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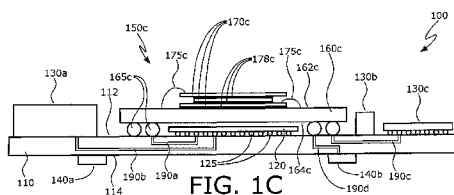
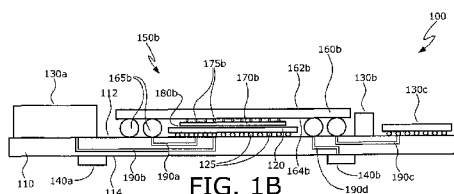
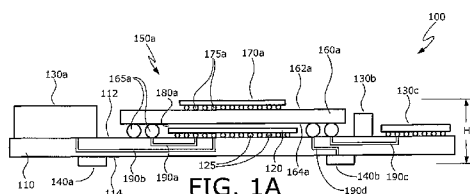
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(54) Title: MAINBOARD ASSEMBLY INCLUDING A PACKAGE OVERLYING A DIE DIRECTLY ATTACHED TO THE MAINBOARD



(57) Abstract: Disclosed are embodiments of a system-level assembly including an integrated circuit (IC) die directly attached to a mainboard. An IC die directly attached to a mainboard or other circuit board may be referred to as a direct-chip attach (DCA) die. A package is disposed over at least a portion of the DCA die and coupled with the mainboard. The package includes one or more other IC die disposed on a substrate. Other embodiments are described and claimed.



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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER		
<i>H01L 23/48(2006.01)i, H01L 23/12(2006.01)i</i>		
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) H01L 23/48; H01L 21/00; H01L 23/02		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models Japanese utility models and applications for utility models (Chinese Patents and application for patent)		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal) & Keywords: DCA, package, main board		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0197209 A1 (CHOI, BONGSUK et al.) 07 September 2006 See paragraphs 23-30, figure 1, and claims 1, 6, 16.	1-17
A	US 2007-0187826 A1 (SHIM, IL KWON et al.) 16 August 2007 See paragraphs 24-28, figure 1, and claims 1, 16.	1-17
A	US 2008-0042274 A1 (BANG, KYONG-MO et al.) 21 February 2008 See paragraphs 34-35, figure 4, and claims 1, 9, 12.	1-17
A	US 2006-0208348 A1 (TOHRU OHSAKA et al.) 21 September 2006 See paragraphs 80-82, figure 1, and claim 1.	1-17
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 application or patent 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 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 30 MARCH 2010 (30.03.2010)	Date of mailing of the international search report 01 APRIL 2010 (01.04.2010)	
Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer KIM, KEON HYEONG Telephone No. 82-42-481-8509 	

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Information on patent family members

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