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- (71) Applicant (for all designated States except US): **FLIR SYSTEMS, INC.** [US/US]; 27700 SW Parkway Avenue, Wilsonville, Oregon 97070 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **NUSSMEIER, Mark** [US/US]; Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US). **KURTH, Eric A.** [US/US];

Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US). **HÖGASTEN, Nicholas** [SE/US]; Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US). **HOELTER, Theodore R.** [US/US]; Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US). **STRANDEMAR, Katrin** [SE/SE]; Vastergarden 8171, SE-76294 Rimbo (SE). **BOULANGER, Pierre** [US/US]; Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US). **SHARP, Barbara** [US/US]; Flir Systems, Inc., 70 Castilian Drive, Goleta, California 93117-3027 (US).

(74) Agent: **FOLSOM, Brent A.**; Haynes And Boone, LLP, 2323 Victory Avenue, Suite 700, Dallas, Texas 75219-7673 (US).

(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, QA, RO, RS, RU, RW, SC, SD,

[Continued on next page]

(54) Title: LOW POWER AND SMALL FORM FACTOR INFRARED IMAGING

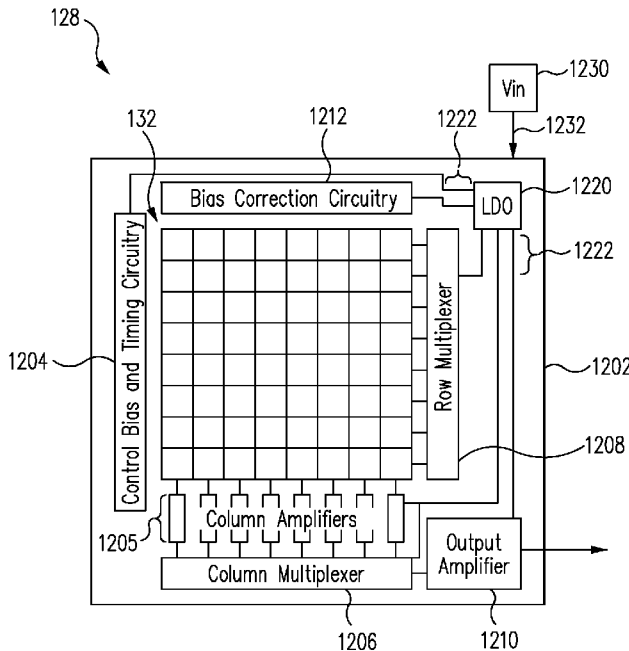


FIG. 12

(57) Abstract: Various techniques are provided for implementing an infrared imaging system. In one example, a system includes a focal plane array (FPA). The FPA includes an array of infrared sensors adapted to image a scene. The FPA also includes a bias circuit adapted to provide a bias voltage to the infrared sensors. The bias voltage is selected from a range of approximately 0.2 volts to approximately 0.7 volts. The FPA also includes a read out integrated circuit (ROIC) adapted to provide signals from the infrared sensors corresponding to captured image frames. Other implementations are also provided.

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SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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23 May 2013

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see Notice of 4 April 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/041744

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04N5/33
ADD.
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)
H04N

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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/058352 A1 (JACKSEN NIELS F [US] ET AL) 16 May 2002 (2002-05-16)	1-4,6,8,9,20-23,25,27,28
Y	abstract; figures 1,2 paragraph [0025] - paragraph [0028] -----	5,7,10,24,26,29
Y	US 2009/303363 A1 (BLESSINGER MICHAEL A [US]) 10 December 2009 (2009-12-10) abstract paragraph [0005] - paragraph [0006] -----	5,24
Y	WO 00/23814 A1 (RAYTHEON CO [US]) 27 April 2000 (2000-04-27) abstract figure 1 page 6, line 10 - page 8, line 3 ----- -/--	10,29

Further documents are listed in the continuation of Box C.

See patent family 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 application or patent 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 6 February 2013	Date of mailing of the international search report 14/02/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Dolezel, Tomáš
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/041744

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2004 241491 A (SEIKO EPSON CORP) 26 August 2004 (2004-08-26) abstract page 5 -----	7,26

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/041744

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: **11-19, 30-58**
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

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 fees, this Authority did not invite payment of additional fees.

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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 11-19, 30-58

The present application contains 58 claims, of which 6 are independent (claims 1,11,39 are device claims and claims 20,30,49 are their associated method claims). There is no clear distinction between the independent claims because of overlapping scope. The set of claims is drafted in such a way that the claims as a whole are not in compliance with the provisions of conciseness of Article 6 PCT, as it is particularly burdensome for a skilled person to establish the subject-matter for which protection is sought. The non-compliance with the substantive provisions is to such an extent, that the search was performed taking into consideration the non-compliance in determining the extent of the search (PCT Guidelines 9.19 and 9.25). The search was based on the subject-matter that, as far as it can be understood, could reasonably be expected to be claimed later in the procedure, i.e. on the corresponding claims 1-10,20-29.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/041744

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002058352	A1	16-05-2002	AU 1310802 A
			EP 1328964 A1
			IL 155223 A
			US 6690012 B1
			US 2002058352 A1
			WO 0231864 A1

US 2009303363	A1	10-12-2009	NONE

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			WO 0023814 A1

JP 2004241491	A	26-08-2004	NONE
