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United States Patent [19]

[11] Patent Number: **5,889,818**

Spieß

[45] Date of Patent: ***Mar. 30, 1999**

[54] **ADAPTIVE DISPLAY REFRESH AND DATA COMPRESSION IN A RADIO FREQUENCY ENVIRONMENT**

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5,300,931	4/1994	Lindsay et al.	341/106

[75] Inventor: **Gary N. Spiess**, Lisbon, Iowa

[73] Assignee: **Norand Corporation**, Cedar Rapids, Iowa

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,592,512.

Primary Examiner—Amanda Le

[21] Appl. No.: **536,814**

[57] ABSTRACT

[22] Filed: **Sep. 29, 1995**

An adaptive display refresh and data compression solution for use in an RF network environment is described, where a network controller and portable terminals maintain an adaptive history of commonly used past information in order that it may be repeated quickly and communication speeds can be increased. A network controller maintains a separate history for each of the terminals in the RF network, and transmits a coded reference for the activities that are contained in the history, which is stored in the memory of both the controller and the portable terminal. Terminals and the controller additionally may negotiate to determine the data compression features which will be supported in communication between the two devices. Data is compressed according to the present invention by utilizing a hybrid run length and sliding dictionary compression scheme. Data is pre-compressed by a run length compressor, and is further compressed by a specialized sliding dictionary technique designed to minimize memory storage and transmission time requirements, resulting in an efficient data compression method requiring little additional storage.

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 270,239, Jul. 1, 1994, Pat. No. 5,592,512, which is a continuation-in-part of Ser. No. 265,712, Jun. 24, 1994, abandoned.

[51] Int. Cl.⁶ **H03M 7/30**

[52] U.S. Cl. **375/240**; 341/51; 341/55; 341/87; 341/106

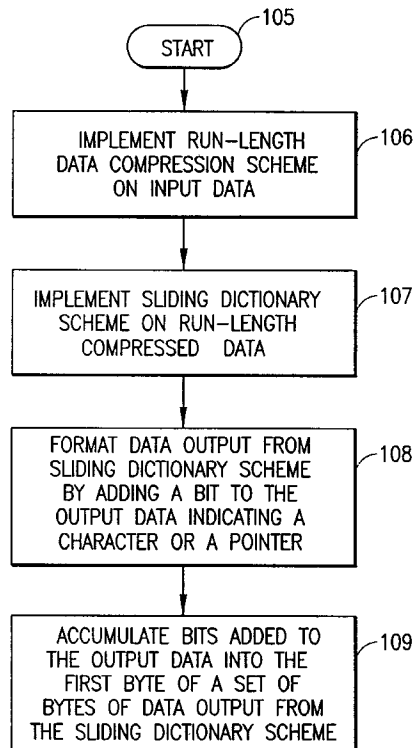
[58] Field of Search 375/240, 259, 375/377; 341/51, 55, 59, 63, 67, 87, 95, 99, 106, 107; 358/426, 261.1, 261.2, 261.4; 348/384, 400; 370/474, 476, 477

