

(51) International Patent Classification:
G09G 3/36 (2006.01) **G09G 3/32** (2006.01)(US). **DUNN, William** [US/US]; 1600 Union Hill Road,
Alpharetta, GA 30005 (US).(21) International Application Number:
PCT/US2010/037282(74) Agents: **STANDLEY, Jeffrey, S.** et al.; Standley Law
Group LLP, 6300 Riverside Drive, Dublin, OH 43017
(US).(22) International Filing Date:
3 June 2010 (03.06.2010)(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/183,592 3 June 2009 (03.06.2009) US(71) Applicant (for all designated States except US): **MANU-
FACTURING RESOURCES INTERNATIONAL
INC.** [US/US]; 1600 Union Hill Road, Alpharetta, GA
30005 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WASINGER, Jerry**
[US/US]; 1600 Union Hill Road, Alpharetta, GA 30005(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,

[Continued on next page]

(54) Title: DYNAMIC DIMMING LED BACKLIGHT

(57) Abstract: A system and method for controlling subsections of an LED backlight for a liquid crystal display (LCD). Exemplary embodiments analyze the histograms for each subsection of the LCD which corresponds with the subsections of the LED backlight in order to produce a proper luminance for the backlight subsection. The proper luminance may be less than the maximum or typical luminance that is produced by common LED backlights. By reducing the luminance the resulting display can have less power consumption, longer lifetime, and higher contrast ratios. The original subpixel voltages for the LCD are re-scaled based on the proper luminance for the backlight subsection. Virtual backlight data may be created to simulate the luminance at each subpixel and the virtual backlight data may be used to re-scale the original subpixel voltages. The virtual backlight data may be used to blend between adjacent subsections of the LED backlight which may be producing different levels of luminance.

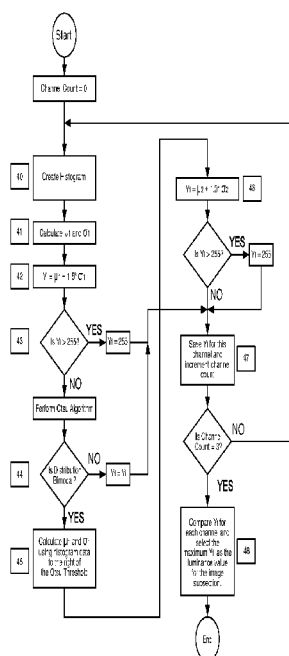


FIG - 4



EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))*

Published:

— *with international search report (Art. 21(3))*

(88) Date of publication of the international search report:

24 February 2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/037282**A. CLASSIFICATION OF SUBJECT MATTER****G09G 3/36(2006.01)i, G09G 3/32(2006.01)i**

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)

G09G 3/36; G06F 15/16; H04J 3/22; H04B 7/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: backlight, histogram, data, contrast, power and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2006-0214904 A1 (KAZUTO KIMURA et al.) 28 September 2006 See paragraphs [0040]–[0112] and figures 1,6.	1,5–11
Y	US 2008-0074372 A1 (MASAHIRO BABA et al.) 27 March 2008 See paragraphs [0035]–[0067] and figure 1.	1,5–8
Y	US 2005-0140848 A1 (JANG JIN YOO et al.) 30 June 2005 See paragraphs [0122]–[0132] and figure 11D.	9–11
A	JP 2002-366121 A (MATSUSHITA ELECTRIC IND. CO., LTD.) 20 December 2002 See paragraphs [0111]–[0119] and figures 24–26.	1–19

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

13 DECEMBER 2010 (13.12.2010)

Date of mailing of the international search report

20 DECEMBER 2010 (20.12.2010)

Name and mailing address of the ISA/KR

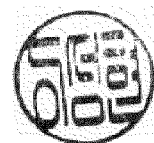
Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Sung Hyun

Telephone No. 82-42-481-8504



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/037282

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