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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/477 179	06/27/2006	Li GuangHai	CD06065	4534
60909 7590 04/01/2010 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER ZHOU HONG	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 04/01/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding
The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/477 179	Applicant(s) GUANGHAI LI	
	Examiner HONG ZHOU	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 February 2010
- 2a) This action is **FINAL** 2b) This action is non final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 22 and 24 31 is/are pending in the application
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) Claim(s) _____ is/are allowed
- 6) Claim(s) 22 and 24 31 is/are rejected
- 7) Claim(s) _____ is/are objected to
- 8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) The specification is objected to by the Examiner
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
 - a) All b) Some * c) None of
 - 1 Certified copies of the priority documents have been received
 - 2 Certified copies of the priority documents have been received in Application No. _____
 - 3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO 892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO 948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other _____

DETAILED ACTION

Response to Amendment

1 Applicant's amendment filed on February 5, 2010 has been entered. Claim 22 has been amended. Claims 22 and 24-31 are pending in this application, with claim 22 being independent claim.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 22 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. (US 2006/0232559, hereinafter Chien) in view of Gitzinger et al. (US 2006/0097992 hereinafter Gitzinger).

Regarding claim 22, Chien discloses an apparatus (see Fig. 15), comprising a sensing device (e.g., capacitive touchpad 950, [0031]) having a plurality of sensor elements (e.g., key operation conductor 9582) that are electrically coupled to detect a presence of a conductive object on the sensing device (e.g., detecting a finger of a user on the sensing device, see [0031]), wherein the plurality of sensor elements correspond to a plurality of button operations (the sensor elements correspond to keys 1, 2, and 3), a keyboard (see keys 1, 2, 3, Fig. 15, also see Fig. 12) coupled to the sensing device, wherein the keyboard comprises a plurality of keys (e.g., keys 1, 2, and 3 are corresponding to key operation conductor 9582 respectively, see Fig. 15) that correspond to the plurality of sensor elements, and a processing

device (e g , control circuit 802, Fig 12) coupled to the sensing device to distinguish a particular button operation from among the plurality of button operations when a particular key of the plurality of keys of the keyboard is pressed (see [0030]-[0032]), wherein the sensing device comprises a routing layer (9582, Fig 12) comprising the plurality of sensor elements, wherein the routing layer is coupled to the processing device (e g , control circuit 802, see Fig 12), a pad layer (954, Fig 15) comprising conductive material that corresponds to the plurality of keys (e g , conductor 954 are corresponding to keys 1, 2 and 3, see [0031]), wherein the conductive material of the particular key is detected by the routing layer when the particular key is pressed (see [0031]), and an insulating layer configured to electrically isolate the pad layer and the routing layer, wherein the insulating layer is disposed between the routing layer and the pad layer (see insulating layer 956 separates the pad layer 954 and routing layer 9682)

Chien discloses all the limitation of claim 1 except wherein the pad layer does not directly contact the routing layer when the particular key is pressed

Gitzinger discloses a keypad (see Fig 7 and [0036]) comprising a plurality of sensing elements having different discrete surfaces (826, 828, 830, see Fig 8 and [0037]) wherein the keypad comprises an insulating layer (e g , plastic housing member 722, Fig 8) and a routing layer (e g , 840) Gitzinger further discloses wherein a conductive object (e g , a user's finger) does not directly contact the routing layer when a key on the keypad is pressed (e g , the keypad is printed on the insulating layer, see [0036]), and a processing device (e g , controller 118, see Fig 3) obtains the position of the key on the keypad when a capacitance produced by the conductive object and a sensing element corresponding to the key changes (see [0029]-[0030])

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the insulating layer and the routing layer of Gitzinger in the apparatus of Chien to have a pad layer operated as a conductive object and to improve the apparatus by providing sensing elements with different discrete surfaces, because each of the discrete surfaces of the routing layer of Gitzinger would produce different capacitance when faced in close proximity by a conductive object. Furthermore, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Chien with the processing device of Gitzinger for distinguishing a particular key operation based on capacitive characteristics of each of discrete surfaces, because the processing device of Gitzinger allows a simpler interconnect, lower weight and improved reliability (see [0028] of Gitzinger).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings Chien and Gitzinger to obtain the inventionⁿ as specified in claim 22.

Regarding claim 24, Chien as modified by Gitzinger does not specifically disclose the apparatus of claim 22, further comprising a plastic film coupled between the plurality of keys and the pad layer of the sensing device.

It is well known in the art of keyboard assembly to provide a plastic film between a plurality of keys and a pad layer to form a protective dust and moisture seal and strengthen the keyboard assembly. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further provide a plastic film between a plurality of keys and a pad layer of Chien as modified by Gitzinger in order to protect the pad layer from dust and moisture.

Regarding claim 25, Chien as modified by Gitzinger disclose the apparatus of claim 22 Gitzinger further discloses wherein a first key of the plurality of keys has a larger corresponding conductive material than a second key of the plurality of keys (e g , a first key 3 has a larger corresponding copper trace 830 than copper trace 828 which corresponding to a second key 2, see Fig 8 and [0037])

Regarding claim 26, Chien as modified by Gitzinger discloses the apparatus of claim 25 Gitzinger further discloses wherein the processing device is configured to recognize that the first key has been pressed when the presence of the corresponding conductive material of the pad layer is detected on a first sensor element of the plurality of sensor elements in the routing layer (e g , the first key 3 has been pressed when a conductive object is detected on the first sensing element 830, see Figs 3, 7 and 8 of Gitzinger), and to recognize that the second key has been pressed when the presence of the corresponding conductive material of that pad layer is detected on a second sensor element of the plurality of sensor elements in the routing layer (e g , the second key 2 has been pressed when the conductive object is detected on the second sensing element 830, see Figs 3, 7 and 8 of Gitzinger)

Regarding claim 27, Chien as modified by Gitzinger discloses the apparatus of claim 22 Gitzinger further discloses wherein a first sensor element of the plurality of sensor elements in the routing layer comprises a first sensitivity (e g , the first sensor element corresponding to key A has a frequency range of F1-F2, see Fig 6) and a second sensor element of the plurality of

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sensor elements in the routing layer comprises a second sensitivity (e.g., the second sensor element corresponding to key B has a frequency range of F3-F4), wherein the first sensitivity is greater than the second sensitivity (the sensitivity of frequency range of F1-F2 is greater than the sensitivity of frequency range of F3-F4, see Fig. 6), and wherein the processing device (118) is configured to distinguish the particular key that has been pressed based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element (see Fig. 6 and [0034]-[0035]).

Regarding claim 28, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are electrically coupled (see Fig. 3).

Regarding claim 29, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are coupled to the processing device using one pin (see Fig. 3).

Regarding claim 30, Chien as modified by Gitzinger discloses the apparatus of claim 22. Gitzinger further discloses wherein the processing device is configured to determine a capacitance on the sensing device (e.g., measuring the time constant RC which includes a capacitance of finger on the capacitive sensing device 310, see [0029]-[0030]), and wherein the processing device is configured to recognize that a first key of the plurality of keys is pressed when the capacitance is greater than a first sensitivity threshold (e.g., detecting key A is pressed

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when the detected capacitance is greater than RC1 or frequency F1, see Fig 6 and [0034] [0035]) and that a second key of the plurality of plurality of keys is pressed when the capacitance is less than the first sensitivity threshold and greater than a second sensitivity threshold (detecting key B is pressed when the detected capacitance is less than the time constant RC1 or frequency F1 and greater than the time constant RC3 or frequency F3, see Fig 6)

Regarding claim 31, Chien as modified by Gitzinger discloses the apparatus of claim 30 Gitzinger further discloses wherein the first and second sensitivity thresholds are greater than a presence threshold (e g , the frequencies F1 and F3 are greater than frequency F5, Fig 6), wherein the presence threshold is configured to indicate the detected presence of the conductive object by the routing layer (e g , indicating the detected presence of a finger on key C)

Response to Arguments

4 Applicant's arguments with respect to claim 22 have been considered but are moot in view of the new ground(s) of rejection

Conclusion

5 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706 07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HONG ZHOU whose telephone number is (571)270-5372. The examiner can normally be reached on Monday through Friday 8:30 A.M. - 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H Z/
Examiner, Art Unit 2629

/Amare Mengistu/

Application/Control Number 11/477,179
Art Unit 2629

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Supervisory Patent Examiner, Art Unit 2629

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/477 179	06/27/2006	Li GuangHai	CD06065	4534
60909 7590 11/24/2010 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER ZHOU HONG	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 11/24/2010	DELIVERY MODE PAPER

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The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/477 179	Applicant(s) GUANGHAI LI	
	Examiner HONG ZHOU	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

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Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 October 2010

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 22 and 24, 31 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 22 and 24, 31 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

DETAILED ACTION

Response to Amendment

1 Applicant's amendment filed on October 10, 2010 has been entered. No claims have been amended. Claims 22 and 24-31 are pending in this application, with claim 22 being independent claim.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 22 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. (US 2006/0232559, hereinafter Chien) in view of Gitzinger et al. (US 2006/0097992, hereinafter Gitzinger).

