



United States Patent [19]

[11] Patent Number: **5,841,431**

Simmers

[45] Date of Patent: **Nov. 24, 1998**

- [54] **APPLICATION OF SPLIT- AND DUAL-SCREEN LCD PANEL DESIGN IN CELLULAR PHONES**
- [75] Inventor: **Charles Russell Simmers**, Phoenix, Ariz.
- [73] Assignee: **Intel Corporation**, Santa Clara, Calif.
- [21] Appl. No.: **749,486**
- [22] Filed: **Nov. 15, 1996**
- [51] Int. Cl.⁶ **G09G 5/00**; G09G 3/36; G06F 1/00; G06F 1/16
- [52] U.S. Cl. **345/211**; 345/103; 364/705.05; 364/707; 364/708.1
- [58] **Field of Search** 345/211, 103, 345/104, 98, 100, 131, 156, 173; D14/137, 138; 364/705.05, 707, 708.1; 379/433, 428, 440; 395/750, 750.04; 455/556, 566, 574, 575, 89, 90

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Assistant Examiner—David L. Lewis
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman

[57] ABSTRACT

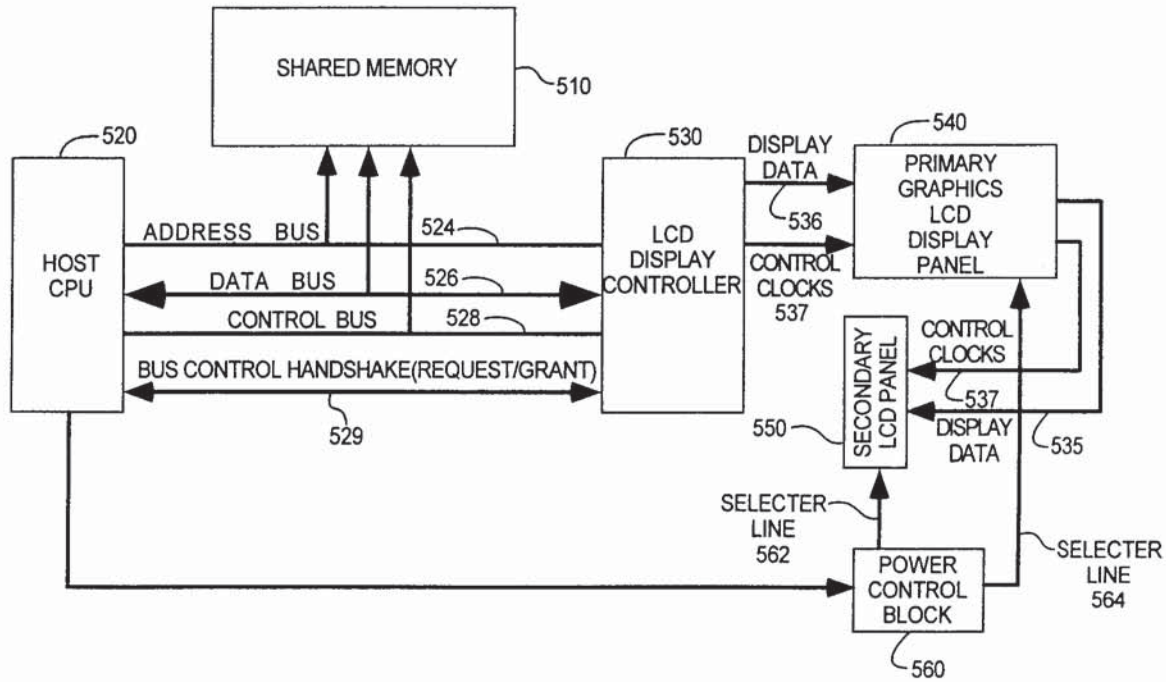
An apparatus for conserving power in information devices with dual functions. A single display panel is logically split into two sub-panels. Each sub-panel can be powered up or down separately as is required by the function of the device. The display panel has a plurality of improved segment drivers which are provided power signals enabling the set of segment drivers corresponding to a sub-panel to be separately powered. In systems with two separate display panels, each of the panels may be powered up or down by the use of similar improved segment drivers as necessary.

