

# United States Patent [19]

McNamara et al.

[11] Patent Number: 4,533,948

[45] Date of Patent: Aug. 6, 1985

## [54] CATV COMMUNICATION SYSTEM

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[73] Assignee: General Instrument Corporation, New York, N.Y.

[21] Appl. No.: 373,765

[22] Filed: Apr. 30, 1982

[51] Int. Cl.<sup>3</sup> ..... H04N 7/16

[52] U.S. Cl. .... 358/122; 358/86; 358/114; 455/5; 340/825.5; 375/2.1

[58] Field of Search ..... 358/114, 122, 86; 375/2.2, 2.1; 340/825.5; 364/200, 900; 178/22.01, 22.02, 22.03, 22.04, 22.05, 22.06, 22.07, 22.08, 22.09, 22.10, 22.11, 22.12, 22.13, 22.14, 22.15, 22.16, 22.17, 22.18, 22.19; 455/5, 6, 3

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Primary Examiner—Robert L. Griffin

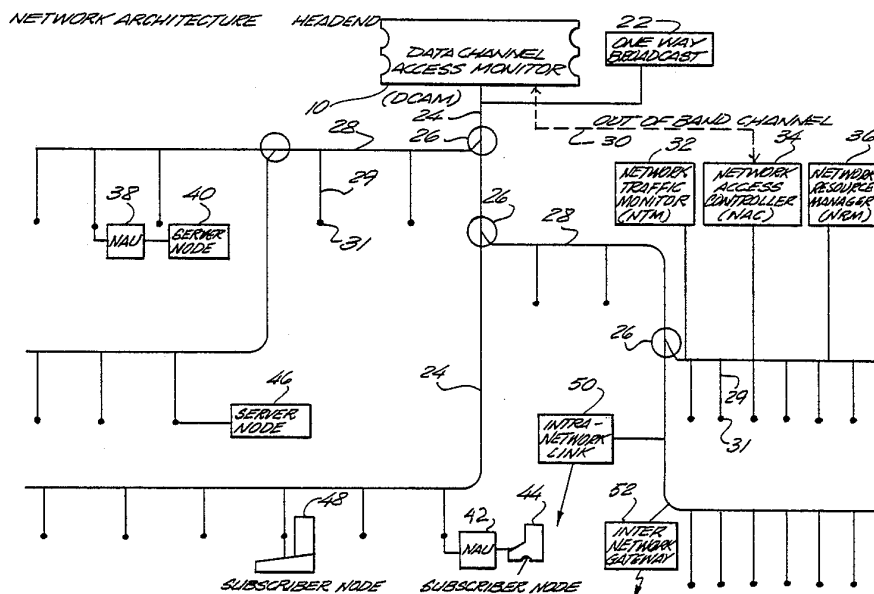
Assistant Examiner—Timothy K. Greer

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## [57] ABSTRACT

A two way digital communication arrangement utilizes a CATV system to provide bidirectional data transport service between any two points within the CATV system. The headend receives an upstream message and selectively rebroadcasts such message on the downstream portion of the spectrum. System intelligence is thus distributed throughout the system as server and subscriber nodes can be located anywhere in the CATV network. In order to obtain access to the CATV communication resources, user equipment at each node must attach a frame verifier (FV) code to each respective message. The headend examines the FV and permits rebroadcast of messages only if the FV code indicates that the user is authorized.