Regarding claim 22, Chien discloses an apparatus (see Fig. 15), comprising a sensing device (e.g., capacitive touchpad 950, [0031]) having a plurality of sensor elements (e.g., key operation conductor 9582) that are electrically coupled to detect a presence of a conductive object on the sensing device (e.g., detecting a finger of a user on the sensing device, see [0031]), wherein the plurality of sensor elements correspond to a plurality of button operations (the sensor elements correspond to keys 1, 2 and 3), a keyboard (see keys 1, 2, 3, Fig. 15, also see Fig. 12) coupled to the sensing device, wherein the keyboard comprises a plurality of keys (e.g., keys 1, 2, and 3 are corresponding to key operation conductor 9582 respectively, see Fig. 15) that correspond to the plurality of sensor elements, and a processing

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device (e g , control circuit 802, Fig 12) coupled to the sensing device to distinguish a particular button operation from among the plurality of button operations when a particular key of the plurality of keys of the keyboard is pressed (see [0030]-[0032]), wherein the sensing device comprises

a routing layer (9582, Fig 12) comprising the plurality of sensor elements, wherein the routing layer is coupled to the processing device (e g , control circuit 802, see Fig 12),

a pad layer (954, Fig 15) comprising conductive material that corresponds to the plurality of keys (e g , conductor 954 are corresponding to keys 1, 2 and 3, see [0031]), wherein the conductive material of the particular key is detected by the routing layer when the particular key is pressed (see [0031]), and wherein the pad layer is disposed underneath the plurality of keys (Fig 15, the pad layer 954 is disposed underneath the keys 952), and

an insulating layer configured to electrically isolate the pad layer and the routing layer, wherein the insulating layer is disposed between the routing layer and the pad layer (see insulating layer 956 separates the pad layer 954 and routing layer 9682)

Chien discloses all the limitation of claim 1 except wherein the pad layer disposed underneath the plurality of keys does not directly contact the routing layer when the particular key is pressed

Gitzinger discloses a keypad (see Fig 7 and [0036]) comprising a plurality of sensing elements having different discrete surfaces (826, 828, 830, see Fig 8 and [0037]) wherein the keypad comprises an insulating layer (e g , plastic housing member 722, Fig 8) and a routing layer (e g , 840) Gitzinger further discloses wherein a conductive object (e g , a user's finger) does not directly contact the routing layer when a key on the keypad is pressed (e g , the keypad

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is printed on the insulating layer, see [0036]), and a processing device (e.g., controller 118, see Fig. 3) obtains the position of the key on the keypad when a capacitance produced by the conductive object and a sensing element corresponding to the key changes (see [0029]-[0030]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the insulating layer and the routing layer of Gitzinger in the apparatus of Chien for producing various capacitance by the pad layer 954 operated as a conductive object and the routing layer having sensing elements with different discrete surfaces, because each of the discrete surfaces of the routing layer of Gitzinger would produce different capacitance when faced in close proximity by a conductive object. Furthermore, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Chien with the processing device of Gitzinger for distinguishing a particular key operation based on capacitive characteristics of each of discrete surfaces, because the processing device of Gitzinger allows a simpler interconnect, lower weight and improved reliability (see [0028] of Gitzinger).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Chien and Gitzinger to obtain the invention as specified in claim 22.

Regarding claim 24, Chien as modified by Gitzinger does not specifically disclose the apparatus of claim 22, further comprising a plastic film coupled between the plurality of keys and the pad layer of the sensing device.

It is well known in the art of keyboard assembly to provide a plastic film between a plurality of keys and a pad layer to form a protective dust and moisture seal and strengthen the keyboard assembly. Thus, it would have been obvious to a person of ordinary skill in the art at

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the time the invention was made to further provide a plastic film between a plurality of keys and a pad layer of Chien as modified by Gitzinger in order to protect the pad layer from dust and moisture

Regarding claim 25, Chien as modified by Gitzinger disclose the apparatus of claim 22 Gitzinger further discloses wherein a first key of the plurality of keys has a larger corresponding conductive material than a second key of the plurality of keys (e g , a first key 3 has a larger corresponding copper trace 830 than copper trace 828 which corresponding to a second key 2, see Fig 8 and [0037])

Regarding claim 26, Chien as modified by Gitzinger discloses the apparatus of claim 25 Gitzinger further discloses wherein the processing device is configured to recognize that the first key has been pressed when the presence of the corresponding conductive material of the pad layer is detected on a first sensor element of the plurality of sensor elements in the routing layer (e g , the first key 3 has been pressed when a conductive object is detected on the first sensing element 830, see Figs 3, 7 and 8 of Gitzinger), and to recognize that the second key has been pressed when the presence of the corresponding conductive material of that pad layer is detected on a second sensor element of the plurality of sensor elements in the routing layer (e g the second key 2 has been pressed when the conductive object is detected on the second sensing element 830, see Figs 3, 7 and 8 of Gitzinger)

Regarding claim 27, Chien as modified by Gitzinger discloses the apparatus of claim 22. Gitzinger further discloses wherein a first sensor element of the plurality of sensor elements in the routing layer comprises a first sensitivity (e.g., the first sensor element corresponding to key A has a frequency range of F1-F2, see Fig. 6) and a second sensor element of the plurality of sensor elements in the routing layer comprises a second sensitivity (e.g., the second sensor element corresponding to key B has a frequency range of F3-F4), wherein the first sensitivity is greater than the second sensitivity (the sensitivity of frequency range of F1-F2 is greater than the sensitivity of frequency range of F3-F4, see Fig. 6), and wherein the processing device (118) is configured to distinguish the particular key that has been pressed based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element (see Fig. 6 and [0034]-[0035]).

Regarding claim 28, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are electrically coupled (see Fig. 3).

Regarding claim 29, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are coupled to the processing device using one pin (see Fig. 3).

Regarding claim 30, Chien as modified by Gitzinger discloses the apparatus of claim 22. Gitzinger further discloses wherein the processing device is configured to determine a

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capacitance on the sensing device (e.g., measuring the time constant RC which includes a capacitance of finger on the capacitive sensing device 310, see [0029]-[0030]), and wherein processing device is configured to recognize that a first key of the plurality of keys is pressed when the capacitance is greater than a first sensitivity threshold (e.g., detecting key A is pressed when the detected capacitance is greater than RC1 or frequency F1, see Fig. 6 and [0034]-[0035]) and that a second key of the plurality of keys is pressed when the capacitance is less than the first sensitivity threshold and greater than a second sensitivity threshold (detecting key B is pressed when the detected capacitance is less than the time constant RC2 or frequency F2 and greater than the time constant RC3 or frequency F3, see Fig. 6).

Regarding claim 31, Chien as modified by Gitzinger discloses the apparatus of claim 30. Gitzinger further discloses wherein the first and second sensitivity thresholds are greater than a presence threshold (e.g., the frequencies F1 and F3 are greater than frequency F5, Fig. 6), wherein the presence threshold is configured to indicate the detected presence of the conductive object by the routing layer (e.g., indicating the detected presence of a finger on key C).

Response to Arguments

4 Applicant's arguments, filed October 10, 2010, with respect to claim 22 have been fully considered but they are not persuasive.

On pages 5 and 6 of the Applicant's remarks, the Applicant argues that the combination of Chien and Gitzinger would require a substantial reconstruction and redesign of Chien as well as change the basic principle under which Chien's touchpad was designed to operate, thus one of

ordinary skill in the art would not have reason not be motivated to combine the cited references. The Examiner respectfully disagrees because (1) the principle operation of Chien is merely to trigger a key operation based on a voltage change, and merely using a first conductive layer connecting a second conductive layer through a hole of an insulting layer between the first conductive layer and the second conductive layer (2) the combination of Chien and Gitzinger would require a mere a substitution of the insulation layer with an insulting layer of Gitzinger that does not contain any holes and trigger a key operation based on a capacitance change between the first conductive layer and the second conductive layer, and which would require only routine skill in the art (3) the combination of Chien and Gitzinger would provide a capacitive touchpad having a simpler interconnect, lower weight and improved reliability by output sensing signals of keys to a controller through small amount of wiring. Therefore, the complication and the cost of the design of a touchpad can be reduced. Thus, the Examiner respectfully maintains the rejection of claim 22.

