

United States Patent [19]

Golding et al.

[11] 3,795,763

[45] Mar. 5, 1974

[54] DIGITAL TELEVISION TRANSMISSION SYSTEM

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[73] Assignee: **Communications Satellite Corporation**, Washington, D.C.

[22] Filed: **Apr. 18, 1972**

[21] Appl. No.: **245,129**

[52] U.S. Cl. **178/5.6, 178/5.2 R, 178/DIG. 3, 178/69.5 TV**

[51] Int. Cl. **H04n 7/12, H04n 9/02**

[58] **Field of Search** **178/5.2 R, 6.8, DIG. 3, 178/DIG. 22, DIG. 23, 7.1, 7.2, 5.4 R; 179/15 BW, 155 ST, 2 TV; 325/38 B**

[56]

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Golding, "A 15 to 25 MHz Digital Television System for the Transmission of Commercial Color Television," December 19, 1967, available from the U.S. Dept. of Commerce Clearing House for Federal Scientific and Technical Information as publication PB 178993.

Primary Examiner—Robert L. Richardson
Attorney, Agent, or Firm—Sughrue, Rothwell, Mion, Zinn & Macpeak

[57] ABSTRACT

A digital television transmission system for transmitting television signals at substantially reduced bit rate and bandwidth. Frequency interleaving techniques reduce the sampling rate, and digital differential PCM with edge recoding techniques reduce the number of bits per sample. Further, reduction in bit rate is accomplished by eliminating approximately half the chrominance data and all the sync pulses from the transmitted signal. Periodic sync words are transmitted to allow reconstruction of the sync pulse format at the receiver. All transmitted bits are multiplexed in accordance with a particular format which provides proper alignment of the luminance and chrominance lines at the receiver.

