Title (en)

MULTIPLEX ADDRESSING OF FERRO-ELECTRIC LIQUID CRYSTAL DISPLAYS

Title (de)

MULTIPLEX-ADRESSIERUNG VON FERROELEKTRISCHEN FLÜSSIGKRISTALLANZEIGEN

Title (fr)

ADRESSAGE MULTIPLEX D'AFFICHAGE A CRISTAUX LIQUIDES FERRO-ELECTRIQUES

Publication

EP 0542804 B1 19960522 (EN)

Application

EP 91914038 A 19910726

Priority

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Abstract (en)

[origin: WO9202925A1] A ferro-electric liquid crystal cell is addressed by row and column electrodes forming an x,y matrix of display elements. A strobe waveform is applied to each row in sequence whilst appropriate data waveforms are applied to all the column electrodes. At each display element the material receives an addressing waveform to switch it to one of its two switched states depending upon the polarity of the addressing waveform. The switching characteristics of ferro-electric materials depend upon the shape of the addressing waveform. Two different shapes of addressing waveforms are used to produce two different and separated switching characteristics (Fig. 3). Al least one switching characteristic curve may exhibit a minimum response time at one voltage value, and the display is operated at voltages above this. The data waveforms are alternating positive and negative pulses of period 2ts. The strobe waveform has a zero for one time period ts followed by a unipolar voltage pulse of duration greater than ts, e.g. 1.5ts or more. This results in an overlapping of addressing in adjacent rows, i.e. the end of a strobe pulse on one row overlaps with the beginning of a strobe pulse on the next row. The display elements may be switched into one of their two states by one of two strobe pulses of opposite polarity. Alternatively a blanking pulse may switch all elements to one state and a strobe used to switch selected elements to the other state.

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