United States Patent [19]

Kupnicki et al.

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[54] **TELEVISION TRANSMISSION NETWORK WITH SCRAMBLING AND DESCRAMBLING**

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[51] **Int. Cl.**[4] **H04N 7/167;** H04L 9/00

[52] **U.S. Cl.** **380/14;** 380/19; 380/20; 380/37; 380/50

[58] **Field of Search** 358/114, 119, 121, 122; 178/22.04, 22.07, 22.05, 22.19; 380/10, 14, 19, 20, 23, 36, 37, 50

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,659,046	4/1972	Angeleri et al.	178/22.13
4,070,693	1/1978	Shutterly	358/122 X
4,240,106	12/1980	Michael et al.	358/36
4,266,243	5/1981	Shutterly	358/116 X
4,318,125	3/1982	Shutterly	358/121
4,388,643	6/1983	Aminetzah	358/122 X
4,390,898	6/1983	Bond et al.	358/123 X
4,392,123	7/1983	Brüggemann	358/36 X
4,405,942	9/1983	Block et al.	358/119
4,484,027	11/1984	Lee et al.	358/122 X
4,535,355	8/1985	Arn et al.	358/122 X
4,605,961	8/1986	Frederiksen	358/121 X

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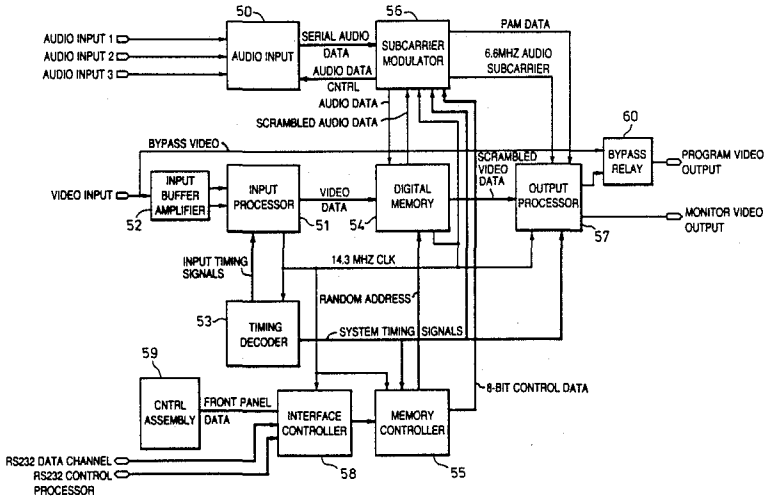
[57] **ABSTRACT**

A controlled access television communications network in which scrambling and descrambling are accomplished by digital signal processing. At the scrambler, the video and audio information are digitized, segmented for example on a line-by-line basis, and randomly reordered. Decryption data corresponding to the random reordering of the information segments are derived, and inserted into the scrambled video data. A composite signal comprising the video data, audio modulated subcarrier, synchronizing signals and the decryption data is transmitted to the receivers along with dedicated keys whereby descramblers at the receivers are selectively enabled in accordance with the remote selection of authorized users.

