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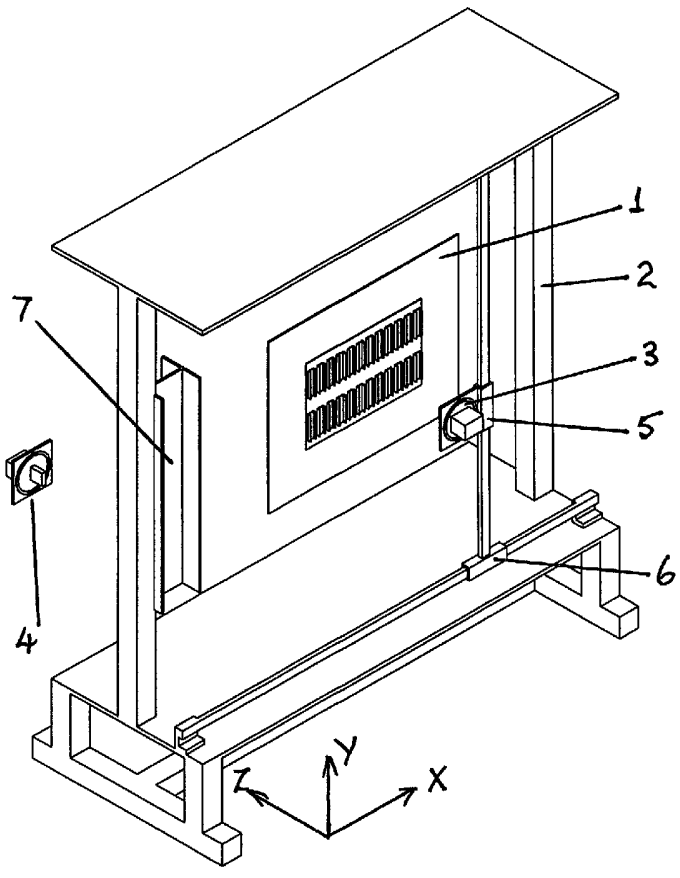
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Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv)) for US only*

[Continued on next page]

(54) **Title:** AUTOMATIC TEST MACHINE FOR TESTING PRINTED CIRCUIT BOARDS



(57) **Abstract:** An automatic test machine for testing printed circuits boards (1) comprising a rotation test-head (3, 4); means for track capacitance measurement (51-70); dual-purpose test pins (70-75); and a module construction (13, 14, 83-85,87-90) based on adapter cards (83, 90).

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INTERNATIONAL SEARCH REPORT

PCT/GB2004/001523

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01R31/28 G01R1/073 G01R31/04

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 G01R

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/77697 A (BARKER COLIN GRAHAM) 18 October 2001 (2001-10-18) abstract; claims 1-3,8,10; figures page 11, paragraph 1 page 12, paragraph 4 page 13, last line page 14, paragraph 4	1,2,4
X	EP 1 059 538 A (NIHON DENSAN READ KABUSHIKI KA) 13 December 2000 (2000-12-13) abstract; claim 3; figures 3,4	1,2
X	EP 0 962 777 A (NIHON DENSAN READ KABUSHIKI KA) 8 December 1999 (1999-12-08) abstract; claim 4; figures 3,12	1,2
A	paragraph '0089!	4

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
22 October 2004	02. 11. 2004

Name and mailing address of the ISA	Authorized officer
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	Fritz, S

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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.
X	US 6 268 719 B1 (SWART MARK A) 31 July 2001 (2001-07-31) column 4, line 45 - line 52; figures column 6, line 57 - line 59	1,2
X	US 5 994 909 A (LUCAS BRIAN K ET AL) 30 November 1999 (1999-11-30) abstract; figures	1,2
X	WO 00/39595 A (LUCAS BRIAN K ; COLLINGBOURNE ERIC D (GB); PROTEUS CORP (US)) 6 July 2000 (2000-07-06) page 5, line 14 - line 15; claim 15; figures	1,2
X	US 6 064 195 A (CLAYTON GARY A ET AL) 16 May 2000 (2000-05-16) abstract; figures	1,2
X	EP 0 354 124 A (AEROSPATIALE) 7 February 1990 (1990-02-07) abstract; figures	1,2
X	US 5 357 191 A (GRACE JAMES R) 18 October 1994 (1994-10-18) abstract; claims 1,5,11,12; figures 1,3,5	1,4
X	GB 2 307 754 A (FUJITSU AUTOMATION) 4 June 1997 (1997-06-04) abstract; figures 1,3 page 9, line 5 - line 10	1,4
X	US 4 565 966 A (BURR ROBERT P ET AL) 21 January 1986 (1986-01-21) abstract; figures 1,2C,4 column 5, line 39 - line 45	1,4
X	US 5 006 808 A (WATTS VIVIAN C) 9 April 1991 (1991-04-09) abstract; figure 1 column 3, line 36 - line 45 column 6, line 24 - line 40	1,4
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 01, 30 January 1998 (1998-01-30) -& JP 09 230005 A (HIOKI EE CORP), 5 September 1997 (1997-09-05) abstract; figures 1-3 paragraph '0027! - paragraph '0029! paragraph '0032! - paragraph '0034! -/--	1,2,4

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 572 060 A (IBM) 1 December 1993 (1993-12-01) abstract; claims 1,4,11,15,17; figures 3,16	1,4
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INTERNATIONAL SEARCH REPORT

PCT/GB2004/001523

Box 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 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 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.:

1 (in part),2,4

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(in part),2

   Automatic test machine for testing printed circuit boards with a rotating test-head

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2. claims: 1(in part),3

   Method of testing printed circuit boards with single probe track capacitance measurement

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3. claims: 1(in part),4

   Automatic test machine for testing printed circuit boards with dual-purpose test pins

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4. claims: 1(in part), 5 to 7

   Method of constructing variable, close, and compact contact adapter modules for an automatic test machine for testing printed circuit boards

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INTERNATIONAL SEARCH REPORT

PCT/GB2004/001523

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