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20 Claims, 6 Drawing Sheets



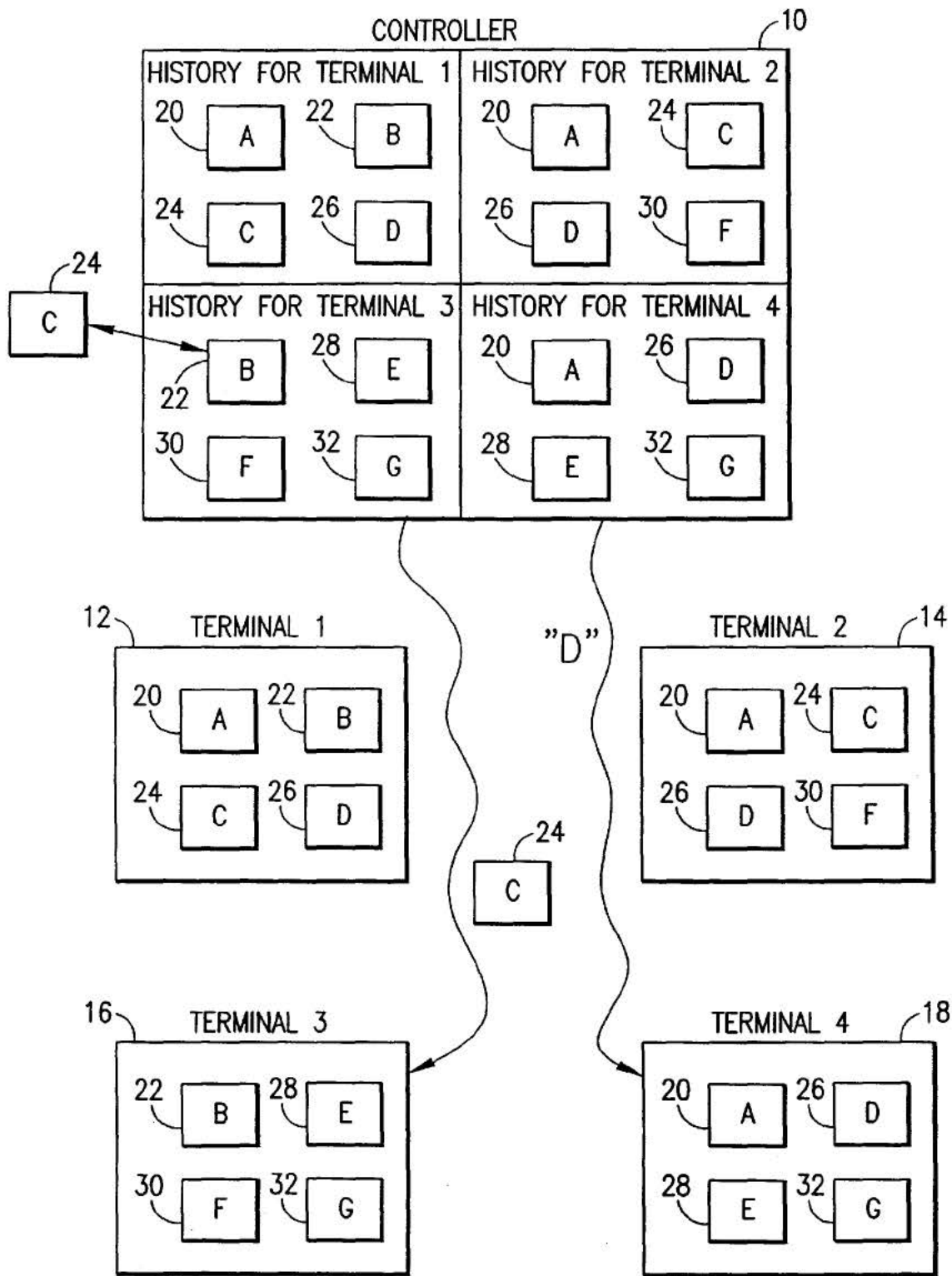
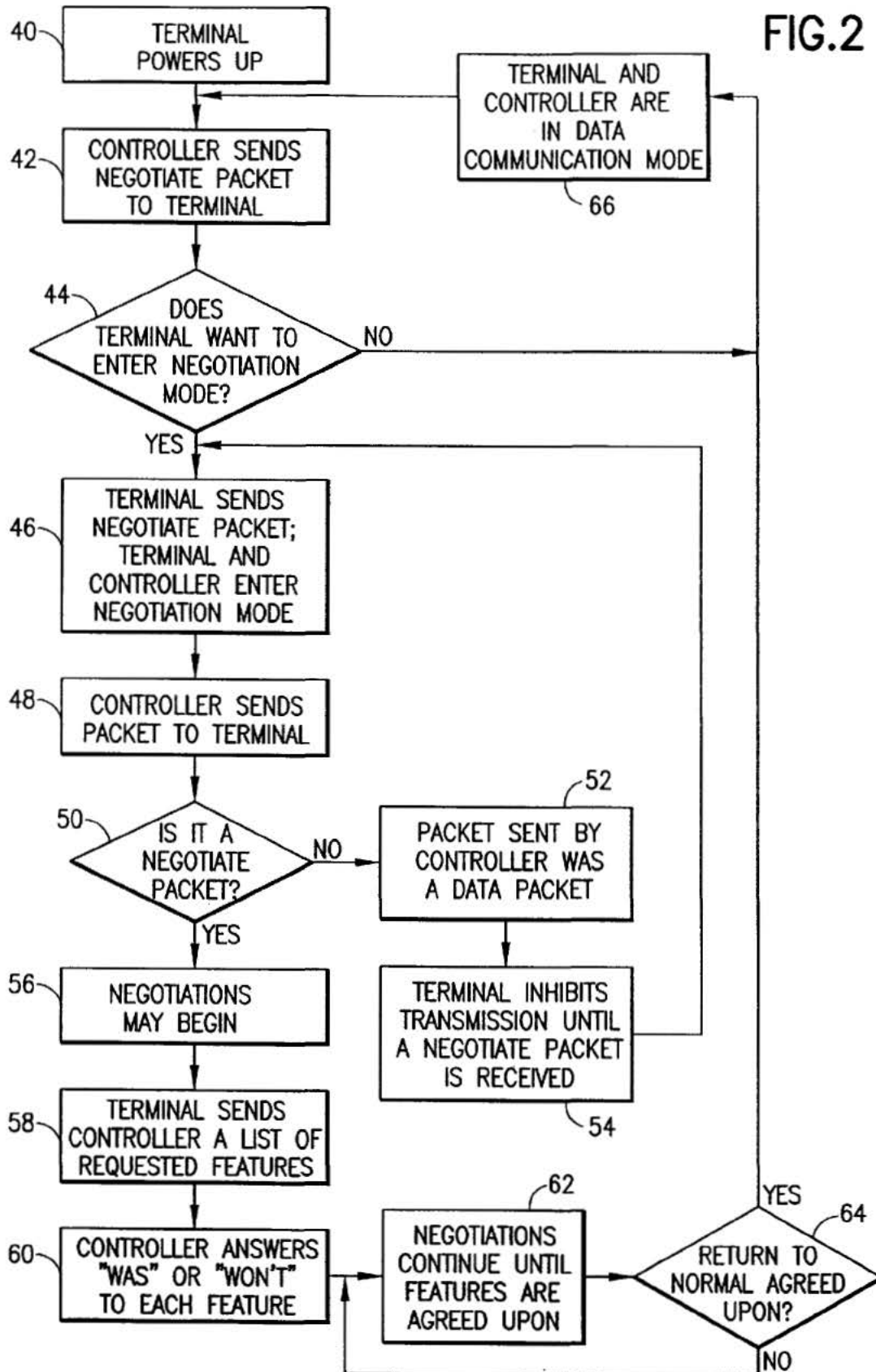


