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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: SILICON PHOTOMULTIPLIER TRIGGER NETWORK

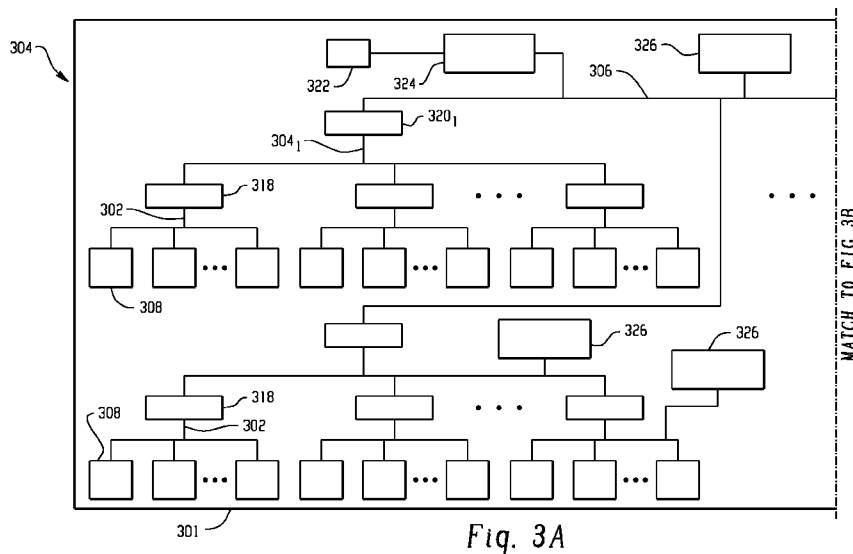


Fig. 3A

(57) Abstract: An apparatus (208) includes a plurality of photosensors (310). Photon trigger signals produced in response to signals from the sensors are received by a trigger line network that includes segment (302), intermediate (304), and master (306) lines. The trigger network is configured to reduce a temporal skew introduced by the trigger line network. Validation logic (324) provides a trigger validation output signal (610).

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

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2008/053164

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G01T1/164 G01T1/24

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)
 G01T

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2006/111883 A (KONINKL PHILIPS ELECTRONICS NV [NL]; PHILIPS CORP [US]; FRACH THOMAS []) 26 October 2006 (2006-10-26) page 1, line 29 - page 2, line 6 page 12, line 3 - line 20	1
A	JP 2001 244446 A (YOKOGAWA ELECTRIC CORP) 7 September 2001 (2001-09-07) abstract	1

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 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

20 July 2009

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02/10/2009

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2008/053164

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.:
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 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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

1-15, 16-24

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

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

1. claims: 1-15,16-24

An apparatus comprising a plurality of photon trigger circuits, and a plurality of trigger lines; the trigger lines are arranged in a hierarchical structure that includes a first level and a second level, wherein the first level includes a first trigger line that receives trigger signals from a plurality of the trigger circuits, and a first repeater that receives trigger signals from the first trigger line of the first level, and wherein the second level includes a second trigger line that receives trigger signals from the first repeater.

2. claims: 25-36,37-42

An apparatus comprising a first trigger line which receives photon trigger signals from a first plurality of photosensors, and a second trigger line which receives photon trigger signals from a second plurality of photosensors.

3. claims: 43-49

A method for validating the photon trigger signals according to a validation criterion, whereby the criterion can be changed, and then the validation procedure can be repeated.

4. claims: 50-55

An apparatus comprising a signal-validator, whereby the inputs to the signal validator are arranged to reduce the crosstalk between the input signals.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2008/053164

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006111883 A	26-10-2006	EP 1875271 A2	09-01-2008
		JP 2008538606 T	30-10-2008
		KR 20080009082 A	24-01-2008
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