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**United States Patent** [19]

McMullan, Jr. et al.

[11] **Patent Number:** **5,255,086**[45] **Date of Patent:** **Oct. 19, 1993**[54] **METHOD AND APPARATUS FOR RF DATA TRANSFER IN A CATV SYSTEM**[75] **Inventors:** Jay C. McMullan, Jr.; David J. Naddor, both of Doraville; Robert J. Beyers, II, Snellville, all of Ga.[73] **Assignee:** Scientific-Atlanta, Inc., Norcross, Ga.[21] **Appl. No.:** 562,675[22] **Filed:** Aug. 3, 1990**Related U.S. Application Data**

[60] Division of Ser. No. 503,422, Apr. 2, 1990, Pat. No. 5,142,690, which is a continuation-in-part of Ser. No. 498,084, Mar. 20, 1990, Pat. No. 5,155,590, and a continuation-in-part of Ser. No. 498,083, Mar. 20, 1990.

[51] **Int. Cl.<sup>5</sup>** ..... H04H 1/02[52] **U.S. Cl.** ..... 358/86; 455/6.1[58] **Field of Search** ..... 358/84, 86; 455/2-6, 455/3.1, 4.1, 4.2, 5.1, 6.1; 340/825.02, 825.07, 825.08, 825.47, 825.53, 825.54; 370/85.8, 95.2, 95.3[56] **References Cited****U.S. PATENT DOCUMENTS**

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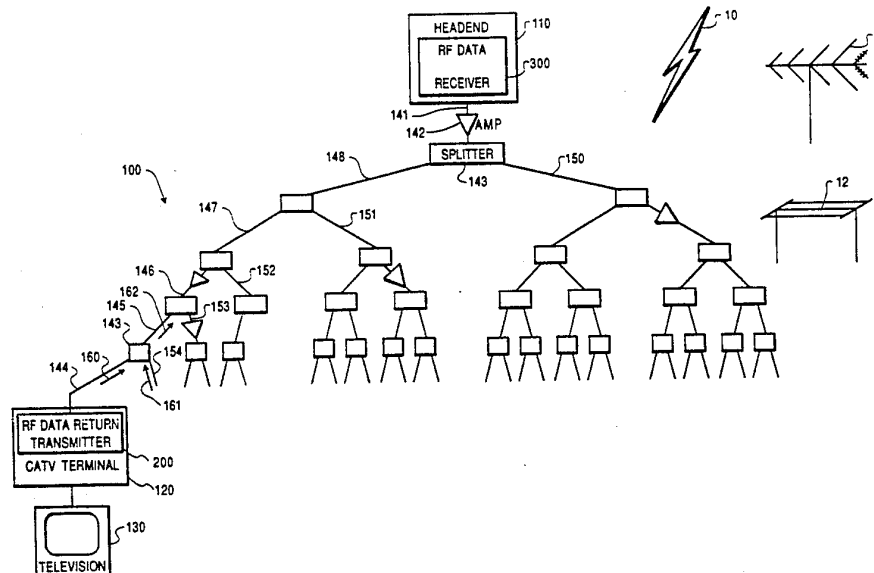
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[57] **ABSTRACT**

A method of controlling the allocation of a population of remote units among a plurality of groups of remote units is provided. Each remote unit has a digital identifier respectively associated therewith. A maximum and a minimum average number of remote units per group is fixed. The remote units are assigned to the groups of remote units in accordance with the respective digital identifiers. The average number of remote units per group is then determined as remote units are assigned thereto. Next, the average number of remote units per group is compared to the fixed maximum number of remote units per group. The above steps are repeated while the average number of remote units per group is less than or equal to the fixed maximum number of remote units per group. The number of groups is changed such that the average number of remote units per group is between the fixed maximum and minimum number of remote units per group if the average number of remote units per group exceeds the maximum number of remote units per group.