11 Claims, 27 Drawing Sheets



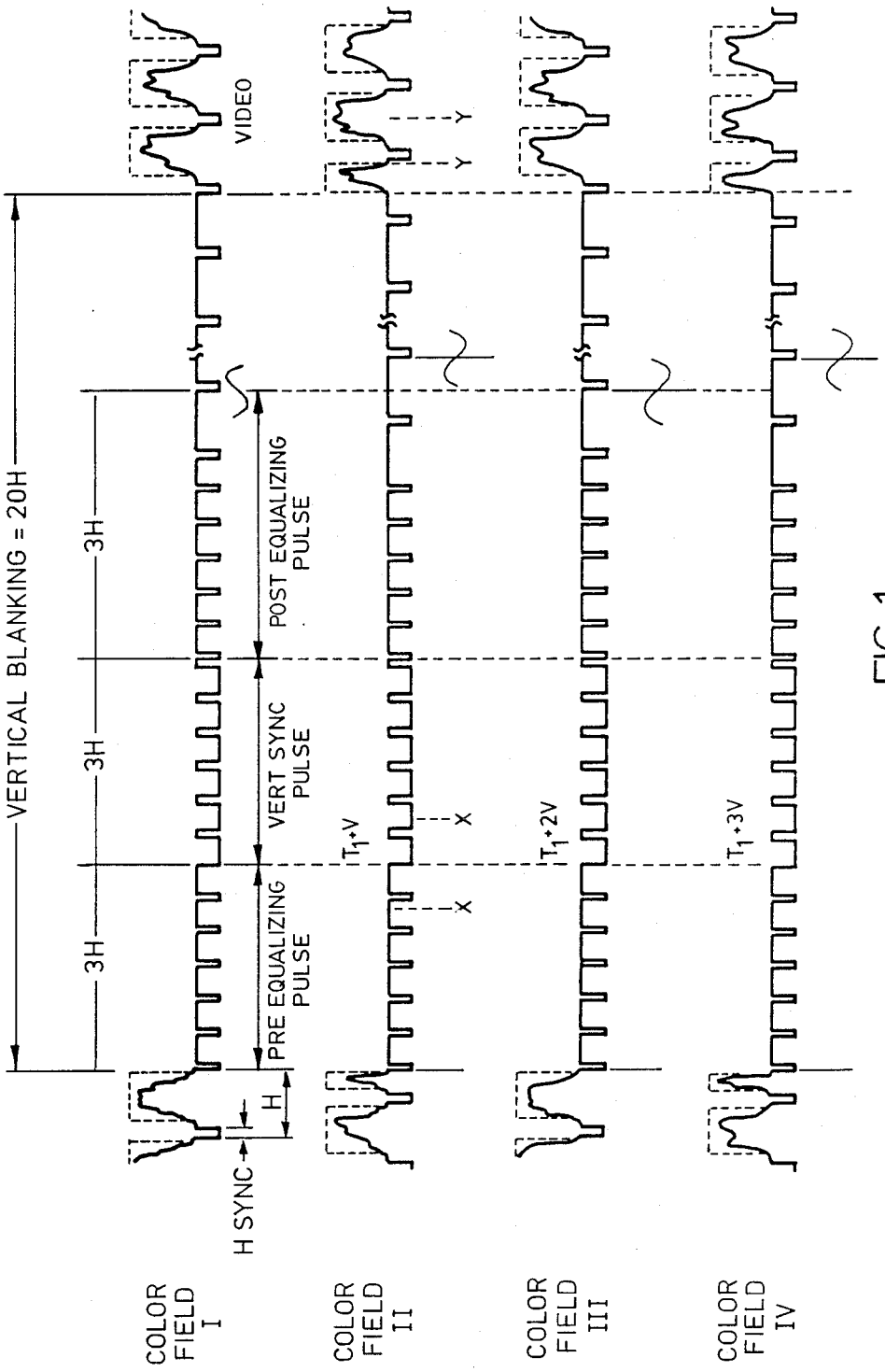


FIG. 1

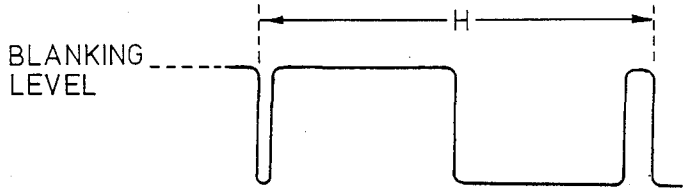


FIG. 2a

