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United States Patent [19]

Kalkunte et al.

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[54] **APPARATUS AND METHOD FOR REGULATING ASSIGNED BANDWIDTH IN HIGH SPEED PACKET SWITCHED NETWORKS**

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[51] **Int. Cl.**[7] **H04L 12/413**

[52] **U.S. Cl.** **370/445**; 370/447; 370/448; 370/85.2; 370/85.6; 340/825.5

[58] **Field of Search** 370/910, 445, 370/447, 448, 446, 470, 508, 452, 413; 340/825.5

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(List continued on next page.)

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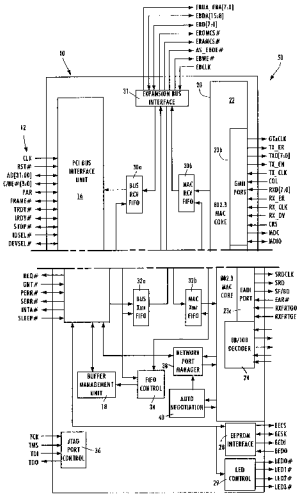
[57] **ABSTRACT**

A network interface for a shared gigabit Ethernet network selectively modulates an interpacket gap interval following a burst transmission in order to establish a rotating priority arrangement with network stations on the gigabit network. A network station includes a programmable burst timer that counts a burst interval corresponding to a negotiated bandwidth. The network station having accessed the media continues to transmit data packets so long as data is available in a transmit buffer, and the burst timer has not expired. Each data packet within the burst is transmitted after waiting a minimum interpacket gap interval of 96 bit times. Following the burst transmission, the network interface waits a modified delay interval equal to the minimum interpacket gap plus a multiple number of slot times related to the number of stations on the network. The modified delay interval is decremented by a slot time each time the network station detects a burst transmission by another network station. Each network station thus transmits a burst of data packets according to a negotiated bandwidth, and minimizes the number of encountered collisions by deferring to other network stations following a burst transmission.

19 Claims, 5 Drawing Sheets



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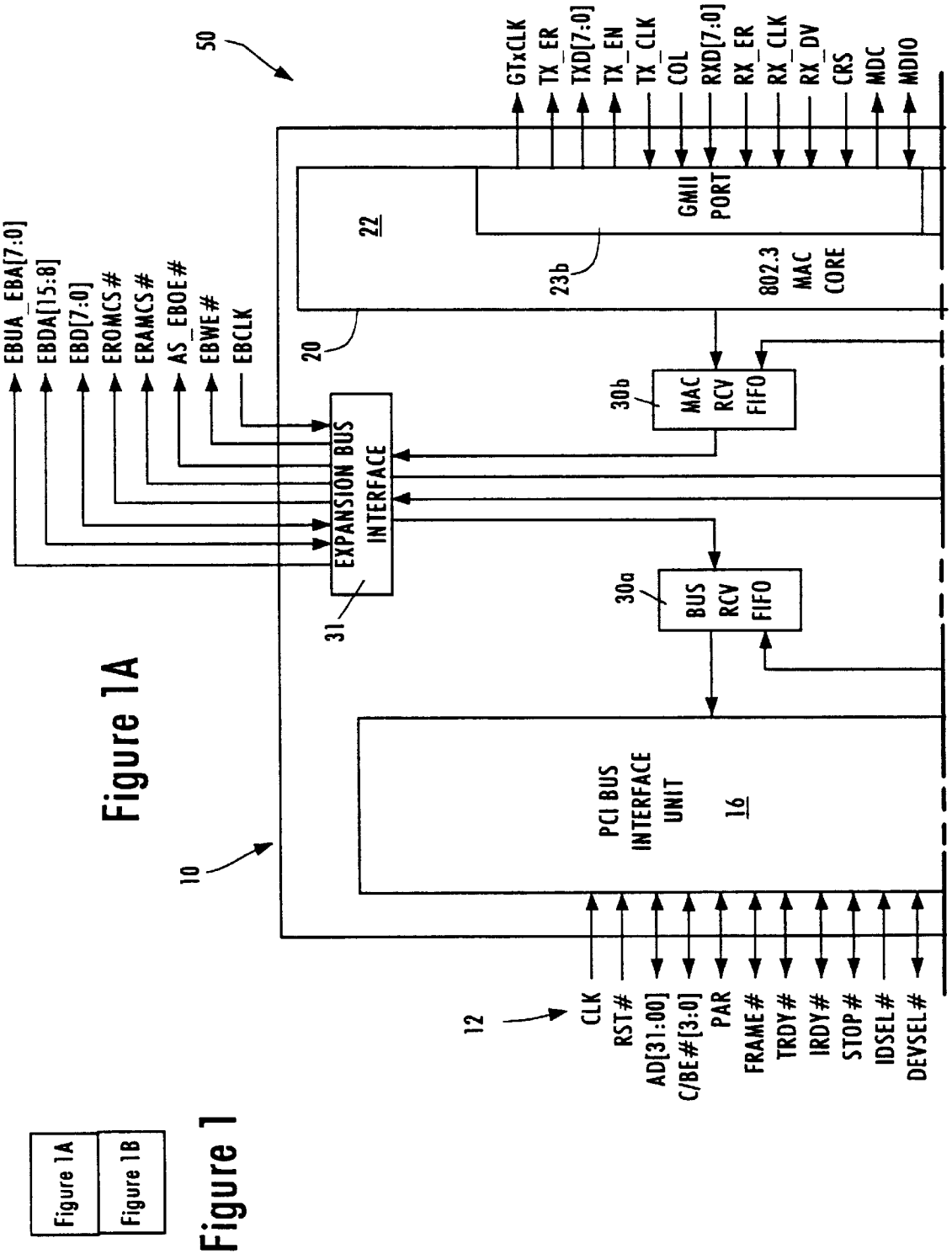