**18 Claims, 18 Drawing Sheets**

Petitioner ARRIS Group, Inc.'s



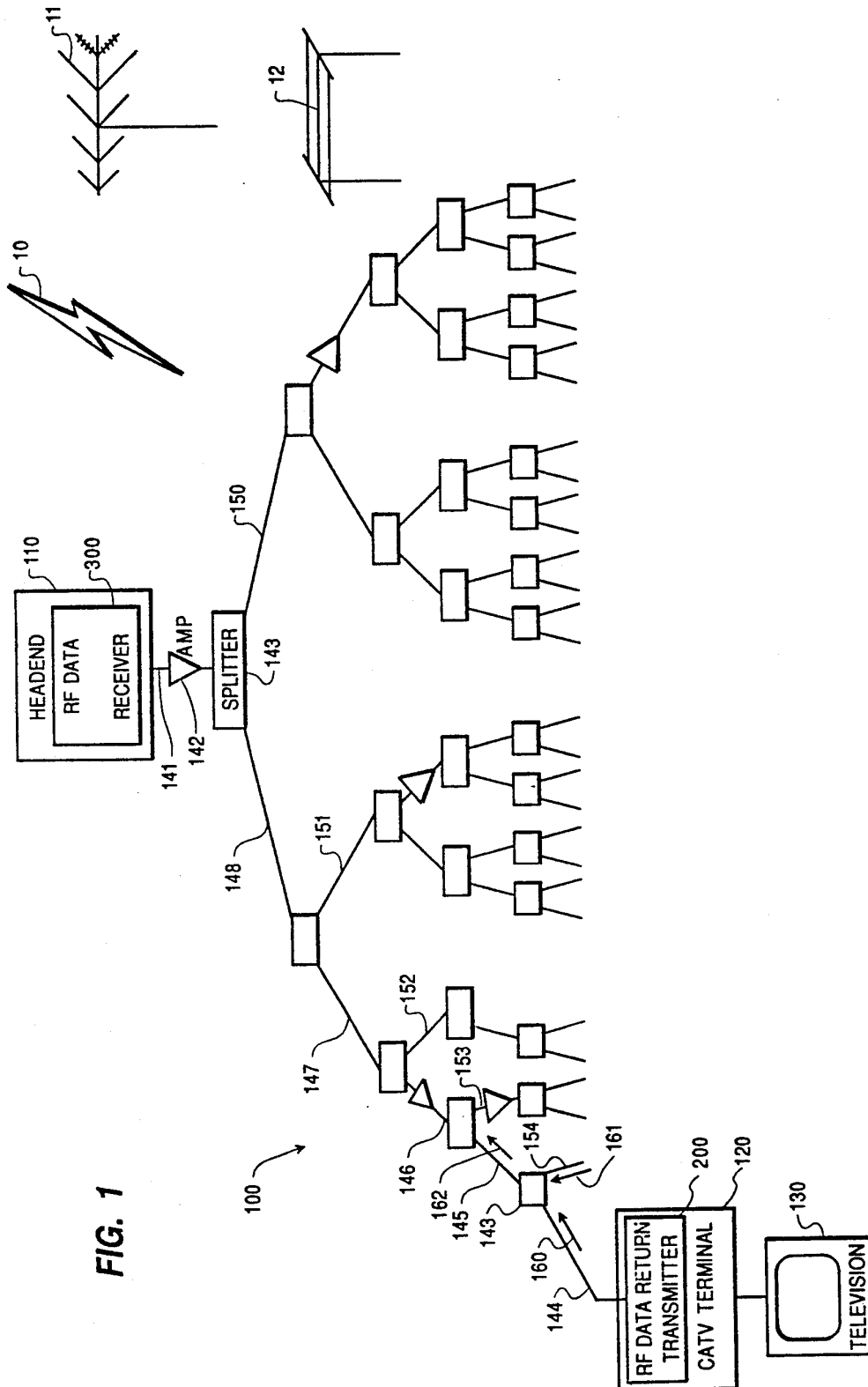
