

Title (en)

Drive circuit for active matrix type liquid crystal display device.

Title (de)

Steuereinrichtung für ein Flüssigkristallanzeigegerät mit aktiver Matrix.

Title (fr)

Circuit de commande pour un dispositif d'affichage à cristaux liquides à matrice active.

Publication

**EP 0458169 A2 19911127 (EN)**

Application

**EP 91107810 A 19910514**

Priority

- JP 5209091 A 19910318
- JP 12305690 A 19900515

Abstract (en)

In the drive circuit of an active matrix type liquid crystal display device of this invention, the digital video signal having m-bit gray-scale is inputted to the serial parallel converter (1) and converted to the parallel video data corresponding to one line, and the (m-1) bit gray-scale data excluding the least significant bit is outputted to adders (121, 122, ..., 12n). During the first period, this (m-1) bit gray-scale data is supplied to decoders (21, 22, ..., 2n), from the adders (121, 122, ..., 12n), and during the second period, the least significant bit is added to this (m-1) bit gray-scale data at adders in accordance with the least significant bit of the video data and supplied to decoders (21, 22, ..., 2n), respectively. In the voltage selector (31, 32, ..., 3n), with the output from decoders (121, 122, ..., 12n), the voltage having the level corresponding to the output is selected and outputted. In the display with a certain gray-scale, a voltage is outputted from the voltage selector during the first and second periods and in other gray-scale close to this gray-scale, voltages having varying adjoining levels are outputted alternately from the voltage selector (31, 32, ..., 3n) during the first and second periods. <IMAGE>

IPC 1-7

**G09G 3/36**; **H04N 3/12**

IPC 8 full level

**G09G 3/36** (2006.01); **G09G 3/20** (2006.01)

CPC (source: EP KR)

**G09G 3/36** (2013.01 - KR); **G09G 3/3688** (2013.01 - EP); **G09G 3/2011** (2013.01 - EP); **G09G 3/2018** (2013.01 - EP); **G09G 3/3614** (2013.01 - EP); **G09G 2310/027** (2013.01 - EP)

Cited by

US6806854B2; EP1026656A3; US6914592B2; GB2367176A; CN100423076C; US7259757B2; EP0600499A1; US5534885A; GB2399935A; GB2399935B; US6606045B2; US7176876B2; EP1026656A2; US6512469B1; US6750792B2; US7049983B2; US7355534B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 0458169 A2 19911127**; **EP 0458169 A3 19930203**; KR 910020627 A 19911220; KR 940005242 B1 19940615

DOCDB simple family (application)

**EP 91107810 A 19910514**; KR 910008017 A 19910515