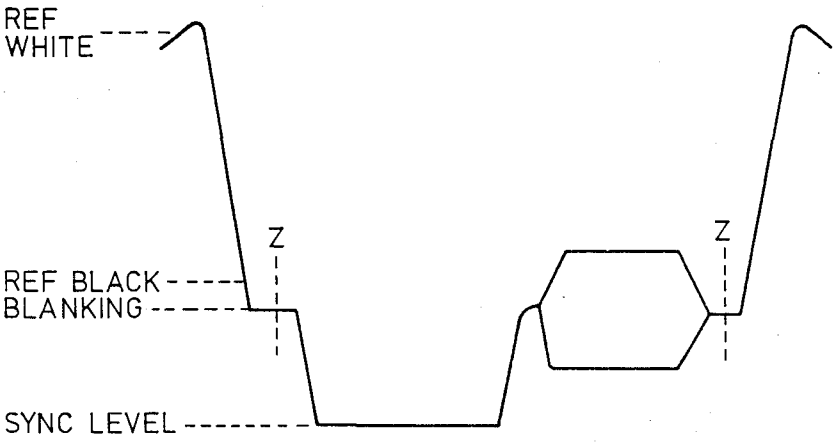


FIG. 2b

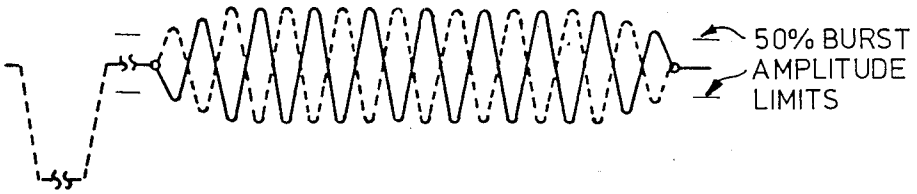


FIG. 2c

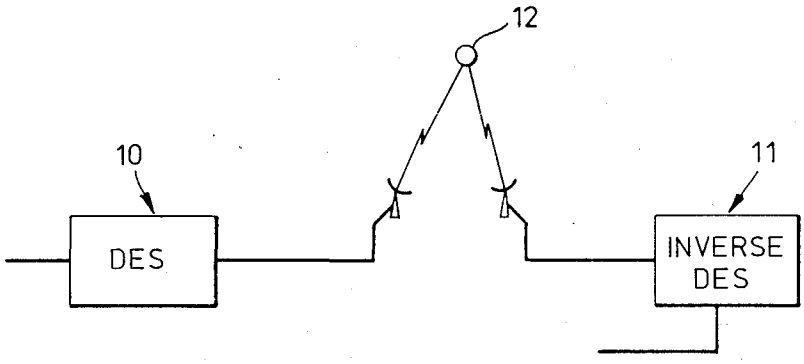


FIG. 3

