US006279057B1

(12) **United States Patent**
Westby

(10) **Patent No.: US 6,279,057 B1**
(45) **Date of Patent: Aug. 21, 2001**

(54) **COMMUNICATIONS SYSTEM HAVING DEDICATED FRAME BUFFERS LOCATED IN A CHANNEL NODE CONNECTED TO TWO PORTS OF THE CHANNEL NODE FOR RECEIVING FRAMES**

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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.

(21) Appl. No.: **09/193,681**

(22) Filed: **Nov. 17, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/065,920, filed on Nov. 17, 1997, provisional application No. 60/065,926, filed on Nov. 17, 1997, provisional application No. 60/065,919, filed on Nov. 17, 1997, and provisional application No. 60/067,211, filed on Dec. 1, 1997.

(51) **Int. Cl.**[7] **G06F 13/14**
(52) **U.S. Cl.** **710/52**; 710/7
(58) **Field of Search** 710/7, 52, 36–38; 709/236, 251; 370/400

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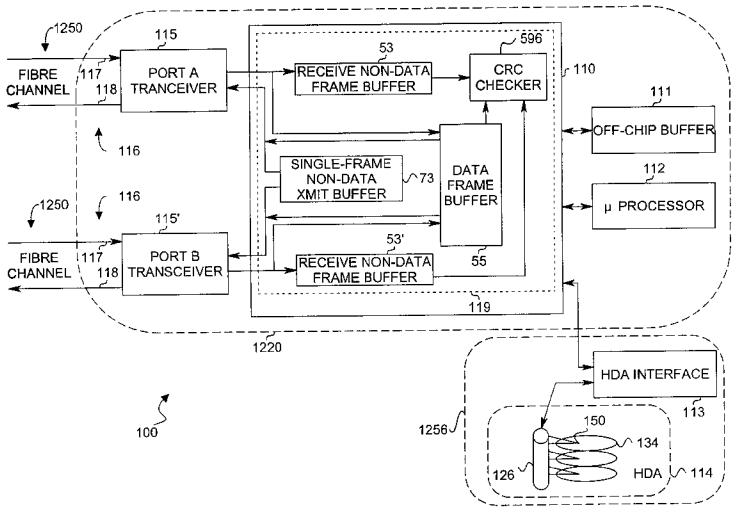
(57) **ABSTRACT**

Dedicated receive buffers for receiving non-data frames are provided for each port of a two-port node in a fibre-channel arbitrated-loop serial communications channel design. The improved communications channel system and method includes a channel node having dual ports each supporting a communications channel, both ports interfaced from a single interface chip, and a dedicated on-chip frame buffer located on the chip for receiving frames. The dedicated on-chip frame buffer includes two inbound non-data buffers, one coupled to each of two ports, wherein inbound non-data frames from each port are received into the respective inbound non-data buffer. The system further includes an off-chip buffer, wherein received non-data frames are received into one of the non-data-frame buffers and transferred from the non-data-frame buffer to the off-chip buffer. A data-frame buffer is operatively coupled to both ports to receive data frames from the ports, and move the data frames to the off-chip buffer. In addition, a method for receiving frames using the dedicated buffer is described.