6 Claims, 16 Drawing Figures

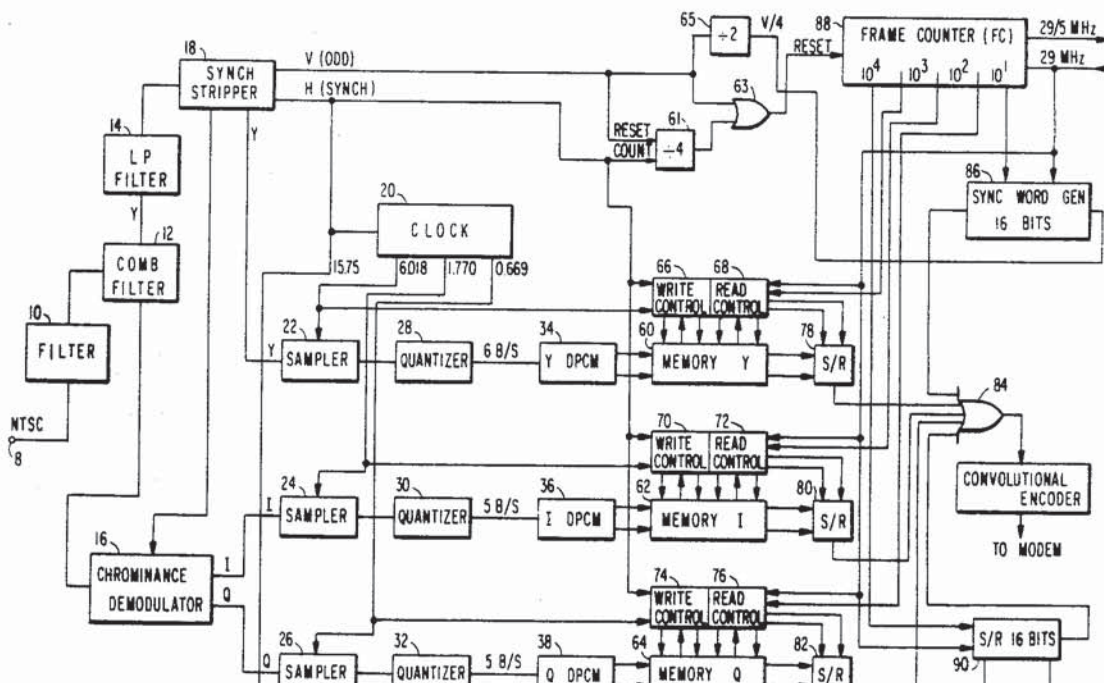


FIG. 2

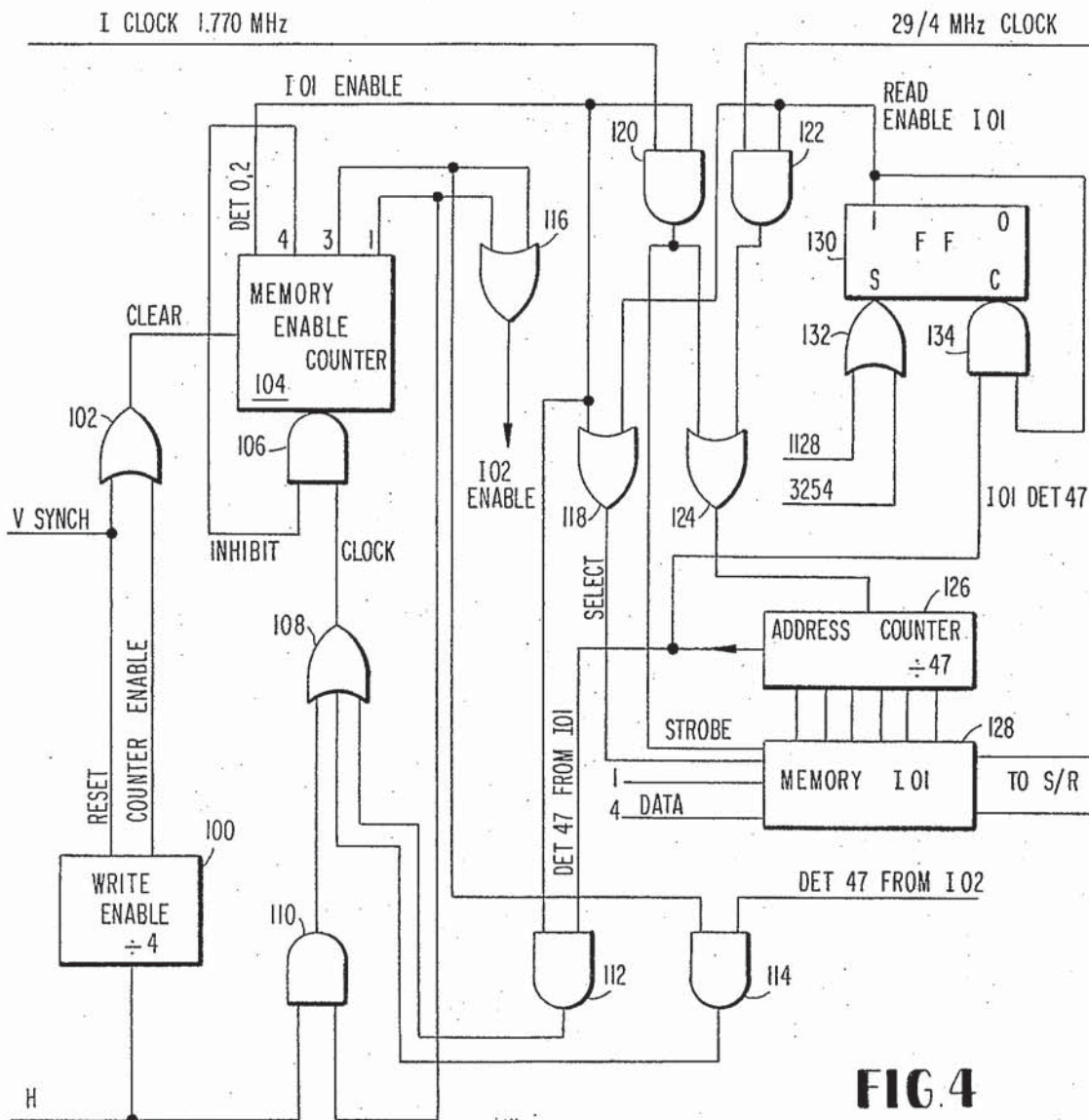
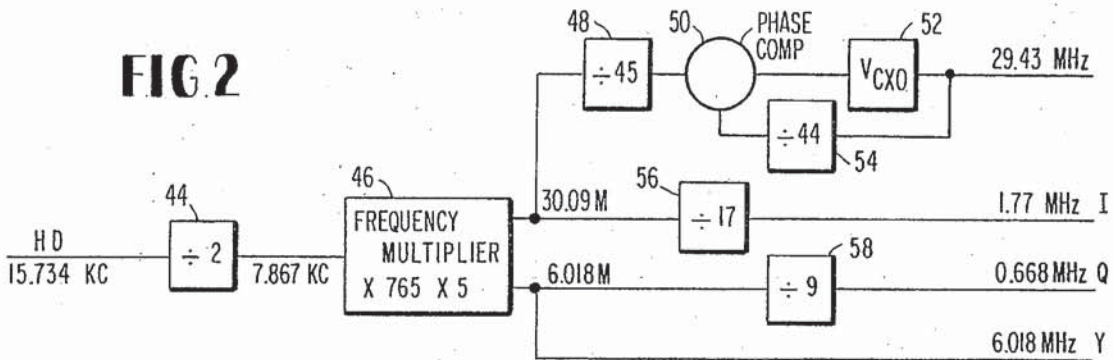