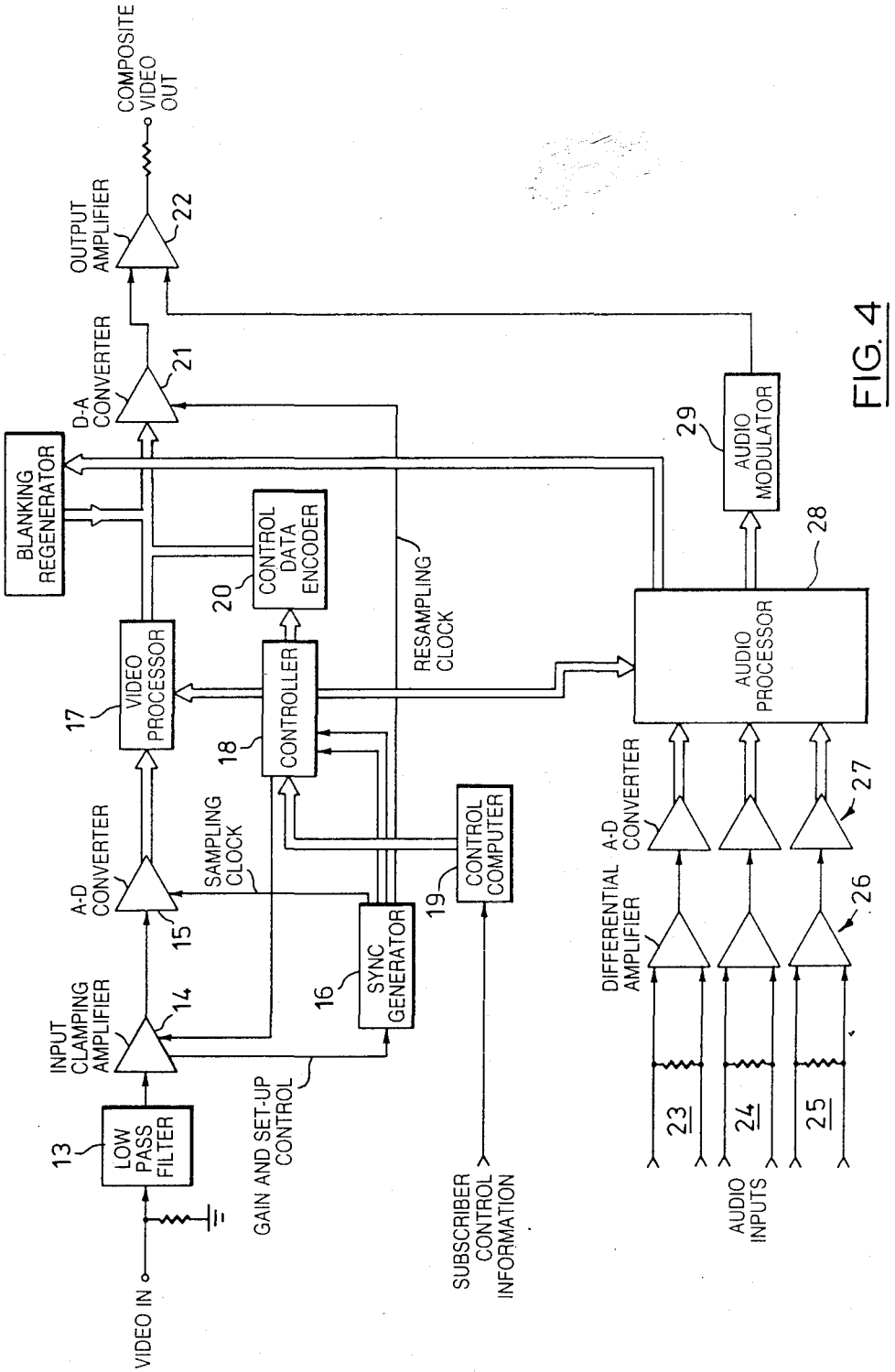


FIG. 4

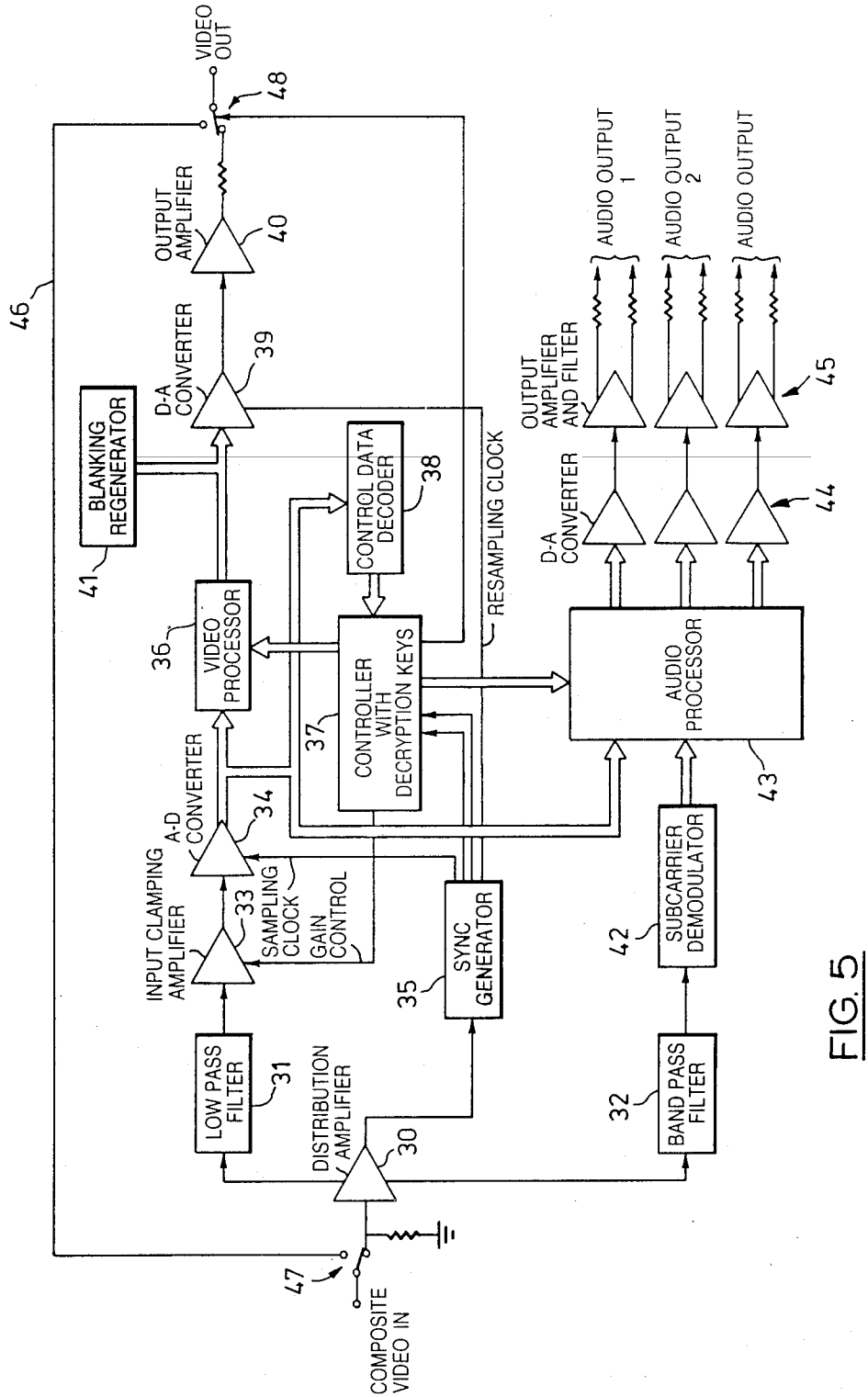


FIG. 5

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