Figure 1A

Figure 1A
Figure 1B

Figure 1

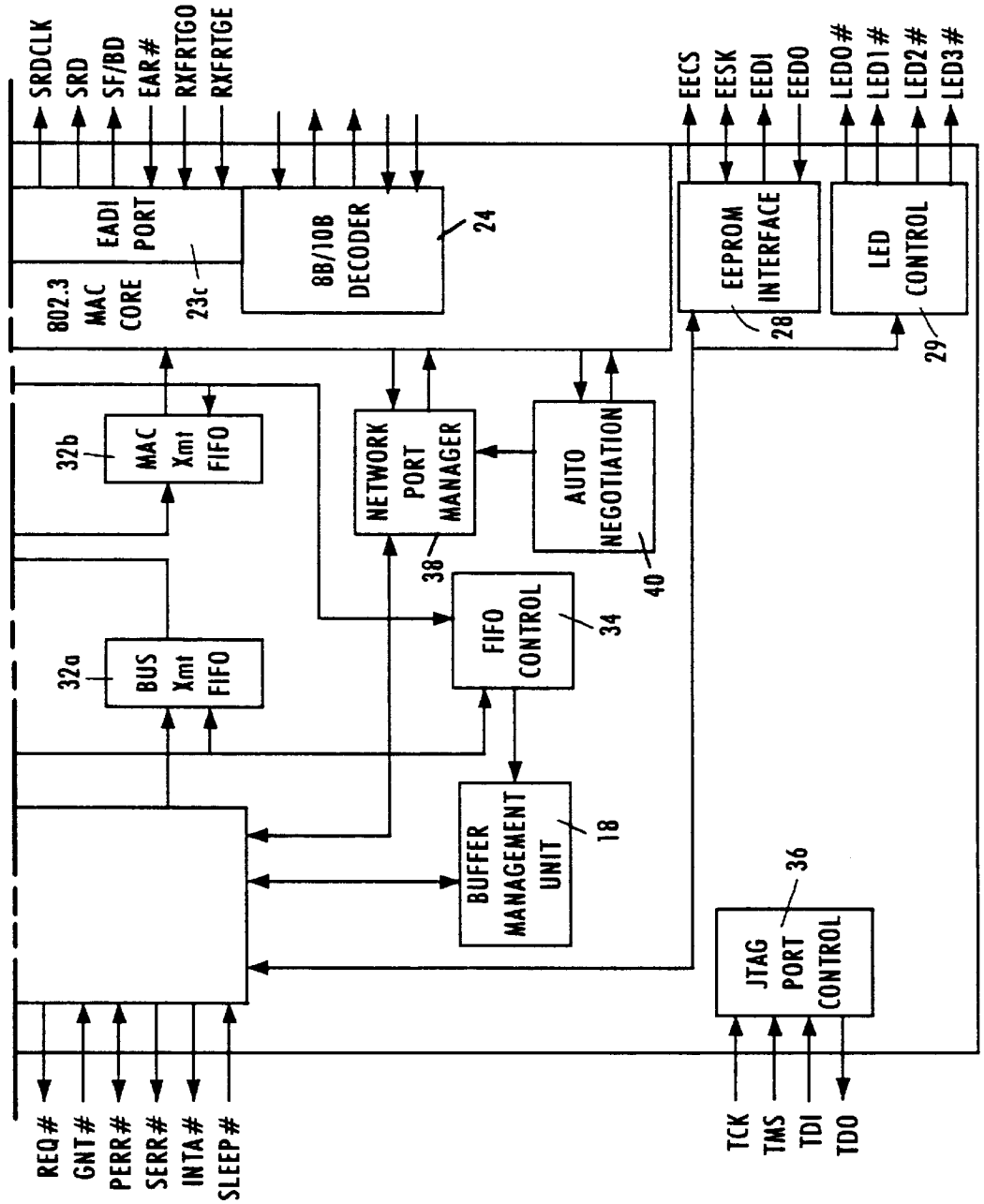
