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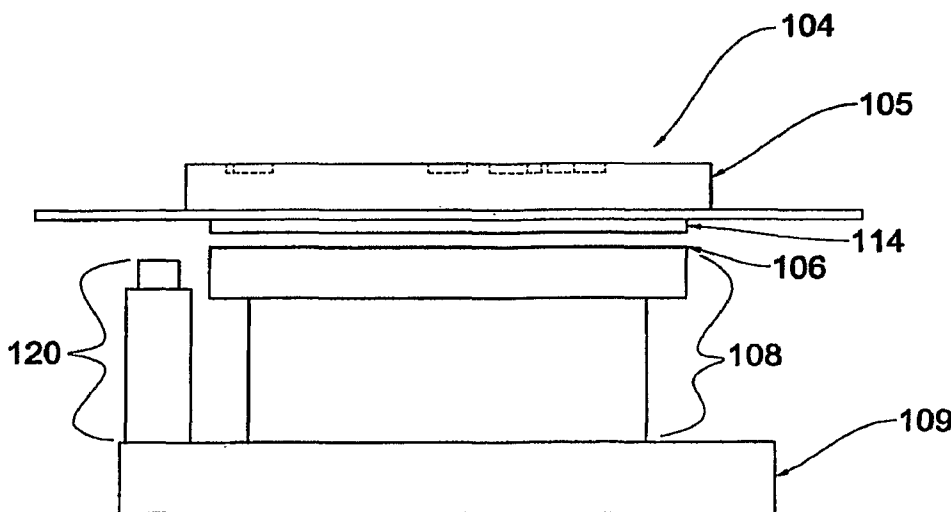
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(54) Title: ACTIVE PROBE CONTACT ARRAY MANAGEMENT



(57) Abstract: Methods and apparatus are described for controlling orientation of a probe contact array relative to a wafer contact array on a wafer. The probe contact array is configured on a probe card having first kinematic reference features associated therewith. The wafer is positioned in a wafer prober having an interface with second kinematic features. The first and second kinematic features are together operable to restrain relative motion between the probe card and the wafer prober when the probe card and the interface are docked. The orientation of the probe contact array relative to the wafer contact array is determined. Where the probe contact array is out of alignment with the wafer contact array, a height of at least one of the kinematic reference features is adjusted to bring the probe contact array and the wafer contact array into substantial alignment.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/02084

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G01R 31/02 (2007.10)

USPC - 324/758

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(8) - G01R 31/02 (2007.10)

USPC - 324/754, 757, 758

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)

USPTO EAST System (US, USPG-PUB, USOCR), MicroPatent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,861,759 A (BIALOBRODSKI et al) 19 January 1999 (19.01.1999) entire document	1, 8, 9, 12, 13, 15, 21, 25, 31, 33
Y	US 2005/0116729 A1 (KOESTER et al) 02 June 2005 (02.06.2005) entire document	2-7, 10, 11, 14, 16-20, 22-24, 26-30, 32
Y	US 6,674,627 B1 (KUND) 06 January 2004 (06.01.2004) entire document	2-7, 14, 16-20, 26-30
Y	US 6,762,612 B2 (YU et al) 13 July 2004 (13.07.2004) entire document	4, 5, 11, 18, 19, 28, 29
Y	US 6,762,612 B2 (YU et al) 13 July 2004 (13.07.2004) entire document	10, 22, 32
Y	US 6,784,678 B2 (PIETZSCHMANN) 31 August 2004 (31.08.2004) entire document	14, 23, 24
A	US 6,496,026 B1 (LONG et al) 17 December 2002 (17.12.2002) entire document	1-33

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

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INTERNATIONAL SEARCH REPORT

International application No.

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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 extra 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 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.:

1-33

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.