US005254981A

# United States Patent [19]

Disanto et al.

[11] Patent Number: 5,254,981

[45] Date of Patent: Oct. 19, 1993

[54] ELECTROPHORETIC DISPLAY EMPLOYING GRAY SCALE CAPABILITY UTILIZING AREA MODULATION

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[21] Appl. No.: **975,119**

[22] Filed: **Nov. 12, 1992**

**Related U.S. Application Data**

[63] Continuation of Ser. No. 402,774, Sep. 15, 1989, abandoned.

[51] **Int. Cl.**[5] ..... **G09G 3/34**

[52] **U.S. Cl.** ..... **345/107**; 345/149

[58] **Field of Search** ..... 340/787, 703, 767, 784, 340/793; 358/230, 236, 429; 382/50, 54

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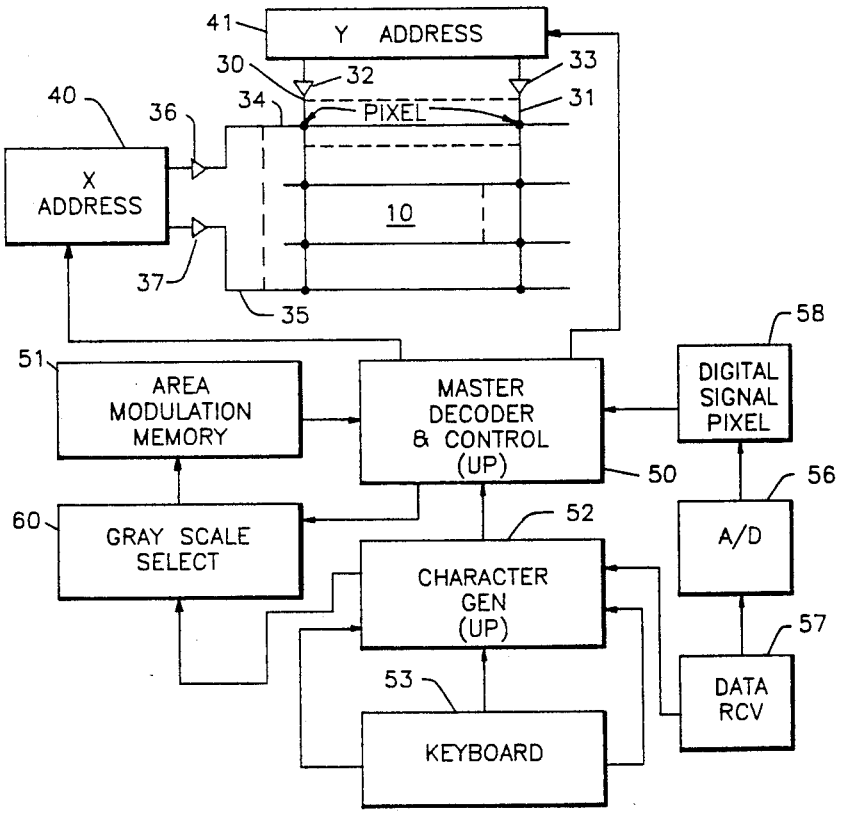
[57] **ABSTRACT**

A apparatus provides grey scale capability for an electrophoretic information display. The electrophoretic information display is an XY addressable display with each XY coordinate indicative of a given column and row and defining a pixel. There are described various circuit configurations coupled to the display for impressing upon the display a predetermined digital pattern to cause certain pixels in the display to be energized with respect to other pixels in the display where the combination due to the digital pattern causes a desired grey scale level to appear on a character or on the background of the display.

**14 Claims, 8 Drawing Sheets**