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(54) Title: MULTIPLEX ADDRESSING OF FERROELECTRIC LIQUID CRYSTAL DISPLAYS

(57) Abstract

A ferroelectric liquid crystal display comprises a layer of ferroelectric liquid crystal material contained between two cell walls, surface treated to align the material in a tilted layer. The walls carry e.g. row and column electrodes forming an x,y matrix of addressable elements or pixels. Multiplex addressing voltages are provided by driver circuits. An improved addressing is obtained by varying the addressing voltage applied during switching of a pixel to maximise torque applied on liquid crystal molecules. Addressing voltages are from two data waveforms and one strobe waveform; the data waveforms have three or more time slots per period forming a line address time, two or more voltage levels, dc balance, and equivalent rms. values; the strobe waveform has two or more voltage levels (which may include a zero level). The strobe and data waveforms combine to provide switching and non-switching resultant waveforms that form an addressing voltage at each pixel. The switching resultant waveform has gradually increasing voltage levels throughout a line addressing time. The non-switching resultant waveform has a first voltage of opposite polarity to that of the later voltage levels which may include one or more levels of sufficiently large amplitude to inhibit switching.

