

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 September 2001 (27.09.2001)

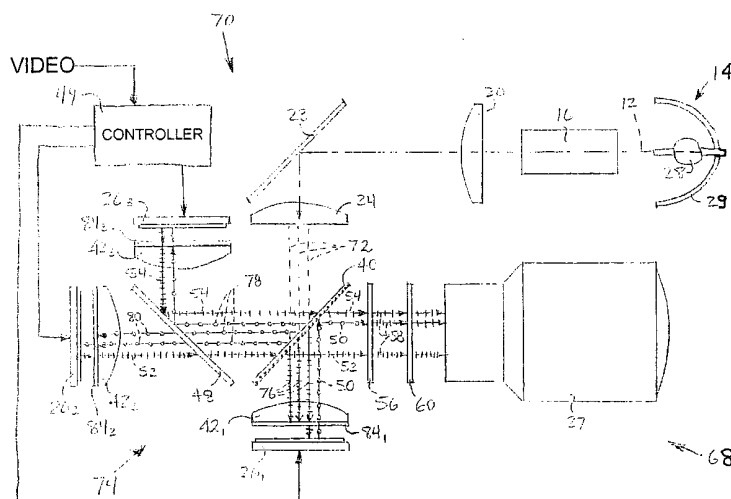
PCT

(10) International Publication Number  
**WO 01/72048 A3**

- (51) International Patent Classification<sup>7</sup>: **H04N 9/31** (74) Agent: **PREISS, Richard, B.**; Stoel Rives LLP, Suite 2600, 900 SW Fifth Avenue, Portland, OR 97204-1268 (US).
- (21) International Application Number: **PCT/US01/09039**
- (22) International Filing Date: **21 March 2001 (21.03.2001)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
**09/535,427** **23 March 2000 (23.03.2000)** **US**
- (71) Applicant (for all designated States except US): **INFOCUS CORPORATION** [US/US]; 27700B SW Parkway Avenue, Willsonville, OR 97070 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, MZ, 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.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, 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, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **STAHL, Kurt** [US/US]; 1107 S Cherry Lane, Lake Oswego, OR 97034 (US). **GOHMAN, Jeffrey, A.** [US/US]; 21525 Ornduff Road, Hillsboro, OR 97123 (US).
- Published:  
— with international search report
- (88) Date of publication of the international search report:  
**14 February 2002**

[Continued on next page]

(54) Title: **COLOR VIDEO PROJECTION SYSTEM EMPLOYING REFLECTIVE LIQUID CRYSTAL DISPLAY DEVICES**



(57) Abstract: In an image projector (8, 68), a light source (14) illuminates a plate-type polarizing beam splitter (40) that transmits P-polarized light rays and reflects S-polarized light rays (34). The P-polarized range light rays transmit through a green filter (84<sub>1</sub>) and impinge on a first reflective LCD light valve (26<sub>1</sub>). The S-polarized light rays strike a dichroic filter (48), which divides them into red and blue light rays (44, 46) that impinge on respective second and third LCD light valves (26<sub>2</sub>, 26<sub>3</sub>). Green light rays impinging on illuminated state pixels on the first LCD light valve are reflected with a 90° polarization change and are reflected by the polarizing beam splitter toward the projection lens. Red and blue light rays impinging on illuminated state pixels on the second and third LCD light valves are reflected with a 90° polarization change and transmit through the polarizing beam splitter toward the projection lens.

WO 01/72048 A3



*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 01/09039

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04N9/31

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 7 H04N G02B

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

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

EPO-Internal, WPI Data, INSPEC, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ANONYMOUS: "High Brightness Color Liquid Crystal Display Projector" IBM TECHNICAL DISCLOSURE BULLETIN, vol. 40, no. 12, 1 December 1997 (1997-12-01), pages 165-167, XP000754127 New York, US	16,23, 25,26
A	the whole document -----	1

☐ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*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

23 October 2001

Date of mailing of the international search report

08/11/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Wahba, A