



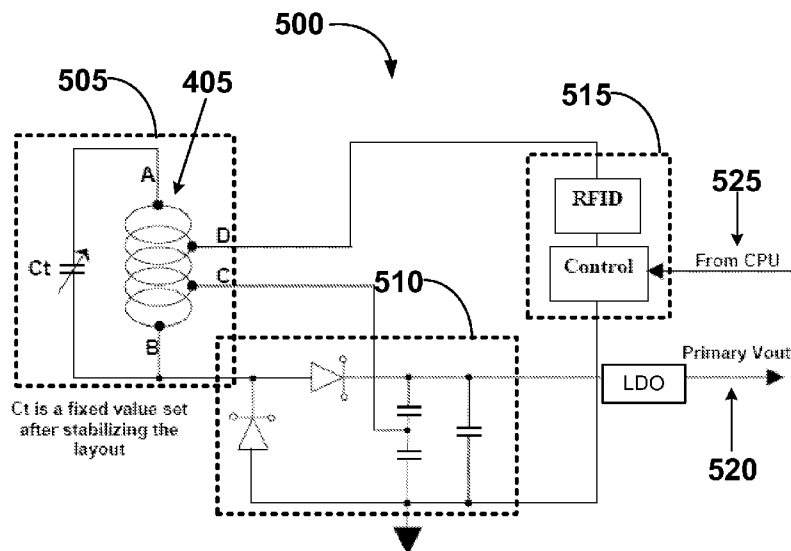
- (51) **International Patent Classification:**  
*H04B 5/02* (2006.01)      *G06K 17/00* (2006.01)
- (21) **International Application Number:**  
PCT/US2009/054074
- (22) **International Filing Date:**  
17 August 2009 (17.08.2009)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/089,440      15 August 2008 (15.08.2008)      US
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- (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, CL, 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, PE, 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.
- (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, SM, 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))

[Continued on next page]

(54) **Title:** RF POWER CONVERSION CIRCUITS & METHODS, BOTH FOR USE IN MOBILE DEVICES



**FIG. 5**

(57) **Abstract:** This patent application teaches and describes radio frequency (RF) power conversion circuits and methods both for use in mobile devices (such as smart cards). Embodiments of the present invention include wireless personal ID cards or dongle including a fingerprint sensor. A fingerprint matching system can reside on cards. Power provided to the fingerprint sensor and on board processor(s) can be provided by a wireless signal provided to the card. The card can include an RF power conversion circuit configured to receive wireless RF energy and convert the wireless energy for powering electronics on the card. Other aspects, embodiments, and features of the present invention are also claimed and described.

WO 2010/019961 A3

**(88) Date of publication of the international search report:**  
17 June 2010

**A. CLASSIFICATION OF SUBJECT MATTER****H04B 5/02(2006.01)i, G06K 17/00(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 9: H04B, G06K, H01Q, H04K, H04L

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) &amp; Keywords:antenna, RFID, tag, biometric

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 2005-0240778 A1 (SAITO) 27 October 2005 See the abstract, paragraphs [0031-0034], [0036], [0051], [0076], and figures 1-9, 20.	11-15,26-30 1-5,7-8,10,22-25 6,9,16-21
X Y A	US 2003-0226041 A1 (PALMER et al.) 04 December 2003 See the abstract, paragraphs [0022-0026], [0029], [0050-0051], and figures 1, 3, 9.	11-15,26-30 1-5,7-8,10,22-25 6,9,16-21
Y A	US 2007-0164122 A1 (JU) 19 July 2007 See the abstract, figure 2, and claim 1.	1-5,7-8,10 6,9,11-30
Y A	US 5945920 A1 (MALETSKY) 31 August 1999 See the abstract and claim 1.	22-25 1-21,26-30

 Further documents are listed in the continuation of Box C. See patent family annex.

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"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

15 APRIL 2010 (15.04.2010)

Date of mailing of the international search report

**16 APRIL 2010 (16.04.2010)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
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Facsimile No. 82-42-472-7140

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**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/US2009/054074**

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-2008-0013213 A (KOREA ELECTRONICS TECHNOLOGY INSTITUTE) 13 February 2008	22-25
A	See the abstract and figure 4.	1-21,26-30

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2009/054074**

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