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11 Claims, 6 Drawing Sheets



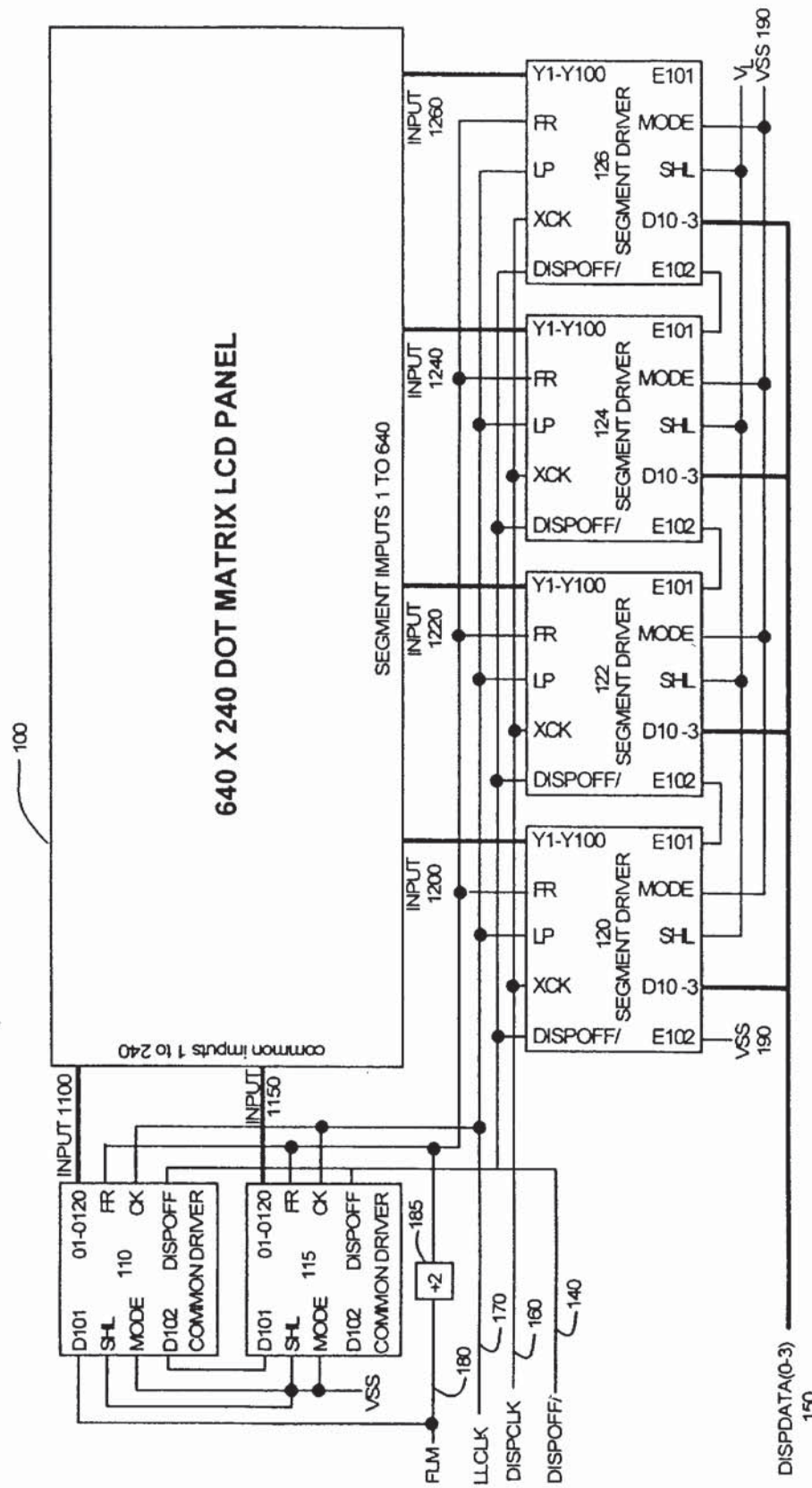


FIG. 1 (PRIOR ART)