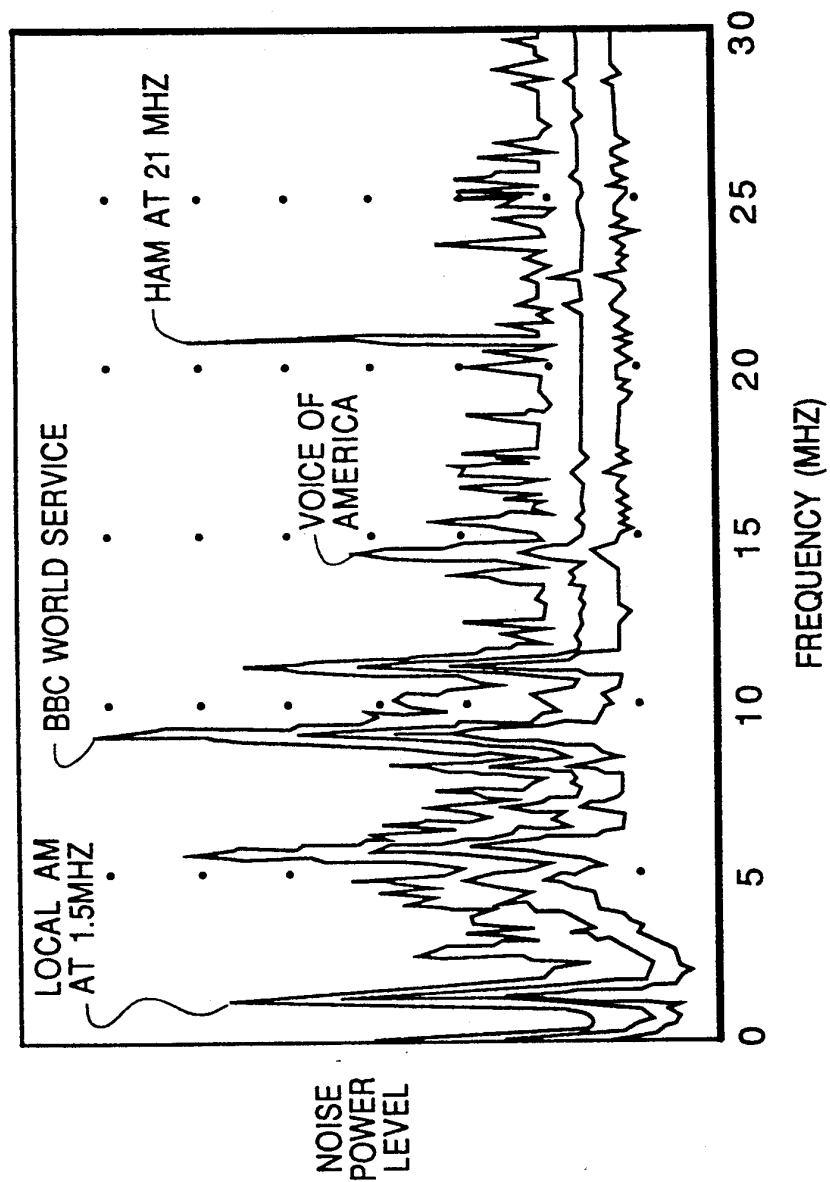
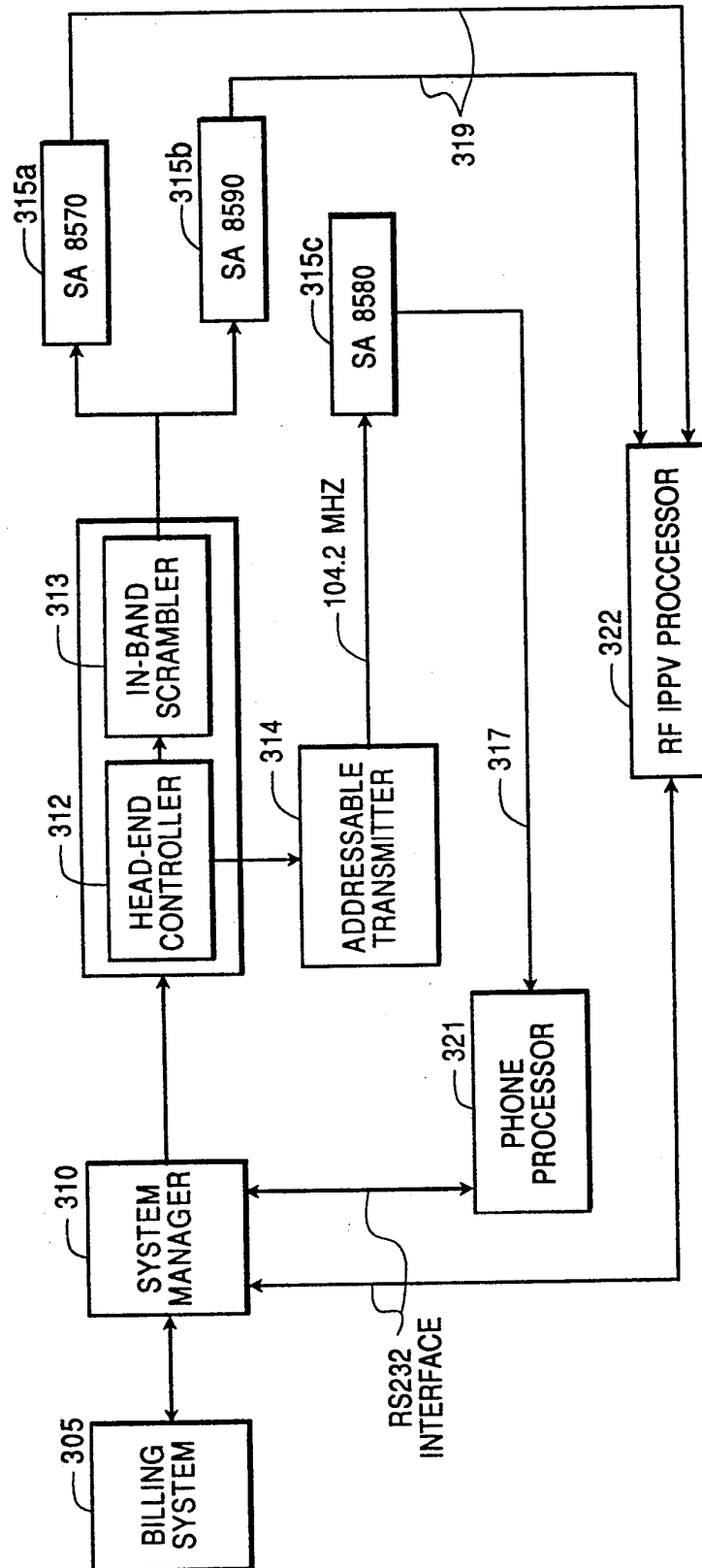