Conclusion

5 **THIS ACTION IS MADE FINAL** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HONG ZHOU whose telephone number is (571)270-5372. The examiner can normally be reached on Monday through Friday 8:30 A.M. - 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/H Z/
Examiner, Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/484 085	07/10/2006	Tao Peng	CD06043	9100

60909 7590 03/16/2010
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KUMAR SRILAKSHMI K

ARI UNIT PAPER NUMBER
2629

MAIL DATE DELIVERY MODE
03/16/2010 PAPER

Please find below and/or attached an Office communication concerning this application or proceeding
The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/484 085	Applicant(s) PENG ET AL	
	Examiner SRILAKSHMI K KUMAR	Art Unit 2629	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 December 2009

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 5 and 8, 20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) 1, 5 and 8, 16 is/are allowed

6) Claim(s) 17, 20 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1) Certified copies of the priority documents have been received

2) Certified copies of the priority documents have been received in Application No. _____

3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	5) <input type="checkbox"/> Notice of Informal Patent Application
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

DETAILED ACTION

The following office action is in response to the amendment filed on December 17, 2009

Claims 1-5, 8-20 are pending Claims 1, 8, 9, 11, 15, 16, 19 and 20 are amended Claims 6 and 7 are cancelled

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

2 Claims 17 and 18 are rejected under 35 U S C 102(b) as being anticipated by Gillespie (US 5543591)

As to independent claim 17, Gillespie teaches a method comprising, detecting a conductive object as a plurality of sensor elements (Fig 2a-2b, col 9, line 62-col 10, line 35), wherein the plurality of sensor elements (Fig 2a-2b) are disposed in a layout according a repetitive, directional sequence (col 9, line 62-col 10, line 35, where the elements are disposed in a horizontal and vertical repetitive sequence), and determining whether a movement of the conductive device relative to the plurality of sensor elements is in a first direction according to the repetitive, directional sequence or in a second direction according to a unique reverse sequence of the repetitive, directional sequence (col 9, lines 62-col 10, line 35, col 31, line 60-col 32, line 13, where movement is determined based on different gestures which are unique)

As to dependent claim 18, limitations of claim 17, and further comprising, Gillespie teaches differentiating between repetitive, direction sequence and the unique, reverse sequence (col 31, line 60-col 32, line 13)

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negated by the manner in which the invention was made

4 Claims 19 and 20 are rejected under 35 U S C 103(a) as being unpatentable over Gillespie as applied to claims 17 and 18 and further in view of Applicant's Admitted Prior Art (hereinafter, AAPA)

As to dependent claim 19, limitations of claim 17, and further comprising, Gillespie teaches defining the repetitive, directional sequence and the unique reverse sequence (Fig 1, and col 9, lines 62-col 10, line 35, col 31, line 60-col 32, line 13) Gillespie does not teach capacitive sensors coupled to each sensor element AAPA teaches in Fig 1B capacitive sensors connected to sensor elements It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the cap sensors as taught by AAPA coupled to the plurality of sensor elements in order sense the signals from the plurality of sensor elements to determine directional movement (AAPA, paragraph 0005)

As to dependent claim 20, limitations of claim 19, and further comprising, AAPA teaches switching a plurality of switches to couple the plurality of sensor elements to the plurality of

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sensor elements to the plurality of capacitive sensors according to the repetitive, direction sequence (Fig 1B)

Allowable Subject Matter

5 Claims 1-5, 8-16 are allowed

6 The following is an examiner's statement of reasons for allowance

With respect to independent claim 13, the prior art of record do not teach wherein at least two non-adjacent sensor elements of the plurality of sensor elements are coupled to a shared cap sensor of the plurality of cap sensors, and at least one other sensor element of the plurality of sensor elements is disposed between the two non-adjacent sensor elements and coupled to another cap sensor of the plurality of cap sensors, and a sequence detector coupled to the plurality of cap sensors to detect a conductive sequence of a movement of a conductive object in proximity to at least some of the plurality of sensor elements

With respect to claims 14-16, these claims are allowable as they depend upon an allowed base claim

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance"

With respect to claim 1, the prior art of record do not teach a sequence detector coupled to the first, second and third cap sensors to detect a conductive sequence of a movement of the

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conductive object in proximity to at least some of the first, second and third pluralities of sensor elements

With respect to claims 2-5, 8-12, these claims are allowed as they depend upon an objected to base claim

Response to Arguments

7 Applicant's arguments filed 12/17/2009 have been fully considered but they are not persuasive

With respect to claims 1-5, 8-16, these claims are allowed

With respect to claims 17-20, applicant argues where the prior art of Gillespie does not teach a sequence detector Examiner, respectfully, agrees However, claims 17-20 do not claim a sequence detector With respect to where the prior art of Gillespie does not teach repetitive directional sequence or a unique reverse sequence of the repetitive directional sequence, examiner disagrees Gillespie teaches different sequences in col 31, line 6-col 32, line 13 Therefore, the rejection of claim 17-20 have been maintained and made FINAL

Conclusion

8 **THIS ACTION IS MADE FINAL** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a)

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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Page 6

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SRILAKSHMI K. KUMAR whose telephone number is (571)272-7769. The examiner can normally be reached on 7:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Srilakshmi K. Kumar/
Primary Examiner
Art Unit 2629

March 6, 2010
SKK

CY00002382



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/502 267	08/09/2006	Hakan K Jansson	16820 P449	7717
75405	7590	02/03/2009	EXAMINER	
CYPRESS/BLAKELY Blakely Sokoloff Taylor & Zafman LLP 1279 Oakmead Parkway SUNNYVALE CA 94085 4040			VALONE THOMAS F	
			AK1 UNIT	PAPER NUMBER
			2831	
			MAIL DATE	DELIVERY MODE
			02/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/502 267	JANSSON HAKAN K	
	Examiner	Art Unit	
	THOMAS F VALONE	2831	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 November 2008
- 2a) This action is **FINAL** 2b) This action is non final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

- 4) Claim(s) 1 24 is/are pending in the application
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) Claim(s) _____ is/are allowed
- 6) Claim(s) 1 12 and 18 24 is/are rejected
- 7) Claim(s) 13 17 is/are objected to
- 8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) The specification is objected to by the Examiner
- 10) The drawing(s) filed on 09 August 2006 is/are a) accepted or b) objected to by the Examiner
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
 - a) All b) Some * c) None of
 - 1) Certified copies of the priority documents have been received
 - 2) Certified copies of the priority documents have been received in Application No. _____
 - 3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))
- * See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

- 1) Notice of References Cited (PTO 892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO 948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 - Paper No(s)/Mail Date 9/15/06
- 4) Interview Summary (PTO-413)
 - Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other _____

11 DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent or on an international application by another who has fulfilled the requirements of paragraphs (1) (2) and (4) of section 371(c) of this title before the invention thereof by the applicant for patent

2 Claims 1 10 18 are rejected under 35 U S C 102(e) as being clearly anticipated by Pelikon (PCT GB05/000604)

Pelikon teaches a method of providing a sensor element (capacitance sensor, p 4, line 30-35) and measuring a capacitance (p 5 line 10 15) on the sensor element using two charge rates. Pelikon further explains the two rates by indicating first charging at a high rate and then at a significantly lower rate (dual ramp, p 5 line 36 and p 6 line 1-15) having the same polarity (Fig 2)

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

4 Claims 5-7, 9, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelikon as applied to claims 1, 10, 18 above and further in view of Cook (4,825,147) and Lewis (6,191,723)

Regarding claims 5-7, 9, 20, the teachings of Pelikon are reviewed above. Pelikon further teaches a threshold voltage that is programmable (p. 4, line 35-37 and p. 5, line 1-10) and a fixed time that is programmable (p. 6, line 1-10) as in claims 6, 7.

Pelikon does not teach discharging a sensor element for a fixed time at the first discharging rate and then discharging the sensor element at the second discharging rate to reach a threshold voltage. Pelikon does not explicitly teach an exponential charging rate.

Cook, from the same field of endeavor, teaches a second discharge rate that continues until the level reaches a threshold of 0.2 volts (col. 3, line 15). Cook further teaches that the discharge circuit is under complete control of the microprocessor (10, col. 2, line 53-55) which is also programmable to one of ordinary skill, as in claims 5, 7, 20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Cook's threshold discharge technique in the Pelikon method for measuring capacitance for the benefit of accuracy, as suggested by Cook (col. 4, line 60-65).

Pelikon as modified by Cook (P-C) does not teach discharging the sensor capacitor for a fixed time that is programmable. P-C does not explicitly teach an exponential charging rate.

Lewis from the same field of endeavor teaches a fixed discharge time of 0.66 seconds (col 5, line 30-45) that is programmable. For example, Lewis also teaches a first discharge time of 0.25 seconds depending upon the value of the capacitance and even extending the time to infinity, to slow the discharge rate to the minimum (col 5, line 30-45) as in claims 5, 6, 20. Lewis also teaches an exponential discharge rate (col 3 line 35-40) and an exponential charging rate equation (eq 4, col 4, line 10), as long as the current "i" not constant as is well known to one of ordinary skill as in claim 9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis' teachings of an exponential charging and a fixed but programmable discharge time in the P-C method of discharging until a threshold voltage is reached, for the benefit of including a wide range of possible capacitance values, as suggested by Lewis (col 5, line 35-40).

5 Claims 2, 8, 11, 19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelikon (PCT GB05/000604) in view of Cook (4,825 147).

Regarding claims 2, 8, 11, 19, the teachings of Pelikon are reviewed above.

Pelikon does not teach charging a sensor element for a fixed time at the first charging rate and then charging the sensor element at the second charging rate, which is different to reach a threshold voltage after the fixed time both of which are linear.

