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Schultz et al.

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(54) **METHOD FOR MINIMIZING TIME CRITICAL TRANSMIT PROCESSING FOR A PERSONAL COMPUTER IMPLEMENTATION OF A WIRELESS LOCAL AREA NETWORK ADAPTER**

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(51) **Int. Cl.**
H04Q 7/24 (2006.01)

(52) **U.S. Cl.** **370/338; 370/349**

(58) **Field of Classification Search** **370/389, 370/394, 338, 349, 401, 465, 474**

See application file for complete search history.

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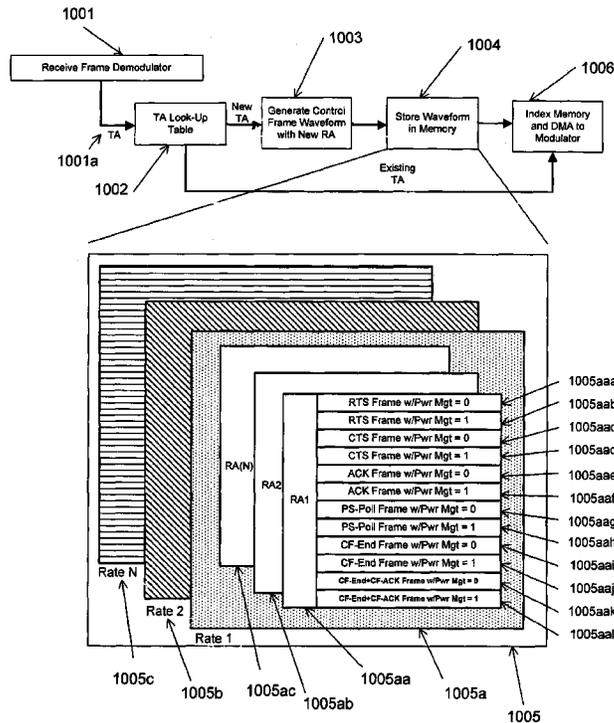
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(57) **ABSTRACT**

A personal computer's (PC) microprocessor is used to provide both the physical layer (PHY) and media access control (MAC) processing functions required to implement a wireless local area network (WLAN) adapter. This technique uses the microprocessor within the personal computer to pre-compute the time critical PHY waveforms required to respond to received packets. For instance, the acknowledge (ACK) waveform required to respond to a received WLAN packet is pre-computed and stored in the PC memory. Upon receipt of a valid packet, the samples of the ACK waveform are transferred from the PC memory to a digital to analog converter (DAC). The DAC generates the transmit waveform required for the radio modulator. By pre-computing the transmit waveform samples, the required loading on the PC microprocessor is reduced during time critical periods.

17 Claims, 10 Drawing Sheets



Software Driver Processing for Pre-Computed Control Frames