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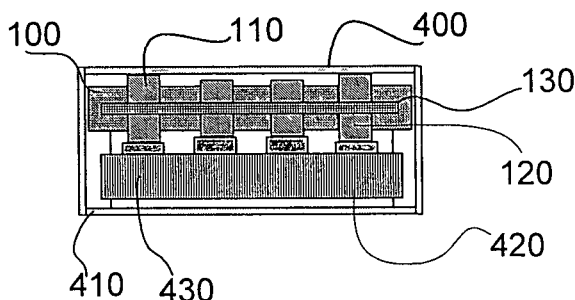
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17 July 2008

(54) Title: MALE DATA COMMUNICATION CONNECTOR HAVING CONTACTS OF DIFFERENT HEIGHT

cross sectional view on B-B



(57) Abstract: A multi-contact connector (100) having a set of contacts (110, 120) supported on a planar substrate (130) in proper spatial alignment for engaging corresponding contacts (420) of a female receptacle (400) having an internal shield (410). At least one contact in the contact set has an active surface that is offset relative to the planar substrate by a greater distance than the respective active surfaces of other contacts in the contact set so as to mechanically create a space between the shield and the other contacts of the contact set when the connector is inserted within the receptacle. A pair of contact sets may also be provided, each on an opposite surface of the planar substrate.



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INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2007/001470

A. CLASSIFICATION OF SUBJECT MATTER

INV. H01R13/26 H01R13/62 H01R13/658

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)

HOIR

Documentation searched other than minimum documentation b 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.
Y	US 2005/042930 A1 (HARKABI DAN [IL] ET AL) 24 February 2005 (2005-02-24) paragraphs [0037] - [0039]; figures 7-9; table 1	11,16, 17,21,24
A	paragraph [0037] - paragraph [0039]; figures 7-9; table 1	1
Y	US 6 854 984 B1 (LEE EDWARD W [US] ET AL) 15 February 2005 (2005-02-15)	11-16,21
A	column 1, line 8 - line 10 figures 3,4A,6A,6D	1
Y	EP 0 036 770 A (PINTEK INC [US]) 30 September 1981 (1981-09-30) page 5, line 5 - line 6; figure 1	11-17, 21,23
	-/--	

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

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19/05/2008

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INTERNATIONAL SEARCH REPORT

International application No
PCT/IL2007/001470

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 319 070 B1 (TAN ZUOXI [CN]) 20 November 2001 (2001-11-20) figure 1 -----	11
A	US 5 600 544 A (THALHAMMER ERICH [DE]) 4 February 1997 (1997-02-04) figure 1 -----	11
X	US 2004/224539 A1 (BOYD SCOTT J [US] ET AL) 11 November 2004 (2004-11-11) paragraphs [0025], [0026], [0032] -----	22,28
Y	-----	16,23,24

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2007/001470**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.:

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/ASA/ 210

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

1. claims: 1-10

"A male multi-contact data connector having two sets of contacts supported on opposite surfaces of a planar substrate, respective contacts in each contact set being in proper spatial alignment for engaging corresponding contacts of a female receptacle having an internal shield and a single set of contacts that is compatible with either one of said sets of contacts, wherein: corresponding contacts in each set are spatially aligned in anti-phase relationship so as to allow the connector to be connected in two opposed orientations to said female receptacle".

2. claims: 11-21

"A multi-contact male data communication connector having no outer shield and comprising at least one shield contact configured to connect electrically to the internal shield of a female receptacle when the connector is inserted into the female receptacle".

3. claims: 22-28

"A male data communication connector comprising a magnet for securing electrical contact of the connector with a receptacle".

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2007/001470

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005042930	A1	24-02-2005	NONE
US 6854984	B1	15-02-2005	US RE40115 E1 26-02-2008 us 2005059301 A1 17-03-2005 us 7104848 B1 12-09-2006 us 2005059273 A1 17-03-2005 us 2005085133 A1 21-04-2005 us 7182646 B1 27-02-2007 us 7186147 B1 06-03-2007
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