Cook from an analogous field of endeavor teaches charging a capacitor for a fixed time at a first charging rate (17.723 milliseconds with 2 ms off time col 4 line 50-55) and then charging the sensor element at a second charging rate which is different to reach a threshold voltage (1.0 volts col 3 line 19) after charging the sensor element.

for the fixed time. The first charging rate is the first 15 723 ms of on time and the second charging rate is interpreted as the subsequent 17 723 ms cycle repeated many times with 2 ms off time to begin with and repeated many times. Cook further teaches that both charging rates are linear (col 3, line 58-65 and Fig 4)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Cook's fixed time and subsequent threshold linear charging pattern in the Pelikon method for measuring capacitance, for the benefit of accuracy as suggested by Cook (col 4, line 61)

Regarding claim 21, Pelikon teaches a positive value for the first and second charging rate (Fig 2) which is the same meaning as a positive slope, to one of ordinary skill

6 Claims 3, 4, 12, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pelikon as modified by Cook (P-C) as applied to claims 2-11 above and further in view of Lewis (6,191,723)

Regarding claims 3, 22, 24, the teachings of P-C are reviewed above. Pelikon further teaches a positive discharging rate (charging rate in Figure 2)

P-C does not teach two discharge rates (with negative slopes as defined by applicant in instant specification par 39)

Lewis from the same field of endeavor teaches two discharging rates (negative charging values) for the measured capacitance. Lewis teaches a discharge time of 0.66 seconds or 0.25 seconds depending upon the value of the capacitance and even

extending the time to infinity to slow the discharge rate to the minimum (col 5 line 30-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis teachings of two discharging rates, in the P-C method for measuring capacitance, for the benefit of accommodating a larger range of capacitance as suggested by Lewis (col 5 line 40)

Regarding claims 4, 12 23 the teachings of P-C are reviewed above P C further teaches a second discharge rate that continues until it reaches 0.2 volts (Cook col 3, line 15). The claimed positive value charging rate as in claim 23 is redundant and the negative value discharging rate in claim 23 is also redundant in light of the instant specification (negative slopes, p 11, par 39 and Fig 7A, 7B) and to one of ordinary skill in the art

P-C does not teach a first discharge rate wherein the sensor is discharged for a fixed time at a first rate to measure the capacitance on the sensor element

Lewis teaches a fixed discharge time of 0.66 seconds (col 5 line 30-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis teachings of a fixed discharge time in the P-C method of discharging until a threshold voltage is reached for the benefit of including a wide range of possible capacitance values as suggested by Lewis (col 5, line 35-40)

Allowable Subject Matter

7 Claims 13-17 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

8 The following is a statement of reasons for the indication of allowable subject matter. The prior art of record does not teach or support, in combination with the rest of the limitations in the claim, a capacitance sensor with two different charge rates of the same polarity and a controller circuit and a relaxation oscillator coupled to the controller circuit and the sensor element.

Response to Arguments

9 Acknowledgement is made of the statement of common inventorship with the secondary reference Guang Hai. As a result, the rejection under 35 USC 103 has been withdrawn.

10 Applicant's arguments with respect to claims 1-12, 18-20 have been considered but are moot in view of the new ground(s) of rejection.

11 Regarding the argument that the secondary reference Cook does not contain features found in the primary reference (e.g., two different charge rates, charging for a fixed time), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would

have suggested to those of ordinary skill in the art. See *In re Keller* 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

12. Regarding the argument that the Cook reference has 2 ms of off-time that cannot be considered to be charge time, it is noted that the first charging rate is the first 15.723 ms of on time which results from 17.723 ms – 2 ms.

13. The rest of the arguments allege patentability without indicating how the references differ from the claimed limitations.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Qin teaches dual charging rates for a capacitance sensor with a relaxation oscillator.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Application/Control Number 11/502 267
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Page 9

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16 Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS F. VALONE whose telephone number is (571)272-8896. The examiner can normally be reached on Tu-W-Th, 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T F V/
Examiner, Art Unit 2831

Thomas Valone
Patent Examiner
Art Unit 2831
571-272-8896

/Timothy J. Dole/
Primary Examiner, Art Unit 2831

CY00002392



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 896	11/15/2006	Ryan D Segume	CD06101	5229
60909	7590	09/30/2010	EXAMINER	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			DIHARIA PRABODH M	
			ART UNIT	PAPER NUMBER
			2629	
			MAIL DATE	DELIVERY MODE
			09/30/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/600 896	SEGUINE RYAN D	
	Examiner	Art Unit	
	PRABODH M DHARIA	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

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Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 August 2010

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1, 20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 14 and 17, 20 is/are rejected

7) Claim(s) 15 and 16 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 16 March 2010 is/are: a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f):

a) All b) Some * c) None of

1) Certified copies of the priority documents have been received

2) Certified copies of the priority documents have been received in Application No. _____

3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

Art Unit 2629

1 **Status** Please all the replies and correspondence should be addressed to examiner's new art unit 2629 Receipt is acknowledged of papers submitted on 08-12-2010 under request for reconsideration, which have been placed of record in the file Claims 1 20 are pending in this action

Drawings

2 The drawings are objected to under 37 CFR 1 83(a) The drawings must show every feature of the invention specified in the claims Therefore, stepping a sense voltage of a relaxation oscillator" must be shown or the feature(s) canceled from the claim(s) No new matter should be entered

Corrected drawing sheets in compliance with 37 CFR 1 121(d) are required in reply to the Office action to avoid abandonment of the application Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended The figure or figure number of an amended drawing should not be labeled as amended " If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency Additional replacement sheets may be necessary to show the renumbering of the remaining figures Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1 121(d) If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4 Claims 1-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greanias, Evon C et al (US 5386219 A) in view of Jansson, Hakan K (US 20080036473 A1).

Regarding Claim 1, Greanias, Evon C et al (US 5386219 A) discloses a method, comprising: stepping a sense voltage of a relaxation oscillator to a first reference voltage (Col. 8, Lines 51-55, please see figures 2A and 2B), ramping the sense voltage of the relaxation oscillator from the first reference voltage to a second reference voltage greater than the first reference voltage (Col. 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave), and stepping the sense voltage to a voltage less than the first reference voltage (Col. 8, Lines 34-50 suggests during the idle status the number of cycles required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value).

However, Greanias, Evon C et al (US 5386219 A) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

However, the applicant field of endeavor prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage, Please also see page 1, paragraph 7-9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage Please also see page 1, paragraph 7 9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor, number of dv is required to reach first threshold or reference voltage suggests dv is smaller than first reference voltage)

The reason to combine Greanias, Evon C et al (US 5386219 A) contains basic method of sensing touch or proximity sensor sensing hand touching or being in the proximity of the capacitive touch sensing device Jansson, Hakan K (US 20080036473 A1) discloses same or

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similar method with the circuitry achieving proximity sensing or touch sensing, a well known in the art, and would have been recognized by one ordinary skill in the art as applicable to the base process of Grearnias, Evon C et al (US 5386219 A) and the result would have been predictable and resulted in an improved process. Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Jansson, Hakan K (US 20080036473 A1) in teaching of Grearnias, Evon C et al (US 5386219 A) to be able to have a capacitive touch sensing device, permits detection of a presence of a finger faster than the conventional relaxation oscillator, by increasing detection of the presence of a finger faster by faster sampling rates with dual slope relaxation oscillator. The above recited method also reduces or lowers the power consumption.

Regarding Claim 2, Grearnias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-charging a capacitance to a voltage with the first reference voltage at a first time (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through first reference voltage value during Idle cycle).

Regarding Claim 3, Grearnias, Evon C et al (US 5386219 A) discloses ramping the sense voltage comprises charging the capacitance with a current source until the voltage increases to

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the second reference voltage at a second time (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave at a second time, Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined suggest first time)

Regarding Claim 4, Greanias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-discharging the capacitance to the voltage less than the first reference voltage at a third time (Col 8, Lines 34-60), wherein a time period between the first time and the third time comprises a measurement of the capacitance and wherein a change in the time period between the first time and the third time comprises a change in the capacitance (Col 8, Line 34-68, suggests the first reference voltage represents the ambient capacitance with no addition of finger touch capacitance, total capacitance values are changed, Please also see Col 9, Line 59 to Col 10, Line 51)

Regarding Claim 5, Greanias, Evon C et al (US 5386219 A) discloses step-charging the capacitance comprises connecting the capacitance to the first reference voltage (Col 8, Lines 34-60)

Regarding Claim 6, Greanias, Evon C et al (US 5386219 A) discloses charging the capacitance from the current source comprises disconnecting the capacitance from the first reference voltage and connecting the capacitance to the current source after the capacitance is

disconnected from the first reference voltage (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 7, Greanias, Evon C et al (US 5386219 A) discloses step-discharging the capacitance comprises disconnecting the capacitance from the current source and connecting the capacitance to the voltage below the first reference voltage after the capacitance is disconnected from the current source (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 8, Greanias, Evon C et al (US 5386219 A) discloses the first reference voltage comprises a band-gap voltage and the second reference voltage comprises two band-gap voltages in series (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 9, Greanias, Evon C et al (US 5386219 A) discloses measuring the time period between the first time and the third time (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 10, Greanias, Evon C et al (US 5386219 A) discloses measuring a reciprocal of the time period between the first time and the third time (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3,

Col 10, Lines 42-67 since first and third V_{ref} are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Regarding Claim 11, Grearnias, Evon C et al (US 5386219 A) discloses an apparatus, comprising a touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), a relaxation oscillator, selectively coupled to the touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), wherein the relaxation oscillator is configured to step-charge the touch sensitive capacitor to a first reference voltage (Col 8, Lines 51-55, please see figures 2A and 2B), to ramp-charge the touch-sensitive capacitor to a second reference voltage above the first reference voltage (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave), and to step- discharge the touch-sensitive capacitor to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

However, Grearnias, Evon C et al (US 5386219 A) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

However, the applicant field of endeavor prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage, Please also see page 1, paragraph 7-9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I = t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage Please also see page 1, paragraph 7-9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I = t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor, number of dv is required to reach first threshold or reference voltage suggests dv is smaller than first reference voltage)

The reason to combine Greanias, Evon C et al (US 5386219 A) contains basic method of sensing touch or proximity sensor sensing hand touching or being in the proximity of the capacitive touch sensing device Jansson, Hakan K (US 20080036473 A1) discloses same or similar method with the circuitry achieving proximity sensing or touch sensing, a well known in the art, and would have been recognized by one ordinary skill in the art as applicable to the base process of Greanias, Evon C et al (US 5386219 A) and the result would have been predictable

and resulted in an improved process. Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Jansson, Hakan K. (US 20080036473 A1) in teaching of Greanias, Evon C et al. (US 5386219 A) to be able to have a capacitive touch sensing device, permits detection of a presence of a finger faster than the conventional relaxation oscillator, by increasing detection of the presence of a finger faster by faster sampling rates with dual slope relaxation oscillator. The above recited method also reduces or lowers the power consumption.