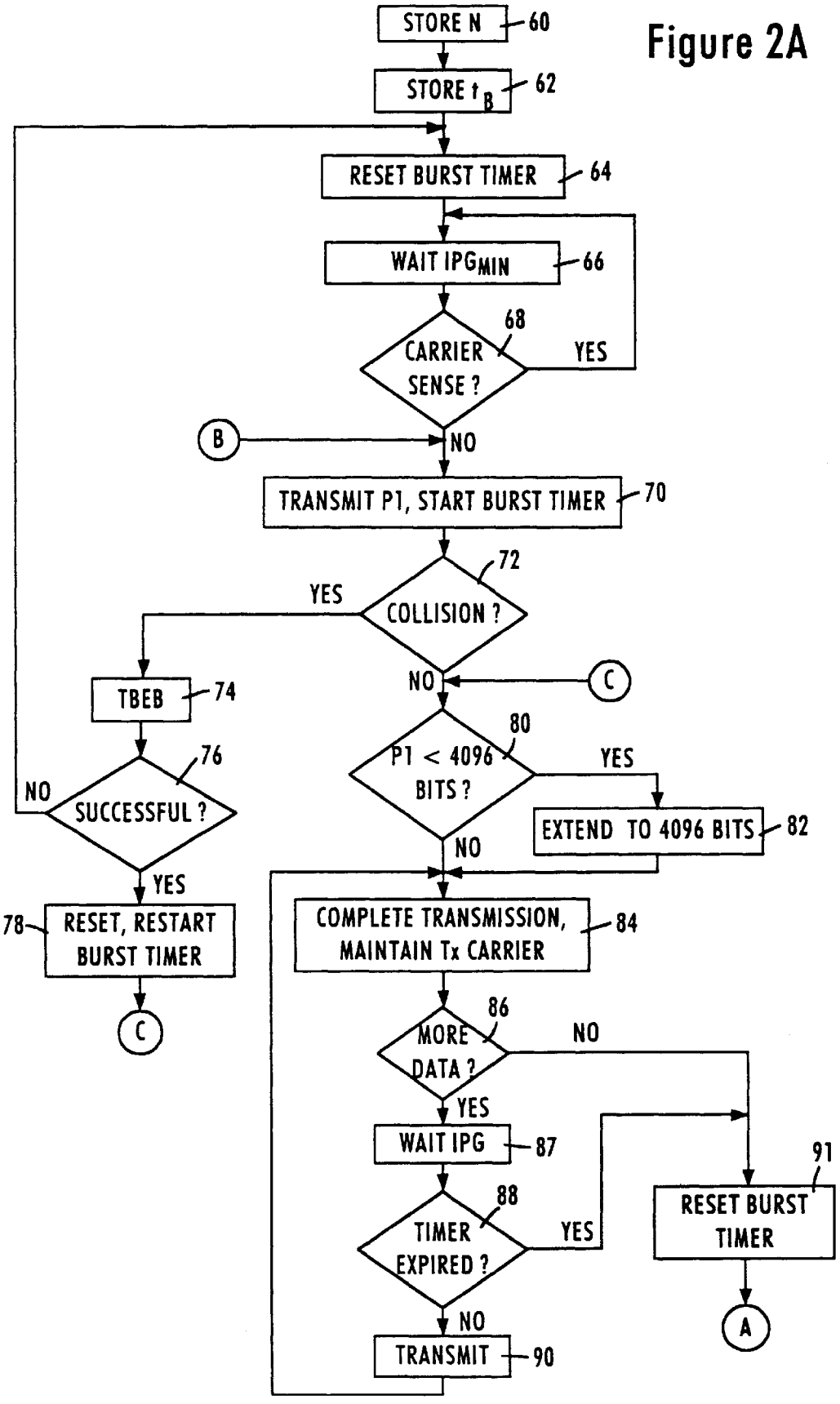


Figure 1B

Figure 2A



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