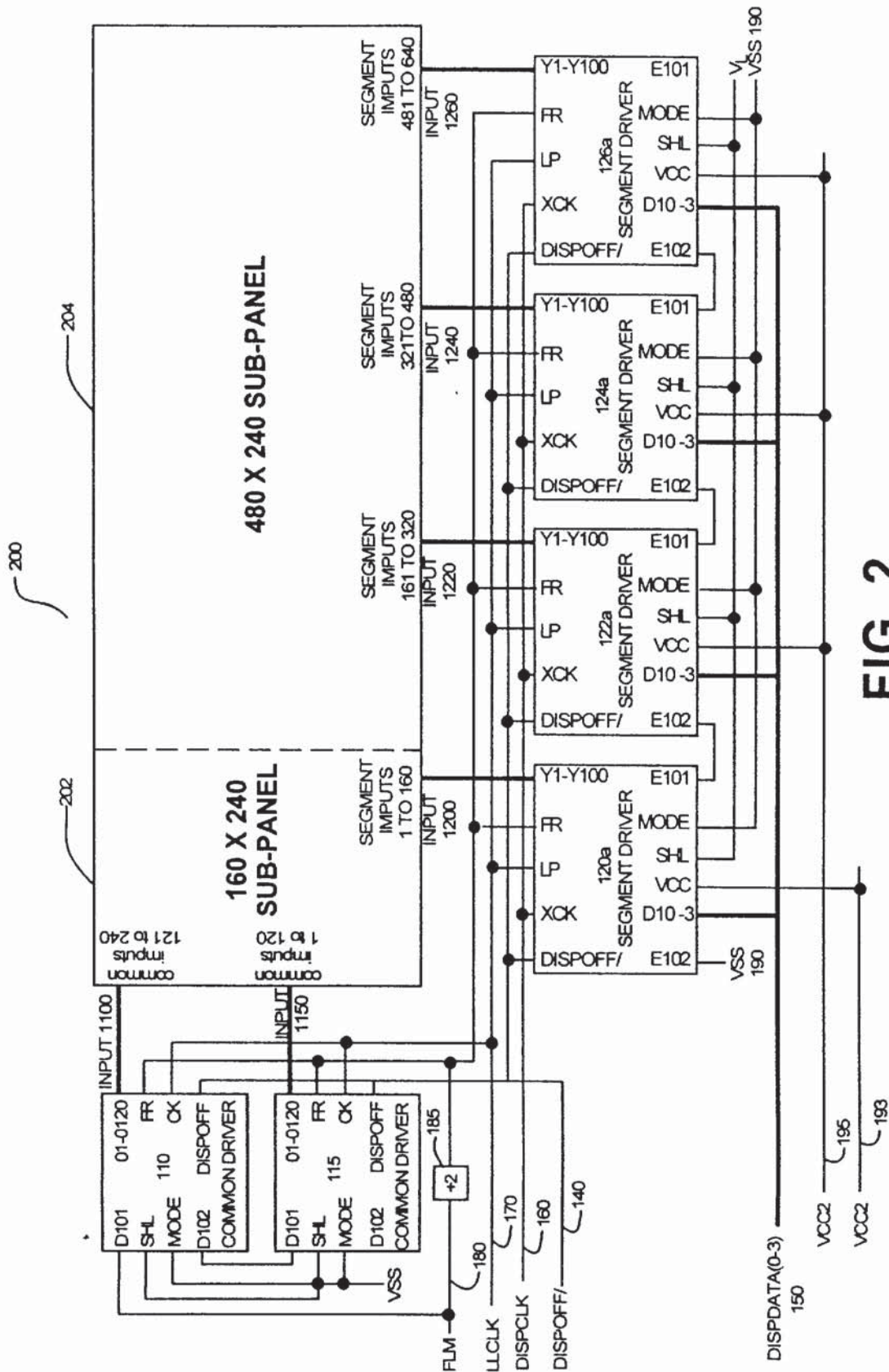


FIG. 2

