(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 4 October 2007 (04.10.2007)

(10) International Publication Number WO 2007/112044 A3

(51) International Patent Classification: A61N 1/32 (2006.01)

(21) International Application Number:

PCT/US2007/007337

(22) International Filing Date: 23 March 2007 (23.03.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/785,881 24 March 2006 (24.03.2006) US 60/827,621 29 September 2006 (29.09.2006) US

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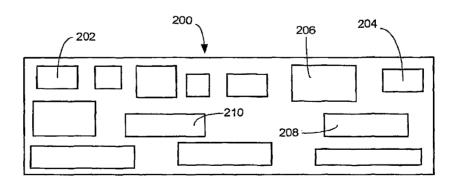
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, 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
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 21 December 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPLANTABLE MEDICAL DEVICE



(57) Abstract: An implantable medical device includes a housing and a circuit board provided within the housing. The circuit board includes a plurality of electronic components electrically coupled thereto. At least one non-functional component is provided on the circuit board and formed from a material that has an electromagnetic permeability configured to reduce the amount of image distortion caused by at least one of the plurality of electronic components when the device is subject to a magnetic field during an MRI scan.





INTERNATIONAL SEARCH REPORT

International application No PCT/US2007/007337

A. CLASSIFICATION OF SUBJECT MATTER INV. A61N1/32								
According to International Patent Classification (IPC) or to both national classification and IPC								
According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED								
	ocumentation searched (classification system followed by classification	on symbols)						
A61B	A61N							
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)								
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C. DOCUME	ENTS CONSIDERED TO BE RELEVANT	***						
Category*	Citation of document, with indication, where appropriate, of the rel	evant passages	Relevant to claim No.					
Α	US 2005/137670 A1 (CHRISTOPHERSON	N MARK A	1-19					
	[US] ET AL) 23 June 2005 (2005-06	5–23)	1 15					
•	paragraphs [0024] - [0026]; figur							
Α	WO 03/096894 A (HENRY M JACKSON FOUNDATION 1-19							
	[US]; HO VINCENT B [US]; O'NEILL JOHN T [US) 27 November 2003 (2003-11-27)							
	page 16, paragraph 1							
' '								
Further documents are listed in the continuation of Box C. X See patent family annex.								
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other means ments, such combination being obvious to a person skilled in the art.								
later than the priority date claimed "&" document member of the same patent family								
Date of the actual completion of the international search Date of mailing of the international search report								
28	8 September 2007	16/10/2007						
Name and m	nalling 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 ni, Fax: (+31-70) 340-3016 Edward, Vinod								
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/007337

Ī	Patent document cited in search report		Publication date		Patent family member(s)	Publication date
Ī	US 2005137670	A1	23-06-2005	NONE		
	WO 03096894	A	27-11-2003	AU CA EP JP US	2003230409 A1 2485490 A1 1505905 A1 2005525864 T 2005187464 A1	02-12-2003 27-11-2003 16-02-2005 02-09-2005 25-08-2005
- 1						

Form PCT/ISA/210 (patent family annex) (April 2005)