11 Claims, 17 Drawing Figures



Petitioner ARRIS Group, Inc.'s



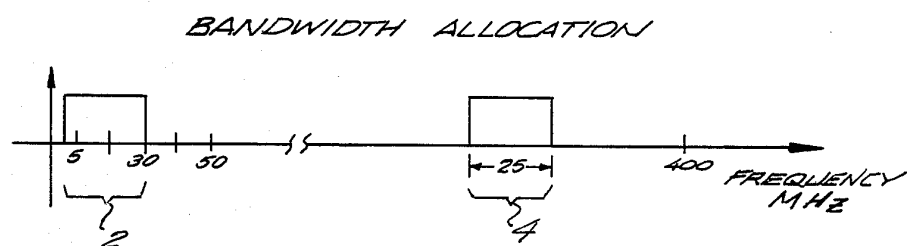


FIG. 1

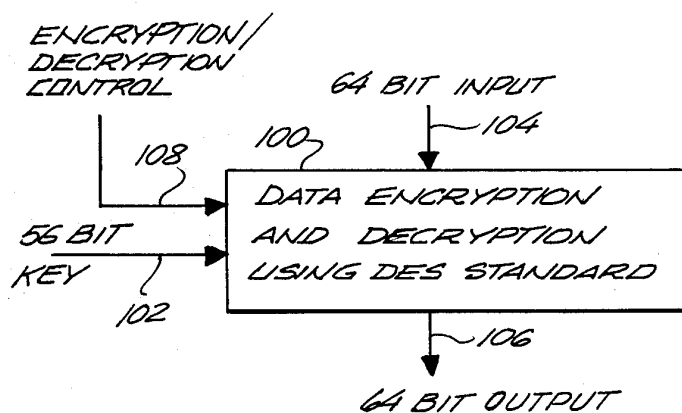


FIG. 5

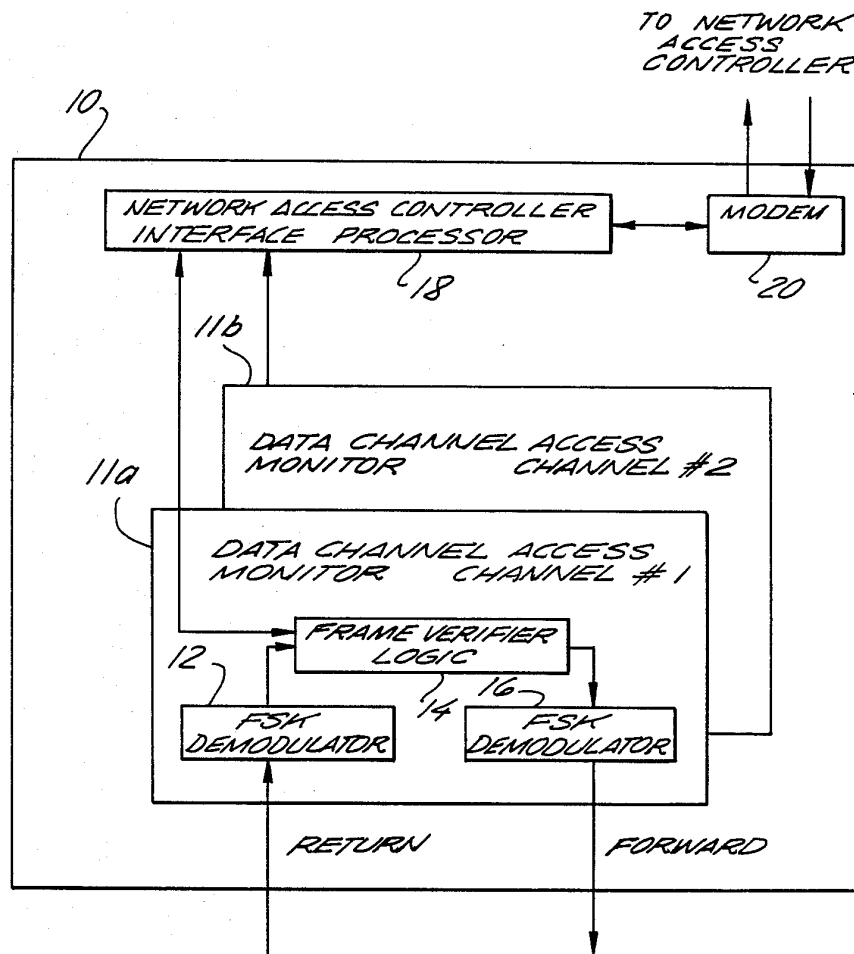


FIG. 2

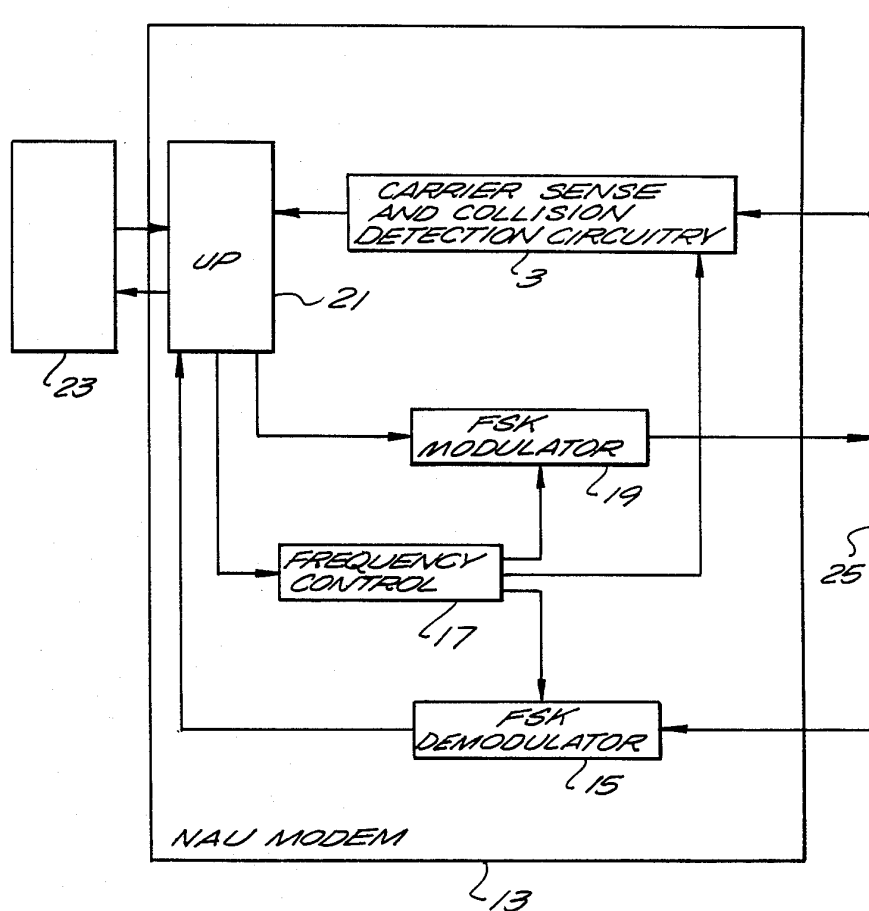


FIG. 2a



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