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(21) International Application Number: PCT/GB99/04260 (22) International Filing Date: 16 December 1999 (16.12.99) (30) Priority Data: 9827944.1 19 December 1998 (19.12.98) GB (71) Applicant (for all designated States except US): THE SECRETARY OF STATE FOR DEFENCE [GB/GB]; Defence Research and Evaluation Agency, Ively Road, Farnborough, Hampshire GU14 0LX (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): COKER, Timothy, Martin [GB/GB]; 4 Brewery Court, South Road, Oundel, Peterborough PE8 4DZ (GB). CROSSLAND, William, Alden [GB/GB]; University of Cambridge, Engineering Department, Trumpington Street, Cambridge CB2 1PZ (GB). (74) Agents: GODDARD, David, John; Harrison Goddard Foote, 1 Stockport Road, Marple, Stockport SK6 6BD, (GB) et al.		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: MODIFIED WEIGHTED BIT PLANES FOR DISPLAYING GREY LEVELS ON OPTICAL ARRAYS		
(57) Abstract In a method of multi-level spatial light modulation, using a weighted bit plane technique where an n-digit binary number represents the intended grey level of each pixel location in an array of binary pixels, representative binary numbers are altered to closely adjacent values such as to reduce the inequality of 1s and 0s therein. The method may be applied to a single frame so modifying the gray scale somewhat, or a multi-frame method may be used in which at least some binary numbers are altered to different values in different frames for reducing the inequality of 1s and 0s over the set of frames, while maintaining or approximating the gray scale value as a time average. The methods are particularly useful for maintaining or approximating pixel-wise dc balance in liquid crystal spatial array modulators.		