22 Claims, 15 Drawing Sheets



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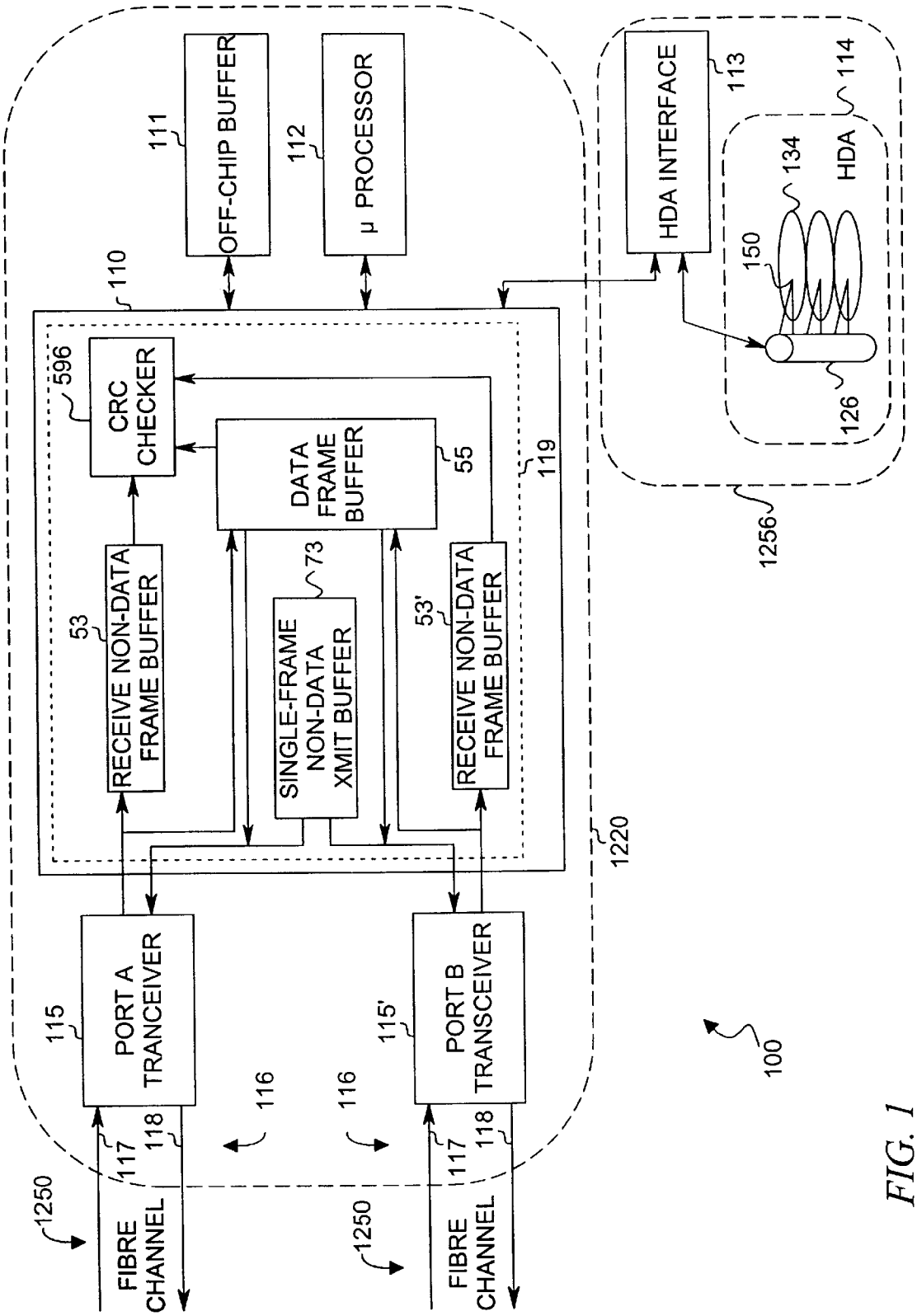