Regarding Claim 12, Greanias, Evon C et al. (US 5386219 A) discloses the relaxation oscillator comprises a switched voltage source equal to the first reference voltage to step charge the touch-sensitive capacitor to the first reference voltage at a first time, a switched current source to ramp-charge the touch sensitive capacitor to the second reference voltage at a second time, and a ground switch to step-discharge the touch sensitive capacitor to the voltage below the first reference voltage at a third time (Col. 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col. 9, Line 48 to Col. 10, Line 3, Col. 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator).

Regarding Claim 13, Greanias, Evon C et al (US 5386219 A) discloses a time period from the first time to the third time comprises a period of oscillation of the relaxation oscillator, the apparatus further comprising a timing circuit coupled with the relaxation oscillator to determine at least one of the period of oscillation of the relaxation oscillator and a frequency of oscillation of the relaxation oscillator (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 14, Greanias, Evon C et al (US 5386219 A) discloses the switched voltage source, the first reference voltage and the second reference voltages comprise band-gap voltage sources (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 17, Greanias, Evon C et al (US 5386219 A) discloses an apparatus, comprising means for decreasing a sensing time for a capacitance sensor while moving a measurable part of a capacitance charge ramp of the capacitance sensor away from a ground potential (Col 8, Lines 34 to Col 9, Line 47), and means for timing the measurable part of the capacitance charge ramp (Col 8, Lines 34 to Col 9, Line 32)

Further Regarding Claim 17, the prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6,

paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage) and means for decreasing a sensing time for a capacitance sensor while moving a measurable part of a capacitance charge ramp of the capacitance sensor away from a ground potential (please see figure 3A and 3B, page 6, paragraphs 66-70)

Regarding Claim 18, Greanias, Evon C et al (US 5386219 A) discloses the means for decreasing the sensing time comprises means for stepping a sense voltage of a relaxation oscillator to a first reference voltage above the ground potential, means for ramping the sense voltage between the first reference voltage and a second reference voltage, and means for stepping the sense voltage to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 19, Greanias, Evon C et al (US 5386219 A) discloses the means for timing comprises means for measuring a time period required for the sense voltage to increase from the first reference voltage to the second reference voltage (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 20, Greantas, Evon C et al (US 5386219 A) discloses means for measuring a reciprocal of the time period required for the sense voltage to increase from the first (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 since first and third V_{ref} are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Allowable Subject Matter

5 Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

6 The following is an examiner's statement of reasons for allowance

The prior arts of Greantas, Evon C et al (US 5386219 A) and XiaoPing, Jiang (US 20070268265 A1) with all of the other prior art cited on 892's 1449's, searched in NPL and searched in PGPUB, fails to recite or disclose all the other limitations of independent claims in combination with uniquely distinct features represented by underlined bold claim limitations recited below,

a first comparator to compare a voltage of the touch-sensitive capacitor to the first reference voltage, wherein the first comparator is configured to disconnect the ground switch from the touch-sensitive capacitor and connect the switched voltage source to the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is below the first reference voltage, and connect the switched current source to the touch-sensitive capacitor.

after a first delay, when the voltage of the touch-sensitive capacitor is at or above the first reference voltage

Or

a second comparator to compare the voltage on the touch-sensitive capacitor to the second reference voltage, wherein the second comparator is configured to disconnect the switched current source from the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is at or above the second reference voltage, and connect the ground switch from the touch-sensitive capacitor, after a second delay, when the voltage on the touch-sensitive capacitor is at or above the second reference voltage

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7 Applicant's arguments, see remark, filed 08-12-2010, with respect to the rejection(s) of claim(s) 1-14 and 17-20 under 35 U.S.C. 103(a) as being unpatentable over Greanias, Evon C et al (US 5386219 A) in view of Jansson, Hakan K (US 20080036473 A1) have been fully considered and are not persuasive.

Applicant argues Greanias, Evon C et al (US 5386219 A) in view of Jansson, Hakan K (US 20080036473 A1) fails to disclose stepping a sense voltage of a relaxation oscillator to a

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first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

Examiner disagrees as the applicant's disclosure on page 11-13 suggests the sensing capacitor is charged with current at the relaxation oscillator frequency, Suggests the stepping sensing voltage is charged across the sensing capacitor by current source directly coupled to the sensing capacitor The prior art of Jansson, Hakan K (US 20080036473 A1) suggests and discloses similar disclosure, suggesting stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage, Please also see page 1, paragraph 7-9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage Please also see page 1, paragraph 7-9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor, number of dv is required to reach first threshold or reference voltage suggests dv is smaller than first reference voltage)

The prior art of Grearnas, Evon C et al (US 5386219 A) provides base suggesting "capacitance is measured with a variable frequency oscillator which connects individual ITO conductors to the period controlling capacitor of the oscillator. When no finger touches the overlay, the oscillator runs at a frequency determined by the ambient capacitance between the conductors, in the overlay cables, and in the electronic circuitry. The frequency of the variable frequency oscillator circuit is inversely proportional to the ambient capacitance. To deal with electrical noise, an adequate number of cycles of the oscillator circuit must be run before the measured capacitance value is reliable" in which the claimed invention can be seen as an improvement" in that "stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage" contains a known technique of Jansson, Hakan K (US 20080036473 A1) that is applicable to base process. Jansson, Hakan K (US 20080036473 A1) known technique of stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage, would have been recognized by one ordinary skill in the art as applicable to the base process and the results would have been predictable and resulted in accurately measure the touch sensitive capacitor and accurately determining the touch position on a touch surface, Which resulted in an improved process. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

8 Applicant is asked to review all the prior arts recited on attached PTO 892 as they are pertinent to the applicant claimed invention

Conclusion

9 **THIS ACTION IS MADE FINAL** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1 136(a)

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1 136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRABODH M DHARIA whose telephone number is (571)272-7668. The examiner can normally be reached on M-F 8-30AM to 5PM.

11 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov> Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000

Any response to this action should be mailed to

Commissioner of Patents and Trademarks

Washington, D C 20231

/Prabodh M Dharia/

Primary Examiner

Art Unit 2629

September 27, 2010

CY00002411



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
12/367 279	02/06/2009	Dennis Seguire	CD05044DIV	9537
60909	7590	04/01/2010	EXAMINER	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			ZHU JOHN X	
		ART UNIT	PAPER NUMBER	
		2831		
		MAIL DATE	DELIVERY MODE	
		04/01/2010	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	12/367 279	SEGUINE DENNIS	
	Examiner	Art Unit	
	JOHN ZHU	2831	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 1/27/10
- 2a) This action is **FINAL** 2b) This action is non final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

- 4) Claim(s) 10, 18 and 21, 28 is/are pending in the application
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) Claim(s) 10, 18, 21, 22 and 28 is/are allowed
- 6) Claim(s) 23, 27 is/are rejected
- 7) Claim(s) _____ is/are objected to
- 8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) The specification is objected to by the Examiner
- 10) The drawing(s) filed on 06 February 2009 is/are: a) accepted or b) objected to by the Examiner
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)
 - a) All b) Some * c) None of
 - 1) Certified copies of the priority documents have been received
 - 2) Certified copies of the priority documents have been received in Application No. _____
 - 3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO 892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO 948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other _____

FINAL REJECTION

1 Response to communications filed on 1/27/10

Terminal Disclaimer

2 The terminal disclaimer filed on 1/27/10 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 7,504,833 has been reviewed and is NOT accepted

3 An attorney or agent not of record is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR 1.34 (a) See 37 CFR 1.321(b) and/or (c)

Double Patenting

4 The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the right to exclude granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over the reference claim(s). See, e.g. *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970) and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5 Claim 23-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U S Patent No 7 504 833

Although the conflicting claims are not identical they are not patentably distinct from each other because it would have been obvious that the method as taught in the present invention would be performed by the similar circuit as disclosed in the patent

Furthermore same with the reasons above claim 23 is also rejected as being unpatentable over claim 10 of U S Patent No 7 504 833

Claim Objections

6 Two claim 13s appear in the Remarks filed on 1/27/2010 For the purpose of examination, the claim 13 on page 6 will be read as claim 28

