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(54) Title: METHOD OF THERMOCOMPRESSSION BONDING OF LASER-ETCHED COPPER PADS TO COB MODULE

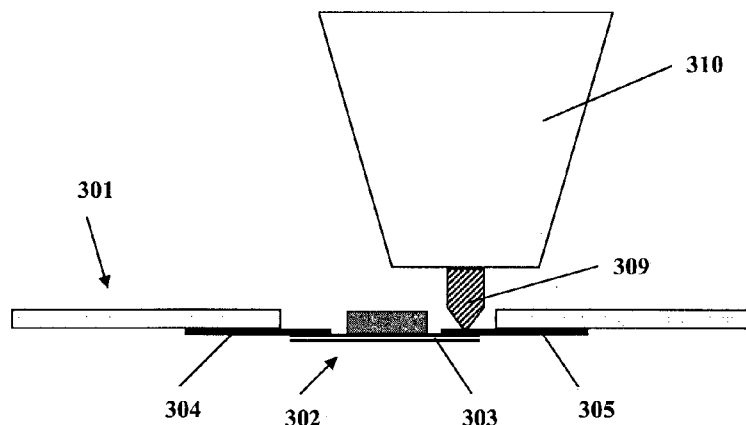


Fig. 3C

(57) Abstract: The present invention provides an RFID board comprising antenna and chip-on board module, wherein the antenna having two terminals in a form of pads, is bonded to lead frame of the chip-on-board module via thermocompression bonding, without the use of any intermediate electrically conductive materials. A method to fabricate the RFID board via thermocompression bonding is also provided herewith.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/MY2012/000116**A. CLASSIFICATION OF SUBJECT MATTER****G06K 19/077(2006.01)i, B23K 26/20(2006.01)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)

G06K 19/077; H05K 1/18; H01Q 17/00; H01Q 1/40; G06K 19/067; H05K 3/00; G06K 19/06; H01L 21/52; B32B 37/14

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: RFID, lead frame, antenna, pad, thermo-compression bonding

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2011-0011939 A1 (LINDA SEAH) 20 January 2011 See abstract, paragraphs [77],[84] and claims 1,2,5,11.	1,7 2-6,8-14
A	US 2010-0038432 A1 (ANDREAS MUELLER-HIPPER et al.) 18 February 2010 See abstract, paragraph [31], claims 1,4 and figure 2.	1-14
A	US 2008-0283615 A1 (DAVID FINN) 20 November 2008 See abstract, paragraph [93] and claim 1.	1-14
A	US 2009-0166431 A1 (HIROSHI AOYAMA) 02 July 2009 See abstract, paragraph [45] and claims 1,8.	1-14
A	EP 1544787 A1 (AXALTO SA) 22 June 2005 See abstract and claims 1,4.	1-14



Further documents are listed in the continuation of Box C.



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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011-0011939 A1	20.01.2011	CN 101971194 A EP 2232414 A1 EP 2232414 A4 WO 2009-078810 A1	09.02.2011 29.09.2010 04.05.2011 25.06.2009
US 2010-0038432 A1	18.02.2010	DE 102008037817 A1	25.02.2010
US 2008-0283615 A1	20.11.2008	AT 497223 T AU 2007-349611 A1 AU 2007-358536 A1 AU 2007-358536 B2 CA 2664872 A1 CA 2669643 A1 CA 2740994 A1 CN 101573716 A CN 101627400 A DE 602008004762 D1 EP 2070013 A2 EP 2070014 A2 EP 2070016 A1 EP 2070016 B1 EP 2070017 A1 EP 2070017 B1 EP 2147401 A1 EP 2147401 B1 EP 2332097 A2 EP 2499602 A1 JP 2010-505212 A JP 2010-541189 A KR 10-1108361 B1 KR 10-2009-0058585 A KR 10-2009-0066309 A KR 10-2012-0082021 A US 2006-0293954 A1 US 2008-0072423 A1 US 2008-0073800 A1 US 2008-0155822 A1 US 2008-0179404 A1 US 2008-0183640 A1 US 2008-0276271 A1 US 2008-0308641 A1 US 2009-0213027 A1 US 2009-0229109 A1 US 2009-0315320 A1 US 2010-0031322 A1 US 2010-0141453 A1 US 2011-0023289 A1 US 2011-0247197 A1 US 2012-0080527 A1	15.02.2011 25.09.2008 12.03.2009 22.12.2011 25.09.2008 12.03.2009 04.03.2010 04.11.2009 13.01.2010 10.03.2011 17.06.2009 17.06.2009 17.06.2009 19.01.2011 17.06.2009 27.04.2011 27.01.2010 26.01.2011 15.06.2011 19.09.2012 18.02.2010 24.12.2010 25.01.2012 09.06.2009 23.06.2009 20.07.2012 28.12.2006 27.03.2008 27.03.2008 03.07.2008 31.07.2008 31.07.2008 06.11.2008 18.12.2008 27.08.2009 17.09.2009 24.12.2009 04.02.2010 10.06.2010 03.02.2011 13.10.2011 05.04.2012

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/MY2012/000116

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 7546619 B2	09.06.2009
		US 7546671 B2	16.06.2009
		US 7581308 B2	01.09.2009
		US 7949586 B2	24.05.2011
		US 7971339 B2	05.07.2011
		US 7979975 B2	19.07.2011
		US 7980477 B2	19.07.2011
		US 8091208 B2	10.01.2012
		US 8240022 B2	14.08.2012
		US 8322624 B2	04.12.2012
		WO 2008-037579 A1	03.04.2008
		WO 2008-037592 A1	03.04.2008
		WO 2008-114091 A2	25.09.2008
		WO 2008-114091 A3	25.09.2008
		WO 2008-141990 A1	27.11.2008
		WO 2009-030979 A2	12.03.2009
		WO 2009-030979 A3	12.03.2009
		WO 2010-023272 A2	04.03.2010
		WO 2010-023272 A3	04.03.2010
		WO 2011-054697 A1	12.05.2011
		WO 2011-138109 A1	10.11.2011
		WO 2011-154061 A1	15.12.2011
US 2009-0166431 A1	02.07.2009	CN 101160597 A0	09.04.2008
		JP 05-036541 B2	13.07.2012
		JP W020-061124 47A1	26.10.2006
		WO 2006-112447 A1	26.10.2006
EP 1544787 A1	22.06.2005	WO 2005-062245 A1	07.07.2005