

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 September 2009 (11.09.2009)

(10) International Publication Number
WO 2009/111664 A3

(51) International Patent Classification:

A61K 9/00 (2006.01) G06K 5/00 (2006.01)
G08B 1/08 (2006.01) A61M 31/00 (2006.01)
G08B 13/14 (2006.01)

(21) International Application Number:

PCT/US2009/036231

(22) International Filing Date:

5 March 2009 (05.03.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/034,085 5 March 2008 (05.03.2008) US

(71) Applicant (for all designated States except US): **PROTEUS BIOMEDICAL, INC.** [US/US]; 2600 Bridge Parkway, Suite 101, Redwood City, CA 94065 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROBERTSON, Timothy** [US/US]; 2719 Sequoia Way, Belmont, CA 94002 (US). **ZDEBLICK, Mark, J.** [US/US]; 300 La Mesa Drive, Portola Valley, CA 94028 (US).

(74) Agent: **FIELD, Bret**; Bozicevic Field & Francis LLP, 1900 University Avenue, Suite 200, East Palo Alto, CA 94303 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, 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, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

[Continued on next page]

(54) Title: MULTI-MODE COMMUNICATION INGESTIBLE EVENT MARKERS AND SYSTEMS, AND METHODS OF USING THE SAME

FIG. 1A

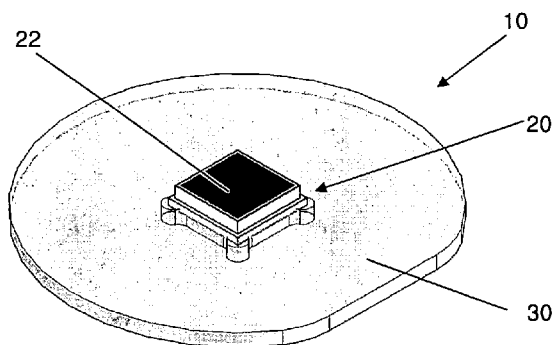
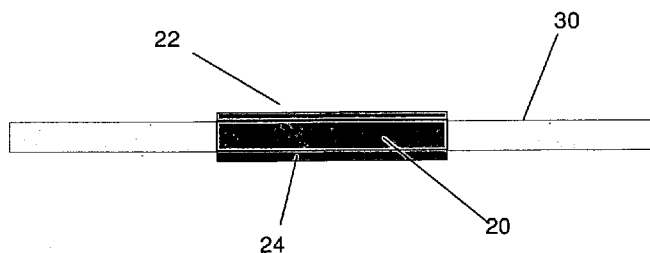


FIG. 1B



(57) Abstract: Aspects of the invention include multi-mode communication ingestible event marker devices. Ingestible event marker devices of the invention include an ingestible component comprising a conductive communication module and at least one additional non-conductive communication module. The non-conductive communication module may be integrated with the ingestible component or at least a portion or all of the non-conductive communication module may be associated with a packaging component of the ingestible event marker device. Additional aspects of the invention include systems that include the devices and one or more receivers, as well as methods of using the same.



(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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, 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 (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

3 December 2009

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/036231**A. CLASSIFICATION OF SUBJECT MATTER***A61K 9/00(2006.01)i, G08B 1/08(2006.01)i, G08B 13/14(2006.01)i, G06K 5/00(2006.01)i, A61M 31/00(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)

IPC : as above

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)

KOMPASS(KIPO internal), WIPO, PUBMED

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2006/0061472 A1 (TAGENT CORPORATION) 23 March 2006 See abstract; figures 2-3; paragraphs [0002], [0007]-[0012], [0020]-[0022], [0059]-[0061]; claims 1-23.	1-60
Y	US 2007/0008113 A1 (EASTMAN KODAK COMPANY) 11 January 2007 See abstract; figures 1-19; paragraphs [0002], [0012]-[0014], [0022]-[0030]; claims 1-7.	1-60
Y	US 2007/0213659 A1 (KONINKLIJKE PHILIPS ELECTRONICS, N.V.) 13 September 2007 See abstract; paragraphs [0001]-[0011]; claims 1-27	1-60
Y	US 2006/0065713 A1 (KINGERY, J.R.) 30 March 2006 See abstract; paragraphs [0001], [0004]-[0015]; claims 1-60.	1-60

 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 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

14 OCTOBER 2009 (14.10.2009)

Date of mailing of the international search report

15 OCTOBER 2009 (15.10.2009)

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

HAN, Jung Hee

Telephone No. 82-42-481-5604



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/036231

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006-0061472 A1	23.03.2006	US 07253716 B2	07.08.2007
		US 07317378 B2	08.01.2008
		US 2006-0038658 A1	23.02.2006
		WO 2006-023601 A2	02.03.2006
		WO 2006-055892 A2	26.05.2006
		WO 2006-055892 A3	26.05.2006
US 2007-0008113 A1	11.01.2007	AU 2006-262680 A1	04.01.2007
		CN 101277671 A	01.10.2008
		EP 1895967 A2	12.03.2008
		JP 2008-546472 A	25.12.2008
		US 2007-0008112 A1	11.01.2007
		WO 2007-001742 A3	31.05.2007
		WO 2007-001742 A2	04.01.2007
US 2007-0213659 A1	13.09.2007	EP 1789128 A1	30.05.2007
		JP 2008-510558 A	10.04.2008
		WO 2006-021932 A1	02.03.2006
US 2006-0065713 A1	30.03.2006	WO 2006-036372 A1	06.04.2006