FIG. 2



**FIG. 3**



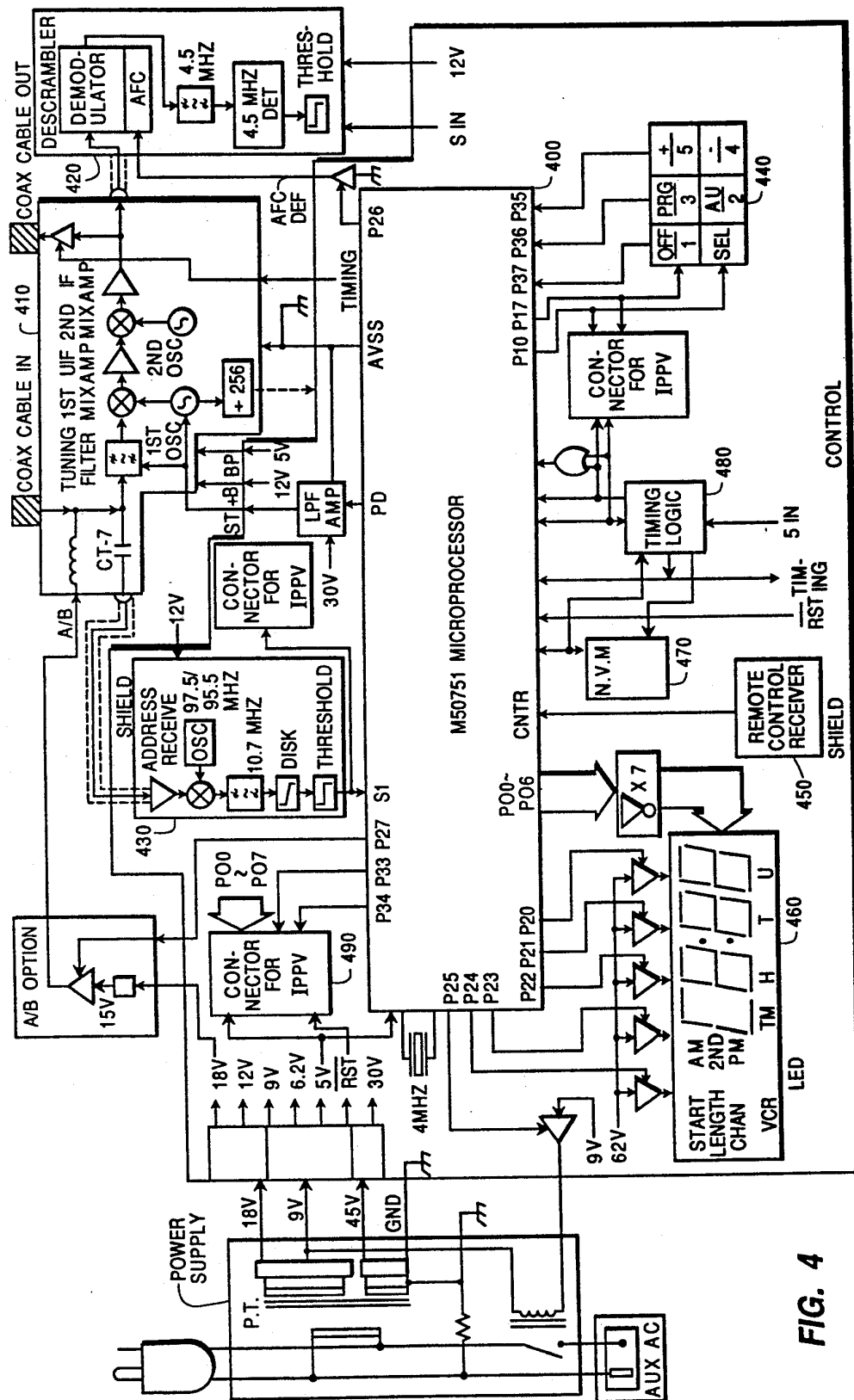


FIG. 4

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