FIG. 1

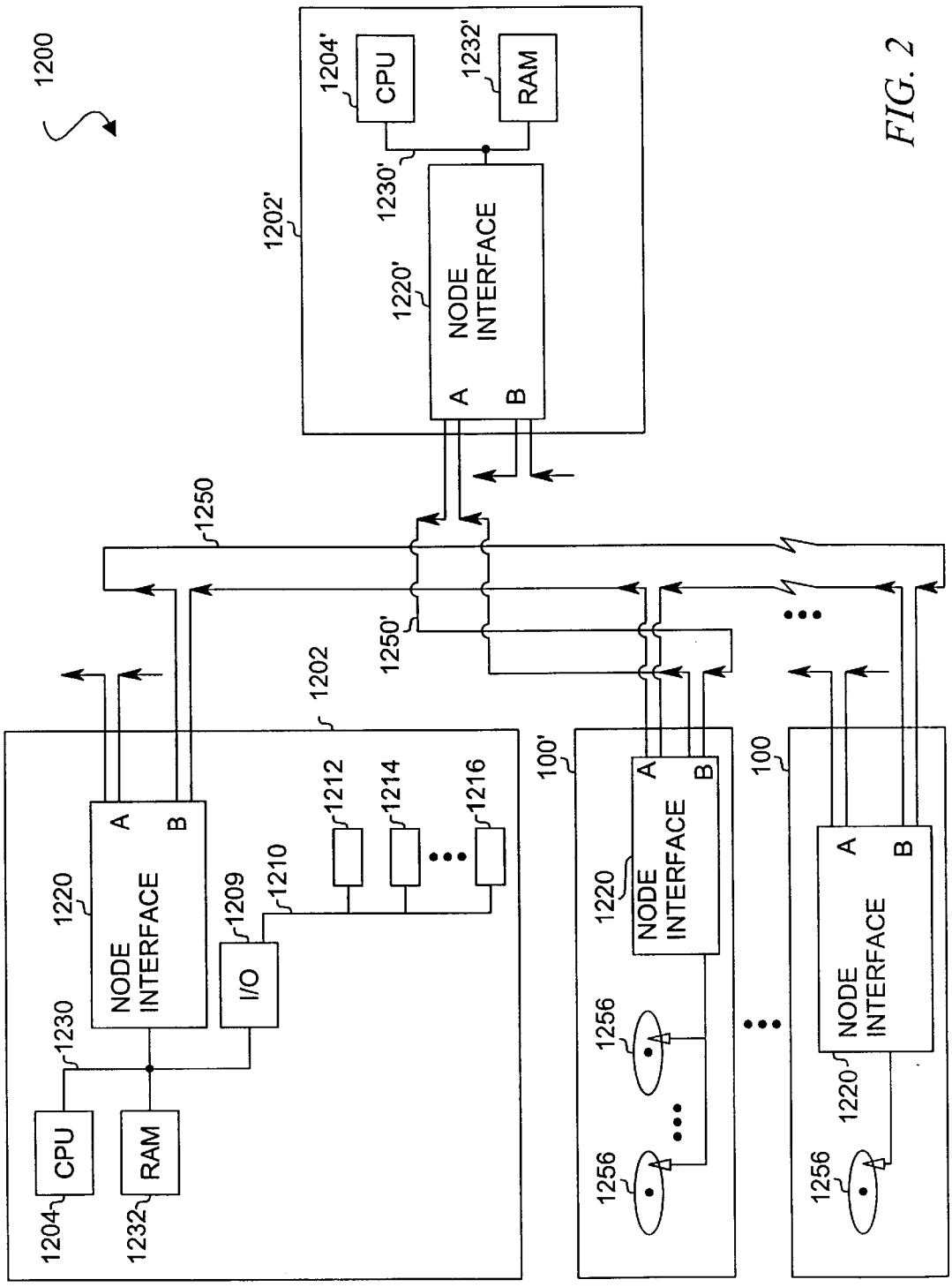

FIG. 2

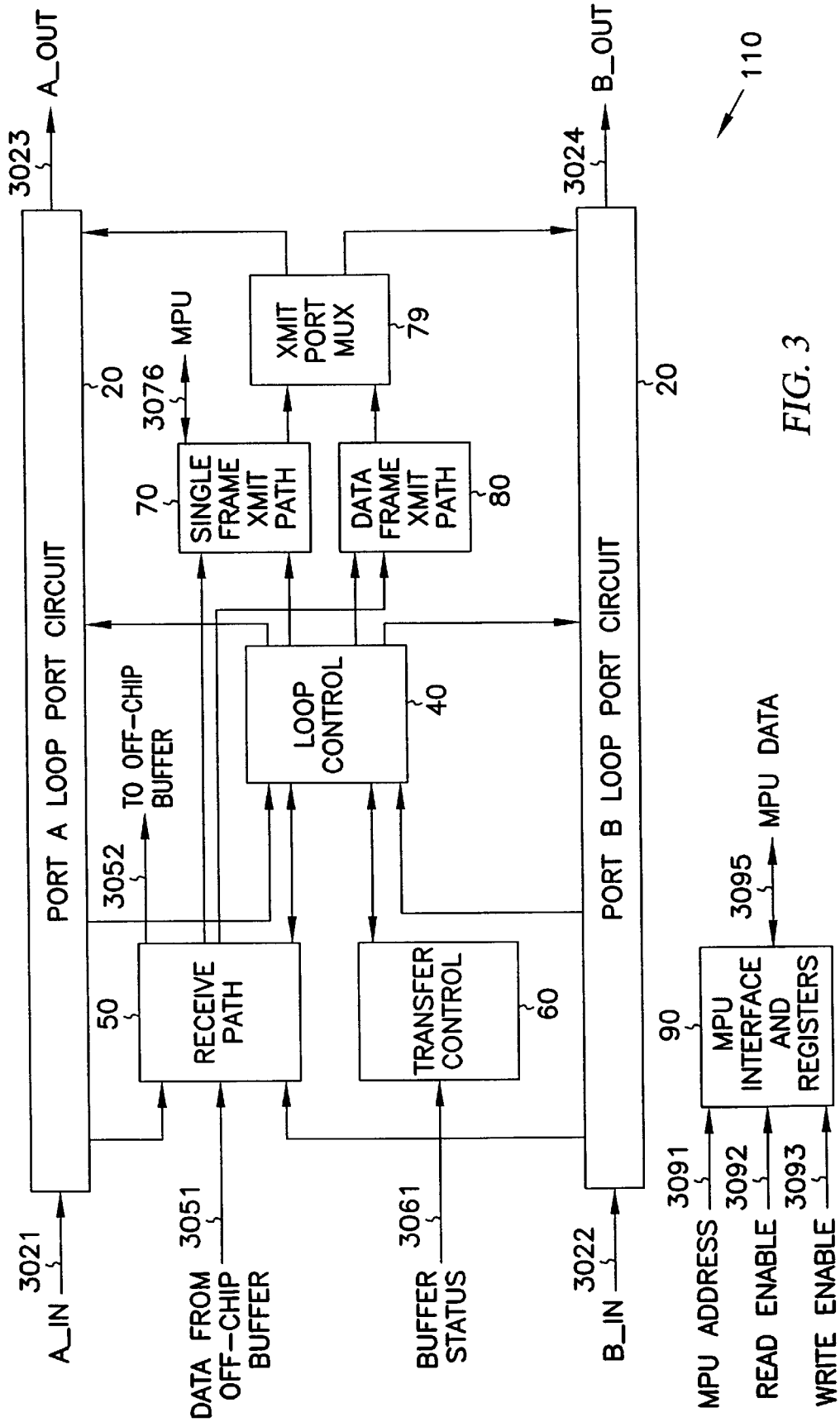

FIG. 3

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