FIG. 1

FIG. 2



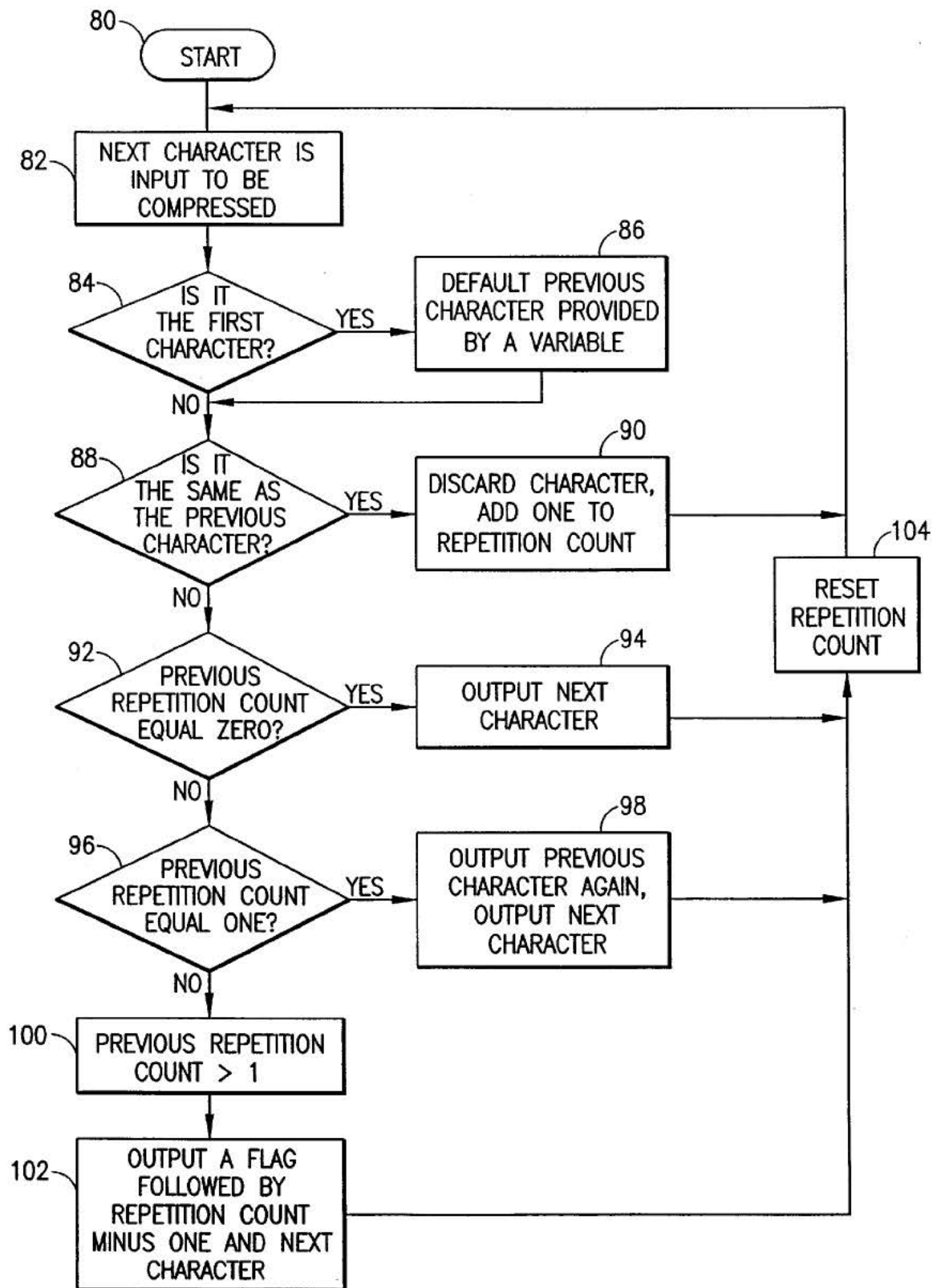


FIG.3

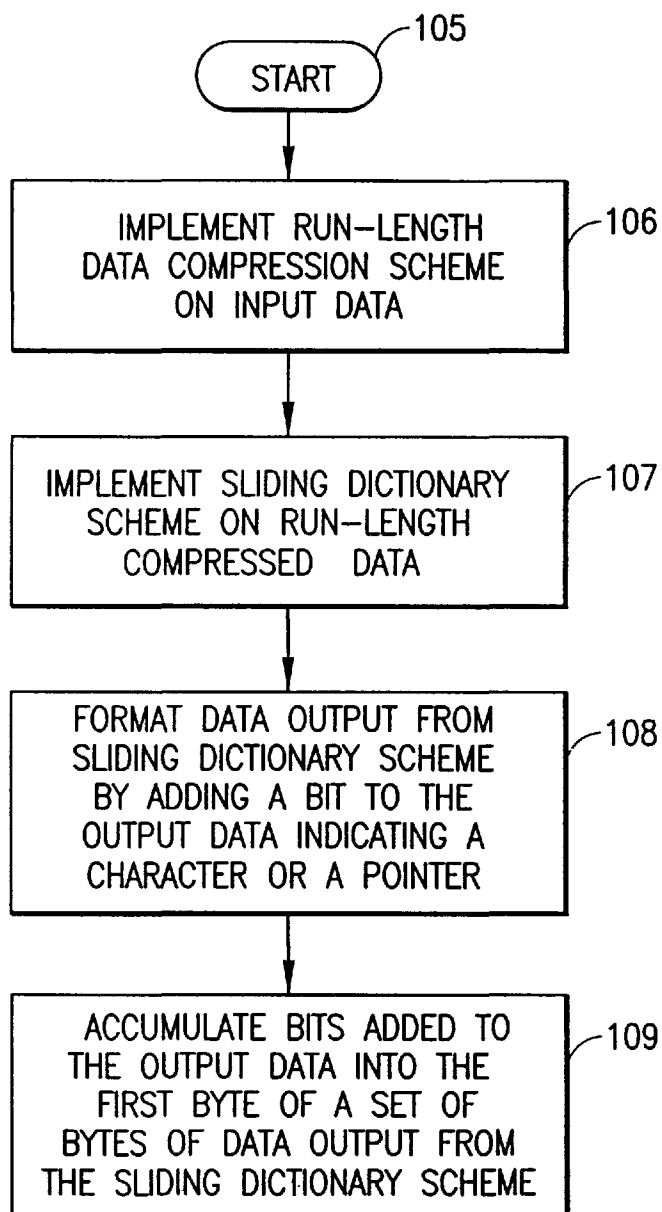


FIG.3A

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