Allowable Subject Matter

7 Claims 10-18, 21 22 and 28 would be allowable if the claim objections are overcome

8 The following is a statement of reasons for the indication of allowable subject matter

Claim 10 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method for compensating for differences in capacitance between each of a plurality of capacitive sensors comprising generating a correction factor for each capacitive sensor and acquire run-time capacitance values by exposing the capacitive sensor to input events

and recording a run-time capacitance value of each capacitive sensor to the baseline capacitance value of the sensor to generate a compensated capacitance value for each capacitive sensor

Claims 11-18 and 28 are allowable as they depend from claim 10

Claim 21 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method comprising generating a baseline count value for each of a plurality of capacitive sensors and a subsequent run-time count value and modifying a difference between the baseline count value and the run-time count value for each of the plurality of capacitance sensors by a compensation value for the sensors

Claim 22 is allowable as it depends on claim 21

Conclusion

9 **THIS ACTION IS MADE FINAL** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a)

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Application/Control Number 12/367 279
Art Unit 2831

Page 5

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920. The examiner can normally be reached on M-F 8-4 30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Zhu
Examiner
Art Unit 2831

/John Zhu/
Examiner, Art Unit 2831

/Timothy J. Dole/
Primary Examiner, Art Unit 2831

CY00002417



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/230 719	09/19/2005	Harold Kutz	CD05060	4591
7590 WALKER & SAKO LLP Suite 235 300 South First Street San Jose CA 95113		01/16/2007	EXAMINER NGUYEN VINCENT Q	
		ART UNIT	PAPER NUMBER	
		2858		
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	01/16/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication

Office Action Summary	Application No 11/230 719	Applicant(s) KUTZ ET AL	
	Examiner Vincent Q Nguyen	Art Unit 2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 August 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) _____ is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 2, 6-8, 11 and 14 is/are rejected

7) Claim(s) 4, 5, 9, 10, 12, 13, 15, 17, 19 and 20 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO 152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO 1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U S C 101 reads as follows

Whoever invents or discovers any new and useful process machine manufacture or composition of matter or any new and useful improvement thereof may obtain a patent therefor subject to the conditions and requirements of this title

1 The claimed invention is directed to non-statutory subject matter because they are drawn to a judicial exception The claims therefore need to either have physical manipulation or a useful, concrete and tangible result in addition to the step of detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range Although, the claims appear on their face to be useful and concrete, there does not appear to be a tangible result Merely detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range is not sufficient to constitute a tangible result since the outcome of the detecting step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed application can be realized

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negatived by the manner in which the invention was made

3 Claims 1, 2, 6-8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda et al. (2005/0073324 A1) in view of figure 7 (Applicant admitted conventional capacitive system)

With respect to claims 1, 2, 6, 8, 14, Umeda et al. discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs (2) to a common sense node, where N is an integer greater than 1, and for each set of N capacitive sensor inputs (2), detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Para. 120-124, 295)

Umeda et al. does not disclose the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706-1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the prior art of figure 7 into the system of Umeda et al. because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

With respect to claim 7, Umeda et al. discloses a plurality of switch devices that connect capacitive sensor inputs to a common node when enabled (Para. 0019) a measuring circuit (100) coupled to the common node that determines when the capacitance at the common node is outside of a predetermined range (Para. 0020)

The only difference between Umeda et al and the claimed invention is that the claimed invention recites a switch controller that sequentially enables different sets of N switch devices essentially simultaneously in place of using a pseudo code to connect rows and columns to form sensor elements (55) (Para 0038, see also element 55 figure 4 and para 0090)

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706-1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the prior art of figure 7 into the system fumed et al because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

4 Claim 1 is rejected under 35 U S C 103(a) as being unpatentable over Parker (US 2005/0242823) in view of figure 7 (Applicant admitted conventional capacitive system)

5 With respect to claim 1, Parker discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs to a common sense node where N is an integer greater than 1 and for each set of N capacitive sensor inputs (2) detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Paragraph 005-008, 0045-0052)

Parker does not explicitly disclose the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706-1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the prior art of figure 7 into the system of Parker because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

6 Claim 11 is rejected under 35 U S C 103(a) as being unpatentable over Umeda et al (2005/0073324 A1) in view of figure 7 (Applicant admitted conventional capacitive system), as applied to claim 7 above and further in view of Somayajula (6,448,911)

With respect to claim 11 Umeda et al and the conventional of figure 7 does not disclose the measuring circuit includes an oscillator circuit that outputs a periodic signal that varies according the capacitance at the common node

Somayajula discloses a circuit and method for linearizing capacitor calibration and further discloses (figures 3-5) the measuring circuit includes an oscillator circuit that outputs a periodic signal that varies according the capacitance at the common node for the purpose of compensation for offset voltage varying at the node to enhance the error rate (Somayajula's col 2 lines 34-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the measuring circuit includes an oscillator circuit as taught by Somayajula into the system of Umeda et al because it would have been

desirable to compensate the offset voltage varying at the node to enhance error rate
(Somayajula's col 2 lines 34-45)

Allowable Subject Matter

7 Claims 15-17 19 and 20 are allow

8 Claims 4 5 9 10, 12-13 are objected to as being dependent upon a rejected
base claim, but would be allowable if rewritten in independent form including all of the
limitations of the base claim and any intervening claims

Response to Arguments

9 Applicant's arguments with respect to claims 1, 2, 4-17 19 and 20 and with
respect to amended limitations of activating switches have been considered but they are
not persuasive.

With respect to Applicant's argument that the prior art of Umeda et al does not
show or suggest 'detecting if a capacitance at the N capacitive sensor inputs is within a
predetermined range' Umeda et al discloses detecting if capacitance is within a
predetermined range paragraphs 120-124 and 295

In response to applicant's argument that the references fail to show certain
features of applicant's invention, it is noted that the features upon which applicant relies
(i.e., "Umeda et al never teaches detecting whether the digital value of a row line is
within a predetermined range') are not recited in the rejected claim(s). Although the
claims are interpreted in light of the specification limitations from the specification are
not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed
Cir. 1993). In addition, the claims merely recite "detecting if a capacitance at the N

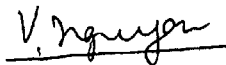
capacitance sensor inputs is within a predetermined range " Therefore arguments such as In Umeda et al , digital value for a row line are never described as being compared to any range" etc is irrelevant

Contact Information

10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld, can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent Q. Nguyen
Primary Examiner
Art Unit 2858

December 27, 2006



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/230 719	09/19/2005	Harold Kutz	CD05060	4591

7590 05/11/2006

WALKER & SAKO LLP
Suite 235
300 South First Street
San Jose CA 95113

EXAMINER

NGUYEN VINCENT Q

ART UNIT PAPER NUMBER

2858

DATE MAILED 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding

pt

Office Action Summary	Application No	Applicant(s)	
	11/230 719	KUTZ ET AL	
	Examiner	Art Unit	
	Vincent Q. Nguyen	2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____
- 2a) This action is FINAL 2b) This action is non final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

- 4) Claim(s) _____ is/are pending in the application
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) Claim(s) _____ is/are allowed
- 6) Claim(s) 1, 3, 6, 11, 14-18 and 20 is/are rejected
- 7) Claim(s) 4, 5, 12, 13 and 19 is/are objected to
- 8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) The specification is objected to by the Examiner
- 10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)
 - a) All b) Some * c) None of
 - 1 Certified copies of the priority documents have been received
 - 2 Certified copies of the priority documents have been received in Application No. _____
 - 3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO 892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO 946)
- 3) Information Disclosure Statement(s) (PTO 1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/19/2005
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application (PTO 152)
- 6) Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

2 Claims 1-3 6-10 12-17, 20 are rejected under 35 U S C 102(e) as being anticipated by Umeda et al (2005/0073324 A1)

With respect to claims 1-3, 6-10, 12-17 20, Umeda et al discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs (2) to a common sense node, where N is an integer greater than 1, and for each set of N capacitive sensor inputs (2) detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Figures 29-35)

3 Claims 1, 7, 15 are rejected under 35 U S C 102(e) as being anticipated by Parker (US 2005/0242823)

With respect to claims 1, 7 15 Parker discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs to a common sense node, where N is an integer greater than 1, and for each set of N capacitive sensor inputs (2), detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Paragraph 005-008 0045-0052)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4 Claims 11, 18 are rejected under 35 U S C 103(a) as being unpatentable over Umeda et al (2005/0073324 A1) in view of Somayajula (6,448,911)

With respect to claim to claims 11 18 Umeda et al does not disclose the measuring circuit includes an oscillator circuit that outputs a periodic signal that varies according the capacitance at the common node

Somayajula discloses a circuit and method for linearizing capacitor calibration and further discloses (figures 3-5) the measuring circuit includes an oscillator circuit that outputs a periodic signal that varies according the capacitance at the common node for the purpose of compensation for offset voltage varying at the node to enhance the error rate (Somayajula s col 2 lines 34-45)

Allowable Subject Matter

5 Claims 4-5, 12-13 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Contact Information

6 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q. Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee, can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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May 5 2006

Vincent Q. Nguyen
Primary Examiner
Art Unit 2858



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/230 719	09/19/2005	Harold Kutz	CD05060	4591
28960 7590 05/25/2007 HAVERSTOCK & OWENS LLP 162 NORTH WOLFE ROAD SUNNYVALE CA 94086			EXAMINER NGUYEN VINCENT Q	
			ART UNIT 7858	PAPER NUMBER
			MAIL DATE 03/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding
The time period for reply, if any, is set in the attached communication

Office Action Summary	Application No 11/230 719	Applicant(s) KUTZ ET AL	
	Examiner Vincent Q. Nguyen	Art Unit 2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

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Status

1) Responsive to communication(s) filed on 09 August 2006

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) _____ is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 2, 6, 8, 11 and 14 is/are rejected

7) Claim(s) 4, 5, 9, 10, 12, 13, 15-17, 19 and 20 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

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Attachment(s)

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2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO 1449 or PTO/ISB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application (PTO 152)

6) Other _____

DETAILED ACTION

This Office action is in response to Applicant's remark filed 4/23/2007. The argument is persuasive and therefore the last Office action is hereby withdrawn. The new Office action is as follows:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 6-9, 14, 15, 19, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hara (2005/0031175).

