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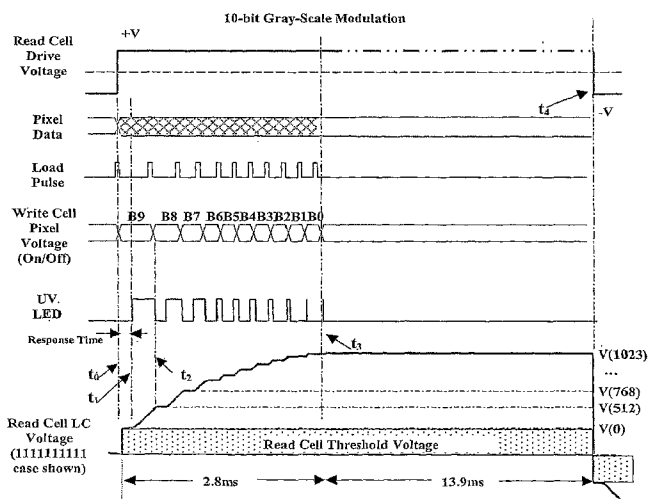
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(54) Title: AN OPTICALLY ADDRESSED GRAY SCALE ELECTRIC CHARGE-ACCUMULATING SPATIAL LIGHT MODULATOR



(57) Abstract: A technique for modulating light by an optically addressed, electric charge accumulating spatial light modulator achieves substantially monotonic gray scale response. Embodiments digitally modulate the voltage across a photoreceptive material included in the spatial light modulator. The digital modulation scheme entails illuminating the photoreceptor with a series of light pulses propagating from an LCoS, in which the durations of the light pulses and their positions in time combine to produce binary-weighted equivalent rms voltages on the photoreceptor. The light pulses originate from a light-emitting diode or other switchable light source, and the timing of the light pulses is controlled such that they are emitted only when the associated LCoS is in a stable state. Emitting light pulses while the LCoS is in a stable state avoids non-monotonic behavior.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/12959

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G02F 1/135 (2007.10)

USPC - 349/25

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8): G02F 1/135 (2007.10); USPC: 349/25

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 349/25-27 (keyword limited -- see keywords below)Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
PubWEST, SCHOLAR GOOGLE: optically addressed spatial light modulator, OASLM, electrically addressed spatial light modulator, EASLM, monotonic, greyscale, grayscale, pulse, pixel, light valve, spatial light modulator, SLM, liquid-crystal-on-silicon, LCOS, pulse width modulated, PWM, duty factor modulation, DFM

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,927,748 B2 (HUGHES et al.) 09 August 2005 (09.08.2005), entire document; Abstract; col 4, ln 22-65; col 4, ln 22-38; Fig 1; col 7, ln 16-30; Fig 3; col 7, ln 38-42; col 7, ln 16-30; Fig 1; col 8, ln 21-35; Fig 5; col 5, ln 15-23; Fig 1.	1-36
Y	US 6,232,963 B1 (TEW et al.) 15 May 2001 (15.05.2001), entire document; Abstract; col 3, ln 62-col 4, ln 2; col 2, ln 53-65; col 7, ln 13-31; Fig 4A-B; col 5, ln 5-10; col 7, ln 46-51; col 3, ln 1-3.	1-36
Y	US 6,072,452 A (WORLEY, III et al.) 06 June 2000 (06.06.2000), entire document; Abstract; col 12, ln 40-col 13, ln 6; Fig 10; col 3, ln 45-51; col 6, ln 12-20.	9-10, 12, 22-23, 25, 34 and 36
Y	US 5,178,445 A (MODDEL et al.) 12 January 1993 (12.01.1993), entire document; Abstract; col 10, ln 67-col 11, ln 6; col 4, ln 12-14.	2, 15 and 27
Y	US 5,917,568 A (JOHNSON et al.) 29 June 1999 (29.06.1999), entire document; Abstract; col 2, ln 11-20; col 2, ln 28-29.	3, 16 and 28
Y	US 6,795,064 B2 (WALKER et al.) 21 September 2004 (21.09.2004), entire document; Abstract; col 6, ln 44-48; col 8, ln 47-49; col 4, ln 19-29.	13

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"&amp;" document member of the same patent family

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