FIG. 4

FIG. 5

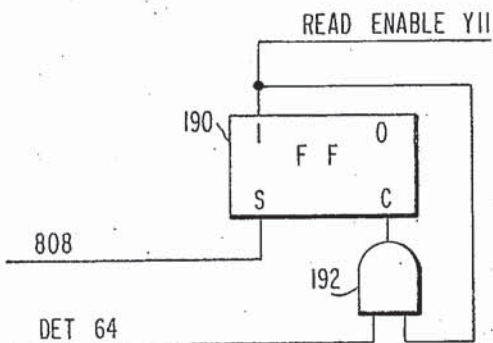
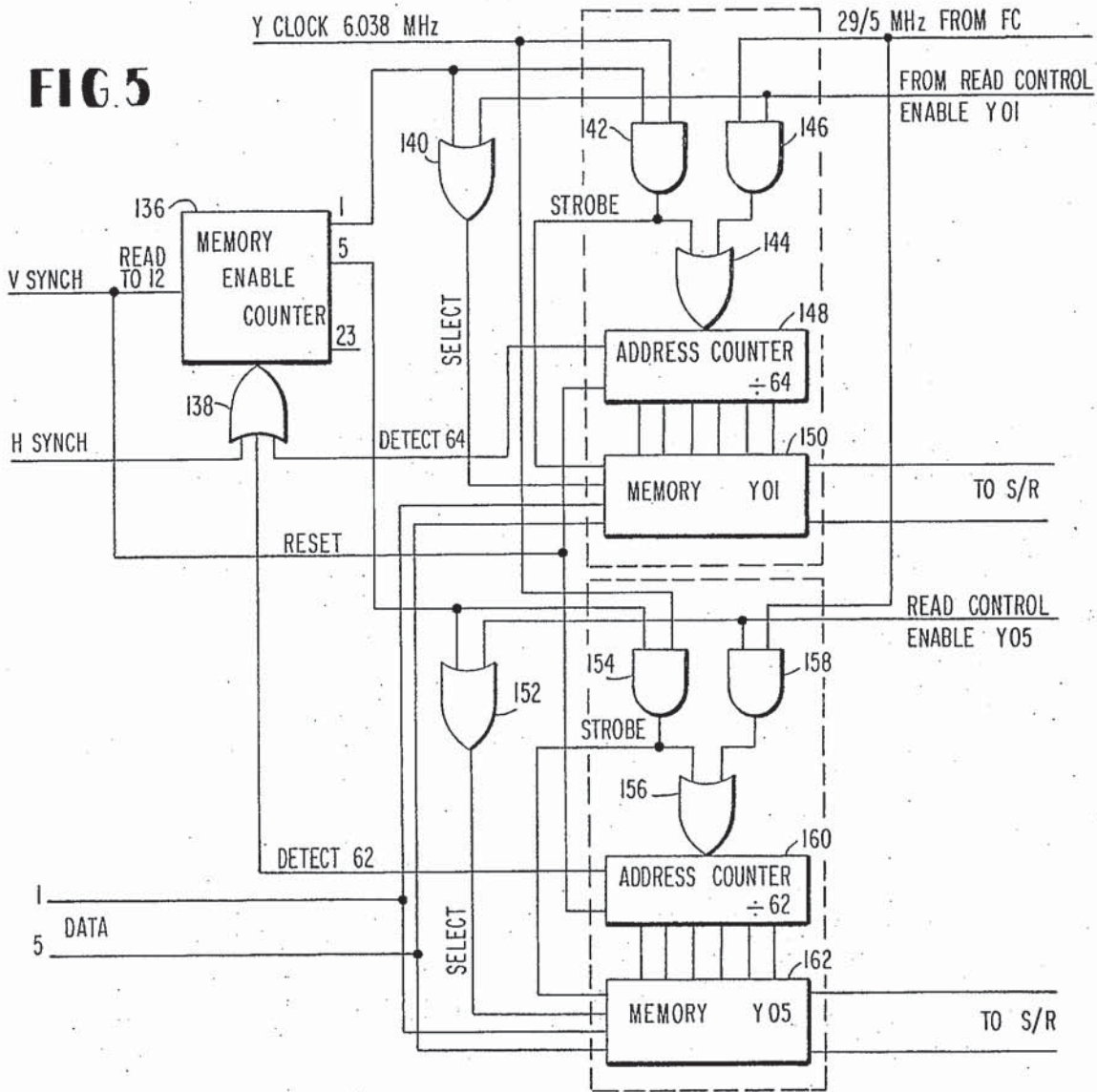


FIG. 6

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