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(71) Applicant: HAND HELD PRODUCTS, INC. [US/US];  
4619 Jordan Road, Skaneateles, NY 13153 (US).

(72) Inventors: HENNICK, Robert, J.; 303 McIntosh Drive,  
Auburn, NY 13021 (US). BARBER, Charles, P.; 5004  
Lakeview Drive, Fayetteville, NY 13066 (US). COLE-  
MAN, Eric; 12 Huckleberry Lane, Liverpool, NY 13090  
(US). EHRHART, Michael; 3711 Black Brant Drive,  
Liverpool, NY 13090 (US). GANNON, Colleen, P.; 3726  
Chamberlin Road, Jordan, NY 13080 (US). GARDINER,  
Robert, C.; 7274 Dabney Lane, Fayetteville, NY 13066

(US). HAVENS, William, H.; 25 South Street, Apt.  
13-33, Marcellus, NY 13108 (US). HUNTER, Vivian, L.;  
3732 Inclination Drive, Baldwinsville, NY 13027 (US).  
MCCALL, Melvin, D.; 5481 East Homer-Baltimore  
Road, Homer, NY 13077 (US). RUHLMAN, Thomas; 47  
East Lake Road, Skaneateles, NY 13152 (US).

(74) Agent: BLASIAK, George, B.; Wall Marjama & Bilin-  
ski LLP, 101 South Salina Street, Suite 400, Syracuse, NY  
13202 (US).

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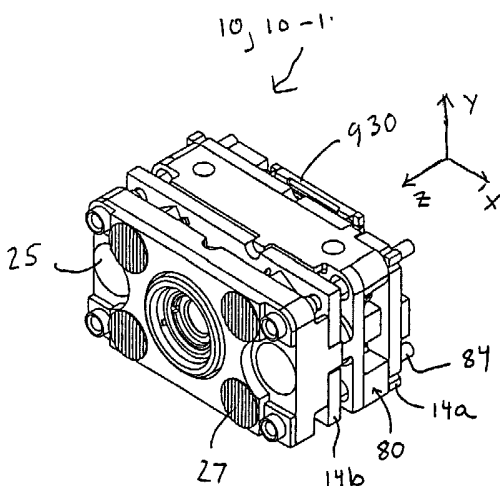
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[Continued on next page]

(54) Title: OPTICAL READER IMAGING MODULE



(57) Abstract: An imaging module (10) in one  
embodiment includes a printed circuit board, (14A)  
an image sensor electrically connected to the printed  
circuit board, a support assembly (80) for supporting  
at least one optical element, and an illumination  
system for generating an illumination pattern onto  
a target. The illumination system may include  
illumination light sources and diffusers for diffusing  
light from the illumination light sources. The  
module may further include an aiming system having  
an aiming light source, an aperture for stopping  
light from the aiming light source, and an optical  
element for projecting an aiming pattern into target  
area. Either or both of the illumination and aiming  
systems may include light redirecting elements such  
as mirrors or prisms.



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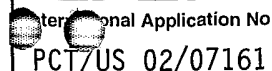
*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT



A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06K7/10 G06K7/12 G02B7/02 G02B5/02		
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 G06K H05K 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, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 850 078 A (BARILE JOHN ET AL) 15 December 1998 (1998-12-15) column 4, line 25-38; figure 1 column 5, line 31-47 ---	1,3
A	US 5 763 864 A (O'HAGAN TIMOTHY P ET AL) 9 June 1998 (1998-06-09) column 4, line 3 -column 5, line 2; figure 1 ---	1
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> 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  28 November 2002		Date of mailing of the international search report  20. 12. 2002
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  de Ronde, J.

## INTERNATIONAL SEARCH REPORT


 International Patent Application No.  
PCT/US 02/07161

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 02/07161

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-4

Imaging module comprising two circuit boards and a post hole defined in each of the boards

2. Claims: 5-8

Optical reader comprising a multi-color light source

3. Claims: 9-16,26-38

Imaging module comprising aiming light source

4. Claims: 17-22

Optical reader comprising a lens assembly retainer

5. Claims: 23-25

Imaging module comprising a diffuser

## INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No  
PCT/US 02/07161

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