Title (en)

Display module drive circuit having a digital source driver capable of generating multi-level drive voltages from a single external power source

Title (de)

Steuerschaltung für eine Anzeigeeinheit mit digitaler Sourcesteuerung zur Erzeugung von Mehrfachpegelsteuerspannungen aus einer einzelnen externen Energiequelle

Title (fr)

Circuit de contrÔle pour un système d'affichage avec un circuit d'attaque de source numérique, capable de générer des tensions d'attaque à plusieurs niveaux en partant d'une seule source d'énergie externe

Publication

EP 0544427 B1 19970115 (EN)

Application

EP 92310381 A 19921113

Priority

JP 31231991 A 19911127

Abstract (en)

[origin: EP0544427A2] A display module drive circuit has a gate driver and a source driver. The source driver has a shift register (1), a sampling memory (2), a hold memory (3), a timing signal generating circuit (4), a voltage control circuit (5), and an output voltage generating circuit (6) having a capacitor and a switch. The timing signal generating circuit (4) generates timing signals (T0-T7) having different pulse widths in each of horizontal periods. The number of the timing signals (T0-T7) depends on the number of density levels of an image to be displayed. Upon receipt of digital video signals (HnD0, HnD1, HnD2) and the timing signals (T0-T7), the voltage control circuit (5) selects one of the timing signals (T0-T7) based on the contents of the video signals (HnD0, HnD1, and HnD2) in each horizontal period and outputs a control signal (CON1, CON2) at a specified level for a period corresponding to the pulse width of the selected timing signal. The capacitor of the output voltage generating circuit (6) is charged with an external power voltage while the control signal (CON1, CON2) is being received by the switch, so that a drive voltage is generated. The external power voltage is supplied from an external power source offering an electrical potential which becomes higher with time. <IMAGE>

IPC 1-7

G09G 3/36

IPC 8 full level

G09G 3/20 (2006.01); **G09G 3/36** (2006.01); **G09G 5/00** (2006.01)

CPC (source: EP KR)

G09G 3/2011 (2013.01 - EP); **G09G 3/36** (2013.01 - KR); **G09G 3/3688** (2013.01 - EP); G09G 3/2014 (2013.01 - EP); G09G 2310/027 (2013.01 - EP); G09G 2310/066 (2013.01 - EP); G09G 2320/0276 (2013.01 - EP)

Cited by

CN102842278A; CN115128573A; EP0644522A1; US5508715A; US7443371B2; EP1041535A1

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

EP 0544427 A2 19930602; **EP 0544427 A3 19930721**; **EP 0544427 B1 19970115**; DE 69216785 D1 19970227; DE 69216785 T2 19970724; JP H05150737 A 19930618; KR 930010837 A 19930623; KR 960016342 B1 19961209

DOCDB simple family (application)

EP 92310381 A 19921113; DE 69216785 T 19921113; JP 31231991 A 19911127; KR 920022056 A 19921121