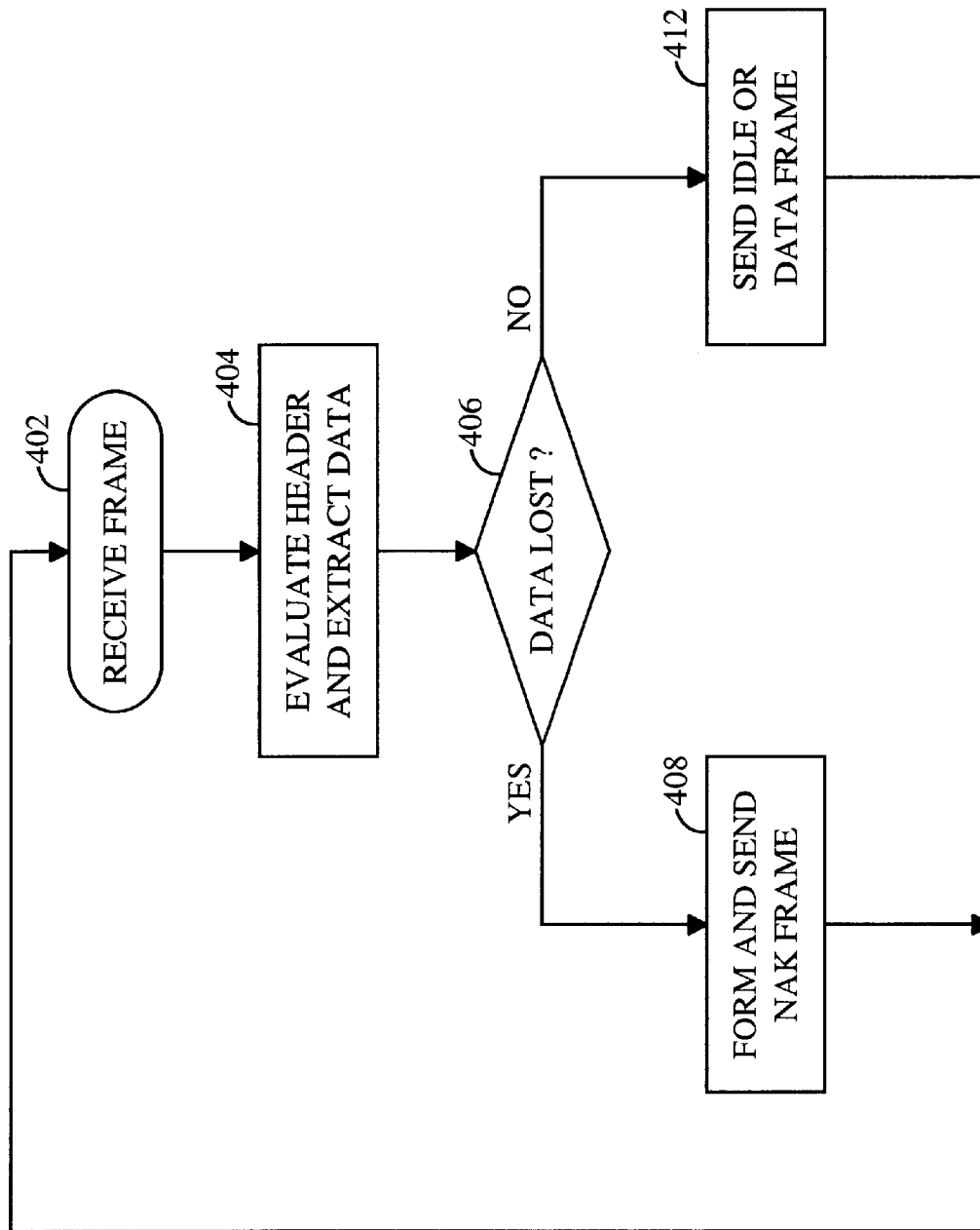


FIG. 4

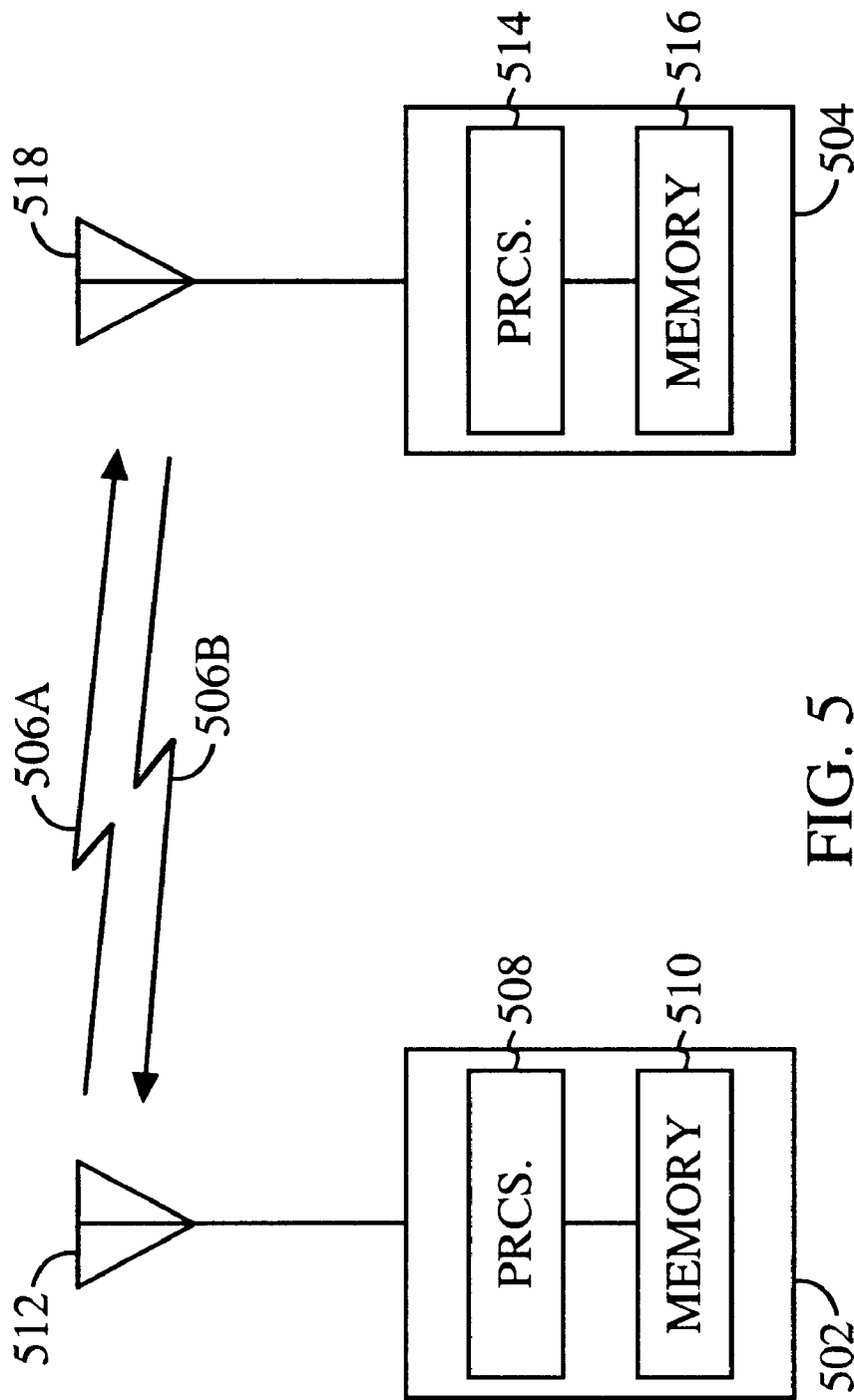


FIG. 5

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