With respect to claims 1, 3, 6, Hara discloses a method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs (31) to a common sense node (38) where N is an integer greater than 1 and for each set of N capacitive sensor inputs (Any combination of elements 38 selected by element 10), detecting if a capacitance at the N capacitive sensor inputs (31) is within a predetermined range (Para 12-17, 76-79).

With respect to claim 7, Hara discloses a plurality of switch devices (14) that connect capacitive sensor inputs (31) to a common node (38) when enabled a measuring circuit (Figure 4) coupled to the common node (38) that determines when the

capacitance at the common node is outside of a predetermined range a switch controller (51) that sequentially enables different sets of N switch devices essentially simultaneously

With respect to claim 8 Hara discloses a capacitive sensor coupled to each capacitive sensor input (31), the capacitive sensors arranged into an array for sensing the position of an object with respect to the array (Figure 1)

With respect to claim 9, Hara discloses each capacitive sensor comprises a single sensor plate (31) coupled to a corresponding switch device (14) and separated from an adjacent sensor plate by a ground plate that is essentially coplanar to the sensor plate and adjacent sensor plate (The limitations such as plates coplanar are principle structure of the capacitor and is inherent in figure 1)

With respect to claim 14, Hara discloses the switch controller (51) sequentially enables different sets of M switch devices (14) in a second mode (Register mode Para 64), where $M < N$ (Decoder 51 can select any combination of the switches 14)

With respect to claims 15, 19, 20 Hara discloses a method comprising the steps of in a scan operation coupling different sets of multiple capacitive sensor inputs (3) to a common node (38) and for each set of capacitive sensor inputs (31) determining whether the capacitance at the common node is within a given range and for each set of capacitive sensor inputs, determining whether the capacitance at the common node is within a given range (Para 12-17 76-79) and generating a sense indication if the capacitance is outside the given range (It is inherent from para 15 that the sense indication must be generated in order for the system to select particular sensor cells)

Allowable Subject Matter

3 Claims 2, 4-5, 10-13, 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Response to Arguments

4 Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection

Contact Information

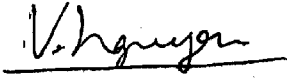
5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8 30-5 00

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld, can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number 11/230 719
Art Unit 2858

Page 5

A handwritten signature in black ink, appearing to read "V. Nguyen", is written over a horizontal line.

Vincent Q. Nguyen
Primary Examiner
Art Unit 2858

May 17 2007

CY00002436



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H/A

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/230 719	09/19/2005	Harold Kutz	CD05060	4591

7590 08/28/2006
WALKER & SAKO, LLP
Suite 235
300 South First Street
San Jose CA 95113

EXAMINER
NGUYEN VINCENT Q

ART UNIT PAPER NUMBER
2858

DATE MAILED 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding

Office Action Summary	Application No	Applicant(s)	
	11/230 719	KUTZ ET AL	
	Examiner	Art Unit	
	Vincent Q. Nguyen	2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 August 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) _____ is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 2, 6, 8, 11 and 14 is/are rejected

7) Claim(s) 4, 5, 9, 10, 12, 13, 15, 17, 19 and 20 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO 1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application (PTO 152)

6) Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2 Claims 1, 2, 6-8, 14 are rejected under 35 U S C 103(a) as being unpatentable over Umeda et al (2005/0073324 A1) in view of figure 7 (Applicant admitted conventional capacitive system)

With respect to claims 1 2 6 8 14 Umeda et al discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs (2) to a common sense node, where N is an integer greater than 1, and for each set of N capacitive sensor inputs (2), detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Figures 29-35)

Umeda et al does not disclose the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706-1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the

prior art of figure 7 into the system fumed et al because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

With respect to claim 7, Umeda et al discloses a plurality of switch devices that connect capacitive sensor inputs to a common node when enabled (Para 0019) a measuring circuit (100) coupled to the common node that determines when the capacitance at the common node is outside of a predetermined range (Para 0020)

The only difference between Umeda et al and the claimed invention is that the claimed invention recites a switch controller that sequentially enables different sets of N switch devices essentially simultaneously in place of using a pseudo code to connect rows and columns to form sensor elements (55) (Para 0038, see also element 55 figure 4 and para 0090)

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706 1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the prior art of figure 7 into the system fumed et al because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

3 Claim 1 is rejected under 35 U S C 103(a) as being unpatentable over Parker (US 2005/0242823) in view of figure 7 (Applicant admitted conventional capacitive system)

4 With respect to claim 1, Parker discloses a device and method comprising the steps of sequentially connecting different sets of N capacitive sensor inputs to a common sense node, where N is an integer greater than 1, and for each set of N capacitive sensor inputs (2), detecting if a capacitance at the N capacitive sensor inputs is within a predetermined range (Paragraph 005-008 0045 0052)

Parker does not explicitly disclose the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node

The conventional capacitive system of figure 7 discloses the step of activating switches that each couple one of the N capacitive sensor inputs to the common sense node for the purpose of allowing connections of sensors 706-1 to 706-5

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the step of activating the switches as taught by the prior art of figure 7 into the system of Parker because activating switches to allow connections of the sensor to a common node is a typical way in capacitive scanning

5 Claim 11 is rejected under 35 U S C 103(a) as being unpatentable over Umeda et al (2005/0073324 A1) in view of figure 7 (Applicant admitted conventional capacitive system), as applied to claim 7 above and further in view of Somayajula (6,448 911)

With respect to claim 11 Umeda et al and the conventional of figure 7 does not disclose the measuring circuit includes an oscillator circuit that outputs a periodic signal that varies according the capacitance at the common node

Somayajula discloses a circuit and method for linearizing capacitor calibration and further discloses (figures 3-5) the measuring circuit includes an oscillator circuit that

outputs a periodic signal that varies according the capacitance at the common node for the purpose of compensation for offset voltage varying at the node to enhance the error rate (Somayajula's col 2, lines 34-45)

Allowable Subject Matter

6 Claims 15-17, 19 and 20 are allow

7 Claims 4-5, 9, 10, 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Response to Arguments

8 Applicant's arguments with respect to claims 1, 2, 4-17 19 and 20 and with respect to amended limitations of activating switches have been considered but are moot in view of the new ground(s) of rejection

With respect to Applicant's argument that the prior art does not show the recited limitation, for example in claim 2 "determining if a time to charge the N sensor inputs is outside of a predetermined time range"

It is noted that the claim does not claim how the time to charge the N sensor inputs is determined or what is the predetermined range the limitation is thus broadly interpreted The time to charge the N sensor inputs is whatever the time requires to complete the charge for the capacitors to be full of charge The predetermined time range is anytime before capacitors are full which is predetermined by the system The limitations recited in the claim are true not only for the prior art of Umeda et al but also true for every prior art of capacitor

With respect to Applicant's argument that Applicants believe that claims 9-10 include limitations clearly not shown or suggested by Umeda et al because claim 9 recite "each capacitive sensor plate coupled to a corresponding switch device and separated from an adjacent sensor plate by a ground plate that is essentially coplanar to the sensor plate"

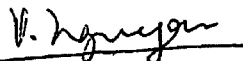
Contact Information

9 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8 30-5 00

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system see <http://pair.direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vincent Q Nguyen
Primary Examiner
Art Unit 2858


August 22, 2006



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/273 708	11/14/2005	Warren S Snyder	16820 P385	5052
8791 7590 03/19/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES CA 90025 1030			EXAMINER GANNON LEVI	
			ART UNIT	PAPER NUMBER
			2817	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication

Office Action Summary	Application No 11/273 708	Applicant(s) SNYDER ET AL	
	Examiner Levi Gannon	Art Unit 2817	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 November 2005

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1-10, 13, 14, 18, 20 is/are rejected

7) Claim(s) 11, 12 and 15-17 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 14 November 2005 is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

Continuation Sheet (PTOL 326)

Application No 11/273 708

Continuation of Attachment(s) 3 Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 1/26/06
11/14/05 9/25/06 11/03/06 2/26/07

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities Paragraph [0035] line 3 the word "drive" should be --drive--

Appropriate correction is required

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent - except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

Claims 1-5 are rejected under 35 U S C 102(e) as being anticipated by Dening (US Patent 6,969,978)

