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(12) **United States Patent**
Halfant

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(54) **FACTORED ZERO-DIAGONAL MATRIX FOR ENHANCING THE APPEARANCE OF MOTION ON AN LCD PANEL**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1503 days.

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(65) **Prior Publication Data**

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Related U.S. Application Data

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(57) **ABSTRACT**

(51) **Int. Cl.**
G09G 3/36 (2006.01)

(52) **U.S. Cl.** **345/87; 345/98; 345/99; 345/204**

(58) **Field of Classification Search** **345/87, 345/98–99, 204**

See application file for complete search history.

A method for reducing a response time of the pixels corresponding to a period of time required for a selected pixel at a starting pixel value to reach a target pixel value. Providing an n×n factored zero diagonal LCD overdrive matrix and for a selected pixel at a particular start pixel value, selecting a particular target pixel value to be reached in one frame time, and determining a particular overdrive pixel value based upon the particular start pixel value and the particular target pixel value using the factored zero diagonal LCD overdrive matrix. When the start pixel value and the target pixel value are equal or almost equal in value, then setting the overdrive pixel value to a main diagonal pixel value such that the start pixel value is equal to the target pixel value.

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10 Claims, 2 Drawing Sheets

