



(43) International Publication Date
26 October 2012 (26.10.2012)

- (51) International Patent Classification:
G06F 3/044 (2006.01) G06F 3/041 (2006.01)
- (21) International Application Number:
PCT/IB2011/003284
- (22) International Filing Date:
30 December 2011 (30.12.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/477,128 19 April 2011 (19.04.2011) US
13/247,779 28 September 2011 (28.09.2011) US
- (72) Inventors; and
- (71) Applicants : **KREMIN, Viktor** [UA/UA]; Kerchenska Str, 9-44, Lviv, 79035 (UA). **OGIRKO, Roman** [UA/UA]; Naukova Str. 24/68, Lviv, 79601 (UA).
- (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,

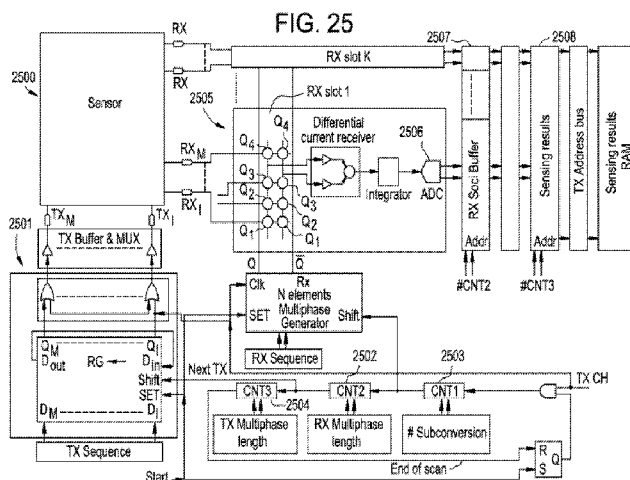
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, 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, RS, 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))
- (88) Date of publication of the international search report:
4 April 2013

(54) Title: CAPACITIVE PANEL SCANNING WITH REDUCED NUMBER OF SENSING CIRCUITS



(57) Abstract: Embodiments described herein provide capacitive sensor devices and methods for operating capacitive sensor devices. A first number of electrodes on the capacitive sensor array is activated. A signal is received from each of the first number of electrodes with a second number of receiver circuits on a controller associated with the capacitive sensor array. The first number is greater than the second number. It is determined if an object is proximate the capacitive sensor array based on the signals received from the first number of electrodes.

WO 2012/143752 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/003284

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G06F3/044 G06F3/041
 ADD.
 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)
 G06F

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)
 EPO-Internal, WPI Data

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 2008/079699 A1 (MACKEY BOB LEE [US]) 3 April 2008 (2008-04-03) paragraph [0018] paragraph [0021] - paragraph [0023] paragraph [0032] - paragraph [0035] paragraph [0056] paragraph [0060] - paragraph [0061] figures 2, 6 <p style="text-align: center;">----- -/--</p>	1,11,16 2-10, 12-15, 17-20

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 another 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 23 January 2013	Date of mailing of the international search report 04/02/2013
---	---

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Bedarida, Alessandro
--	---

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2011/003284

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011/055305 A1 (MATSUSHIMA KENICHI [JP]) 3 March 2011 (2011-03-03) paragraph [0004] paragraph [0015] - paragraph [0019] paragraph [0036] paragraph [0062] paragraph [0069] paragraph [0086] - paragraph [0089] paragraph [0102] paragraph [0107] paragraph [0113] formulas 9, 13, 14, 15, 16, 18 figure 1	1-20
X	----- US 2010/244859 A1 (CORMIER JR RONALD F [US] ET AL) 30 September 2010 (2010-09-30) the whole document -----	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2011/003284

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008079699 A1	03-04-2008	US 2008079699 A1	03-04-2008
		WO 2008042674 A1	10-04-2008

US 2011055305 A1	03-03-2011	JP 2011047774 A	10-03-2011
		US 2011055305 A1	03-03-2011

US 2010244859 A1	30-09-2010	NONE	
