(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 17 March 2005 (17.03.2005)

(10) International Publication Number WO 2005/024869 A3

(51) International Patent Classification⁷:

H03M 11/00

(21) International Application Number:

PCT/US2004/027469

- (22) International Filing Date: 24 August 2004 (24.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:

10/650,286

28 August 2003 (28.08.2003)

- (71) Applicant (for all designated States except US): MO-TOROLA, INC., a corporation of the State of Delware [US/US]; 1303 East Algonquin Road, Schaumburg, Illinois 60196 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): YU, Huinan, J. [CN/US]; 395 Mayfair Lane, Buffalo Grove, Illinois 60089 (US). LI, Zili [CN/US]; 5045 Bardwick Court, Barrington, Illinois 60010 (US). TRACY, James, L. [US/US]; 4626 N.W. 57th Lane, Coral Springs, Florida 33067 (US). VAKIL, Bharat, N. [US/US]; 380 N.W. 101 Terrace, Coral Springs, Florida 33071 (US). YANG, Sen [CN/US]; 774 E. Whispering Oaks Court, Palatine, Illinois 60074 (US). ZHUANG, Zhiming [US/US]; 395 Mayfair Lane, Buffalo Grove, Illinois 60089 (US).
- (74) Agents: BROWN, Larry, G. et al.; 8000 West Sunrise Boulevard, Room 1610, Plantation, Florida 33322 (US).

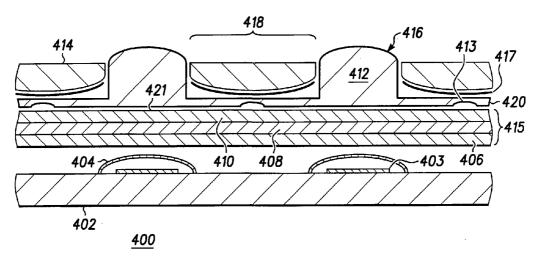
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, IT, LU, MC, 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: 9 March 2006

[Continued on next page]

(54) Title: KEYPAD WITH ILLUMINATION STRUCTURE



(57) Abstract: An illuminated keypad (400) includes a substantially transparent keypad (420) having a plurality of actuator buttons (412), a plurality of switches (404) residing substantially and correspondingly below the plurality of actuator buttons, a display laminate layer (415) residing between the plurality of actuator buttons and the plurality of switches, and a light source (417) reflectively illuminating a pattern of a symbol on the laminate layer by radiating light through the substantially transparent keypad. The display laminate can include a driver layer (406) having a conductor pattern configured in the pattern of the symbol to be displayed on the substantially transparent keypad, a transparent conductor layer (410), and an electrically active ink layer (408) disposed between the transparent conductor layer and the driver layer.

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/27469

IPC(7) : H03M 11/00 US CL : 200/310						
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) U.S.: 200/310, 314, 448; 341/22, 31						
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) Please See Continuation Sheet						
C. DOCUMENTS CONSIDERED TO BE RELEVANT						
Category *	Citation of document, with indication, where appropriate, of the relevant passages					
Α	US 5,573,107 A (NAKANO et al.) 12 November 1996, see entire document.		1-10			
A	US 5,661,279 A (KENMOCHI) 26 August 1997, see entire document. 1-10		1-10			
Α	US 5,797,482 A (LAPOINTE et al.) 25 August 1998, see entire document.		1-1-			
Α	US 5,510,782 A (NORRIS et al.) 23 April 1996, see entire document.		1-10			
			·			
			·			
•						
Further	documents are listed in the continuation of Box C.	See patent family				
* Special categories of cited documents:			ned after the international filing date or priority at with the application but cited to understand the			
	defining the general state of the art which is not considered to be of relevance	principle or theory un-	, •			
"E" earlier application or patent published on or after the international filing date		"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				
"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)		"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				
"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		"&" document member of the same patent family				
Date of the actual completion of the international search		Date of mailing of the international state of mailing of the international state of the international				
09 January 2006 (09.01.2006) Name and mailing address of the ISA/US		Authorized officer	· Yahan			
Mail Stop PCT, Attn: ISA/US		Vennet Window VIIIIMO 204				
Commissioner for Patents P.O. Box 1450		Authorized officer Kenneth Wieder Telephone No. 571-272-2986				
P.O. Box 1450 Alexandria, Virginia 22313-1450 Telephone No. 571-272-2986			86			
Facsimile No. (571) 273-3201						

	International application No.			
INTERNATIONAL SEARCH REPORT	PCT/US04/27469			
·	<u> </u>			
·				
	!			
,				
Continuation of B. FIELDS SEARCHED Item 3:				
USPAT- US-PGPUB; USOCR; EPO; JPO; DERWENT; IBM-TDB				
illumination, keypad, keyboard				
	•			