(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 20 March 2008 (20.03.2008)

(10) International Publication Number WO 2008/033428 A3

(51) International Patent Classification: G01R 31/02 (2006.01) H05K 3/36 (2006.01) G01R 31/28 (2006.01)

(21) International Application Number:

PCT/US2007/019863

(22) International Filing Date:

12 September 2007 (12.09.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/844,139 60/921,812

US 12 September 2006 (12.09.2006) 3 April 2007 (03.04.2007) US

(71) Applicant (for all designated States except US): INNO-CONNEX, INC. [US/US]; 7260 Scarsdale Place, San Jose, California 95120 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MOK, Sammy [US/US]; 10360 Estates Drive, Cupertino, California 95014 (US). SWIATOWIEC, Frank [US/US]; 7260 Scarsdale Place, San Jose, California 95120 (US). AGAHDEL, Fariborz [US/US]; 15931 Overlook Drive, Los Gatos, California 95030 (US).

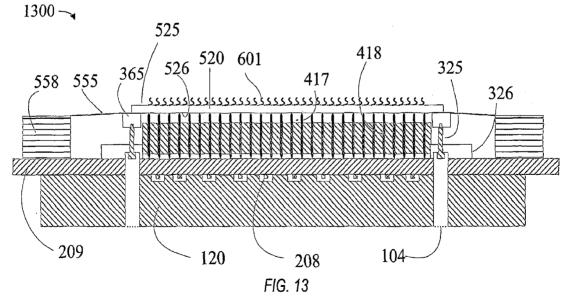
- (74) Agent: MILLERS, David; 1221 Sun Ridge Road, Placerville, California 95667 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

(88) Date of publication of the international search report: 27 November 2008

(54) Title: COMPLIANCE PARTITIONING IN TESTING OF INTEGRATED CIRCUITS



(57) Abstract: Probecard architectures partition the spring compliance required for IC testing between several different components. Such architectures can provide shorter springs, better impedance control, improved power/ground distribution and more direct paths to tester electronics. The probecards can also use thinner interconnector substrates to conform to the planarity of a DUT and may suspend such a substrate by wires attached to a perimeter edge of the substrate to permit the substrate to tilt. Tilting can also be facilitated by positioning tester-side springs away from the perimeter of the substrate. Low compliance MEMS probes for such architectures can be provided on replaceable coupons having attachment points away from electrical connections, and a method for fabricating probe springs can plate spring material on a membrane deformed by contact with a bumped substrate.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/19863

A. CLASSIFICATION OF SUBJECT MATTER IPC: G01R 31/02(2006.01);G01R 31/28(2006.01);H05K 3/36(2006.01)					
USPC: 324/754,158.1;29/830 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) U.S.: 324/754,158.1;29/830;438/128,14					
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)					
C. DOCI	JMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages			Relevant to claim No.	
X	US 5,806,181 A (Khandros et al) 15 September 1998 (15.09.1998), see whole document			1-2, 6-12, 14-23, 25-32, 35-36 13, 24, 33-34	
Y	US 5,806,181 A (Khandros et al) 15 September 1998 especially Figure 7	, (
Further	documents are listed in the continuation of Box C.		See patent family annex.		
	pecial categories of cited documents:	"T"	later document published after the inter-	national filing date or priority	
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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		"X"	date and not in conflict with the applica principle or theory underlying the inven document of particular relevance; the cl	aimed 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		
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		"&" document member of the same patent family			
-			Date of mailing of the international search report		
31 July 2008 (31.07.2008) Authorized officer / Aut					
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Ha Nguyen July 2721592 Telephone No. (\$71) 2721592			

Form PCT/ISA/210 (second sheet) (April 2007)