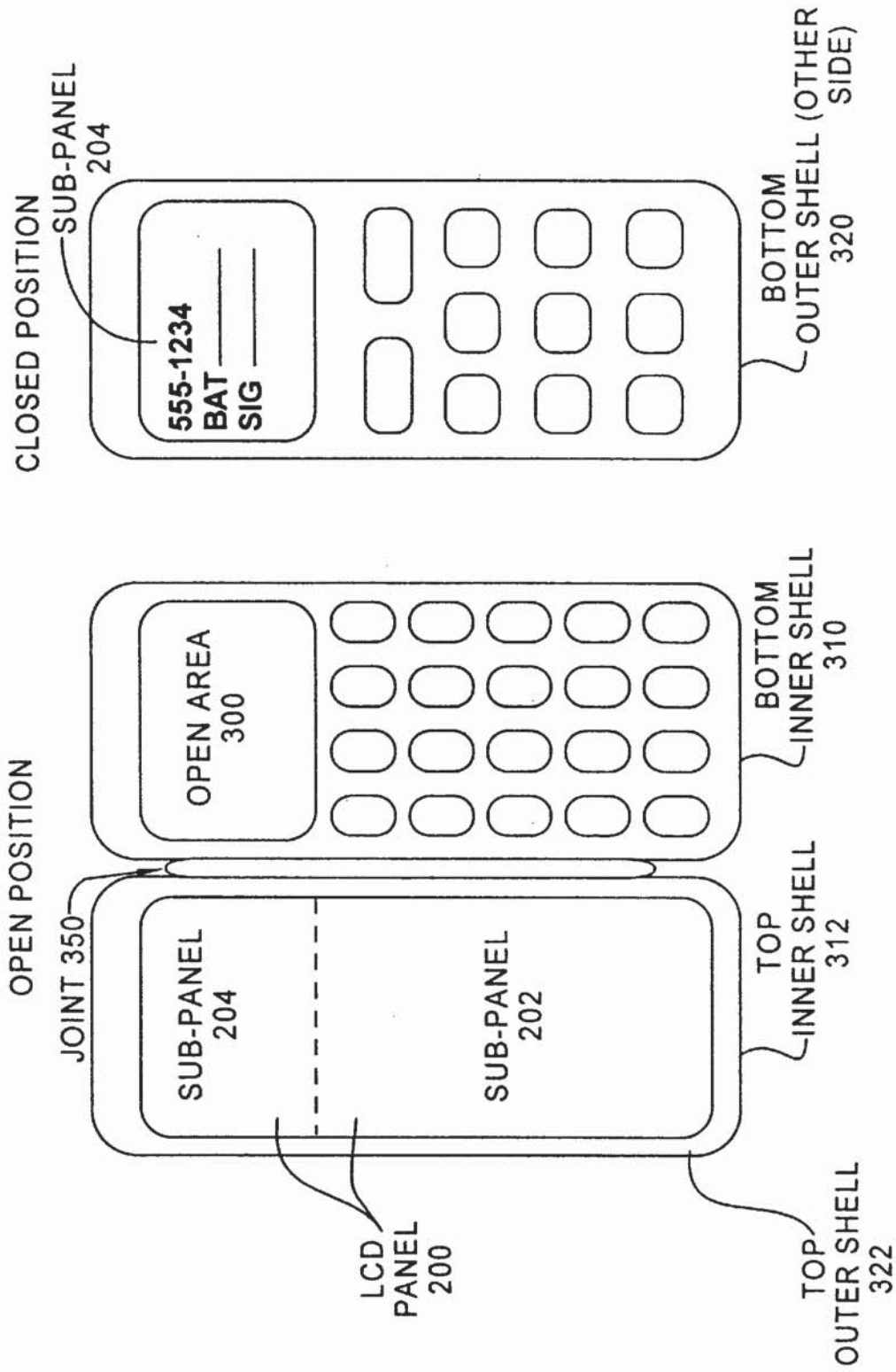


FIG. 3

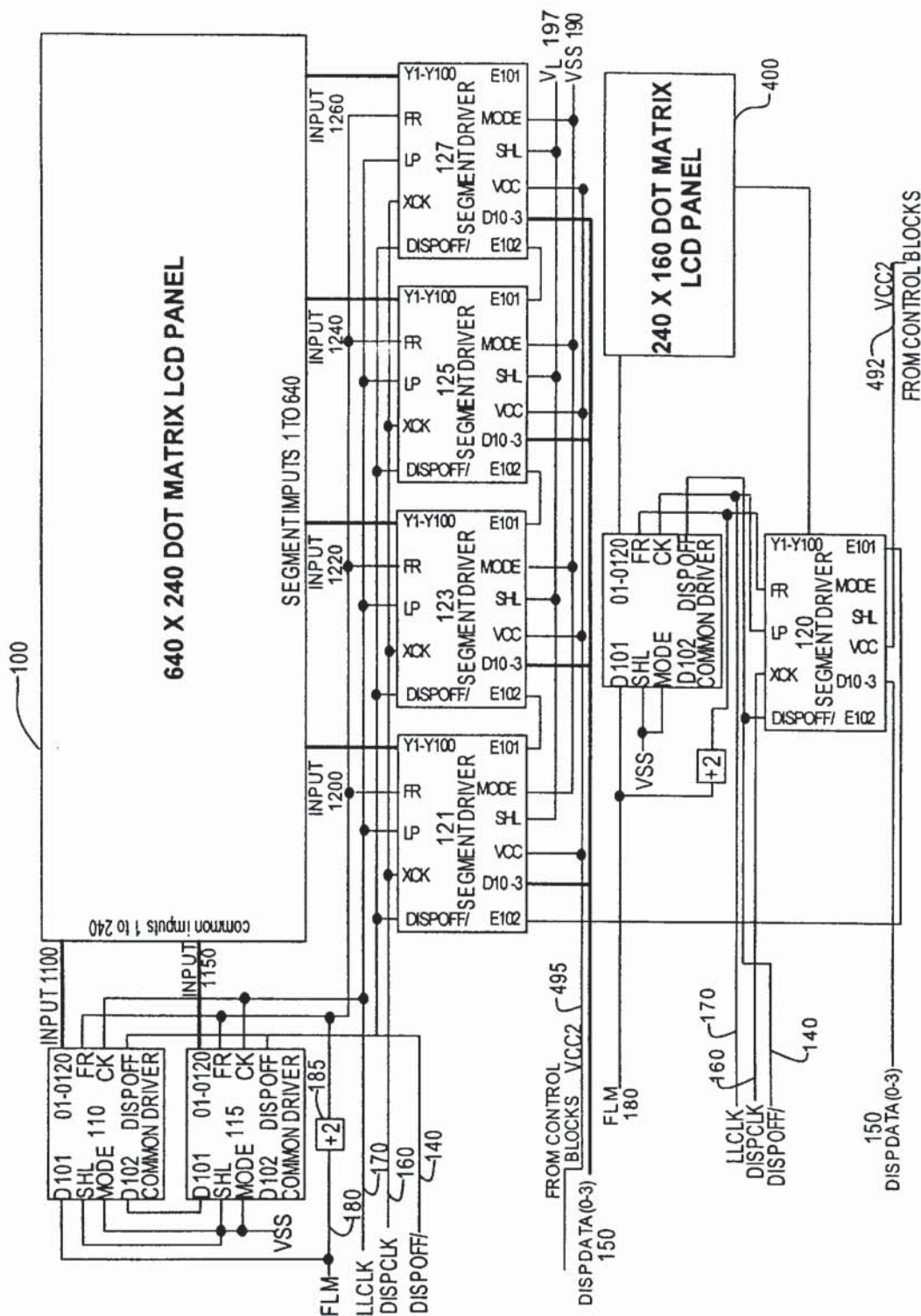


FIG. 4

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