Regarding claim 1, Dening discloses an apparatus (figure 8), comprising a comparator circuit (88, 90, 92) with hysteresis including a first input (node where inputs from 88 and 90 are coupled together) and an output (CLK1) a capacitor (C1) coupled to the first input (node where inputs from 88 and 90 are coupled together) of the comparator circuit with hysteresis and a current driver (256, 258 260, 262 264) coupled to the output of the comparator circuit (88, 90 92) with hysteresis and to the

capacitor (C1), the current driver to reciprocally source and sink a drive current (column 9, lines 6-8) through a terminal of the capacitor (C1) to oscillate a voltage potential at the terminal (266) of the capacitor between a low reference potential (V_{bot}) and a high reference potential (V_{top}) responsive to the output of the comparator circuit (88 90, 92) with hysteresis

As for claim 2, Dening teaches a processor (250) coupled to execute instructions a current source (252) to generate a first reference current (current to 254), and a scaler unit (254) coupled to the current driver (256, 258, 260 262 264) the processor (250) and the current source (252), the scaler unit (254) coupled to selectively scale (254) produces the mirrored current to 256) the first reference current (current from 252) in response to a current control signal (control signal determines value of 252 which in turn determines the current value delivered to 254) received from the processor (250) to generate a second reference current (through 256) to provide to the current driver (256 258, 260, 262, 264), wherein a magnitude of the drive current is dependent upon the second reference current (current magnitude is determined through the current mirrors including 256, 258, 260 262)

In terms of claim 3, Dening teaches the comparator circuit with hysteresis comprises a flip-flop (92) including first and second inputs (from 88 and 90) and an output (CLK1), the output of the flip-flop (92) coupled to the current driver (256, 258, 260 262, 264) a first comparator (88) including an output coupled to the first input of the flip-flop a first input (input coupled to input of 90) coupled to the capacitor (C1), and a second input to receive the high reference potential (V_{top}) and a second comparator

(90) including an output coupled to the second input of the flip-flop (92), a first input coupled to the first input of the first comparator (88), and a second input to receive the low reference potential (V_{bot})

As for claim 4, Dening teaches the current driver including a pull up path (262, 264) coupled between a first voltage rail (VDD) and the terminal (266) of the capacitor (C1) to source the drive current (column 9 lines 6-8) into the terminal (266) of the capacitor, the pull up path responsive (output of 92 controls switch 264) to the output of the flip-flop (92), and a pull down path (258, 264) coupled between a second voltage rail (ground) and the terminal of the capacitor (C1) to sink the drive current (column 9, lines 6-8) from the terminal (266) of the capacitor the pull down path responsive (output of 92 controls switch 264) to the output of the flip-flop (92)

Regarding claim 5, Dening discloses the current driver (256, 258, 260 262, 264) further includes a current mirror circuit (256 260) to mirror a reference current into the pull up and pull down paths (258, 262 264)

Claims 7-14 are rejected under 35 U S C 102(e) as being anticipated by Kitano et al (hereinafter Kitano) (US Patent 7 119,550)

Regarding claim 7, Kitano discloses a method to sense a capacitance, comprising charging and discharging a reference capacitor (C1) with a first drive current (current produced by oscillator of figure 5) generated by a first oscillator (30) oscillating at a first frequency (frequency of FA), charging and discharging a device under test ("DUT") capacitor (C2) with a second drive current (current produced by

oscillator of figure 5) generated by a second oscillator (32) oscillating at a second frequency (frequency of FB) and measuring a capacitance change across the DUT capacitor based on a relative change between the first and second frequencies (column 7 lines 39-44)

As for claim 14, Kitano teaches a capacitance sensor (figure 4), comprising a first oscillator (30) coupled to charge and discharge a reference capacitor (C1) with a first drive current (current produced by oscillator of figure 5) at a first frequency (frequency of FA), a second oscillator (32) to charge and discharge a device under test ("DUT") capacitor (C2) with a second drive current (current produced by oscillator of figure 5) at a second frequency (frequency of FB) and a frequency comparator (38) coupled to the first and second oscillators (30, 32) to output a signal (VCMP) indicative of a capacitance change across the DUT capacitor (C2) based on a frequency difference between the first and second frequencies (column 7 lines 39-44)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U S C 103(a) as being unpatentable over Dening (US Patent 6,969 978)

Regarding claim 6, Dening teaches the pull up path includes a second positive metal oxide semiconductor ("PMOS") transistor (262), wherein the pull down path includes second negative metal oxide semiconductor ("NMOS") transistor (256) wherein the mirror circuit includes a third PMOS transistor (260) coupled to the first voltage rail (VDD), the third PMOS transistor (260) having its gate and source coupled to a gate of the second PMOS transistor (262) and wherein the mirror circuit includes a third NMOS transistor (256) coupled between the second voltage rail (GND),

Dening does not teach a first PMOS transistor and a first NMOS transistor coupled to the output of the flip-flop

However, as would have been recognized by one of ordinary skill in the art, the switch (264) of Dening and the first PMOS transistor and first NMOS transistor in the instant application are interchangeable because the switch and the first PMOS and NMOS transistors both perform the same function, i.e. determine whether to sink or source current to a capacitor (C1 in Dening)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the switch of Dening with first PMOS and NMOS transistors because such a modification would have been a mere substitution of art recognized equivalent switch components

Dening does teach the third NMOS transistor (256) having its gate and drain coupled to a gate of the second NMOS transistor and a reference current source in between the third PMOS and third NMOS transistors

However, as would have recognized by one of ordinary skill in the art, the transistors 256 and 258 of Dening both have the same current flowing through them similar to the transistors T6 and T4 of the instant application. The structure of Dening, though different from the instant application, is performing the same function of the instant application. Also, the reference current source of Dening (In Dening the current reference source responsible for current flowing through 256 and 260 is transistor 254 note column 8, lines 65-67 and column 9 lines 1-2) is performing the same function as the reference current source of the instant application (IREF1), namely supplying current to respective third transistors, and is therefore interchangeable with the current source of the instant application despite the different placement in the circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace a portion of the current mirror circuit of Dening (256, 258) with the current mirror (the third NMOS transistor having its gate and drain coupled to a gate of the second NMOS transistor) disclosed in the instant application and to change the placement of the reference current source (254) of Dening because such modifications would have been a mere replacement of art recognized equivalent current mirror circuits and moving a current reference source to a different position to perform the same function.

Claims 8, 9, 10, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano (US Patent 7,119,550) in view of Dening (US Patent 6,969,978).

As for claim 8 Kitano teaches the method of claim 7, as stated above but fails to teach generating a low voltage reference at which the first and second oscillators transition between discharging and charging the reference and DUT capacitors, respectively and generating a high voltage reference at which the first and second oscillators transition between charging and discharging, the reference and DUT capacitors, respectively

However, Dening (figure 8) teaches generating a low voltage reference (V_{bot}) at which an oscillator transitions between discharging and charging a capacitor (C1) and generating a high voltage reference (V_{top}) at which the oscillator transitions between charging and discharging a capacitor (C1) The oscillator of Dening and the oscillator of Kitano are both oscillators that have frequencies that are determined by the value of a capacitor and the current flowing through the capacitor

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the oscillators (30 32) of Kitano with the oscillator of Dening (figure 8) because such a modification would have been a mere substitution of art recognized equivalent oscillators

As for claim 9, Kitano modified with the oscillator of Dening, as stated above, teaches generating a reference current (252), and mirroring (using current mirrors comprising 254 256 258, 260 262) the reference current into the first and second oscillators (30 32) to generate the first and second drive currents for charging and discharging the reference capacitor and the DUT capacitor (When the oscillators of

Kitano were replaced with the oscillator of Dening the capacitors become the capacitor C1 shown in figure 8 of Dening), respectively

As for claim 10, Kitano modified with the oscillator of Dening, as stated above, teaches the method of claim 8 and teaches the low and high references being predefined (Dening column 6 lines 13-16) Dening also teaches the oscillator being part of a DC-DC converter that is used in mobile terminals such as cellular phones (Column 1, lines 14 and 47-48)

Kitano modified by Dening fails to expressly disclose the low and high voltage references being selectable via a processor

However, as would have been recognized by one of ordinary skill in the art the oscillator of Dening and all of its functions and limitations when placed in a mobile station such as a cellular phone would obviously be controlled by a microcontroller or processor to give a user more control over the functionality of the oscillator

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to control the oscillator of Dening with a processor and make the low and high voltage references (V_{bot} and V_{top}) selectable because such a modification would give a user greater control of the function of the oscillator

In terms of claim 19, Kitano discloses the capacitance sensor of claim 14, but fails to teach the first oscillator including a comparator circuit with hysteresis including a first input coupled to the reference capacitor and an output, and a current driver coupled to the output of the comparator circuit with hysteresis and to the reference capacitor the current driver to reciprocally source and sink the first drive current through a terminal of

the reference capacitor to oscillate a voltage potential at the terminal of the reference capacitor between a low reference potential and a high reference potential responsive to the output of the comparator circuit with hysteresis

However, Dening teaches an oscillator (figure 8) including a comparator circuit (88, 90, 92) with hysteresis including a first input (node 266) coupled to a capacitor (C1) and an output (CLK1), and a current driver (256, 258, 260, 262, 264) coupled to the output of the comparator circuit (88, 90, 92) with hysteresis and to the capacitor (C1) the current driver to reciprocally source and sink (column 9, lines 6-8) the first drive current through a terminal of the capacitor (266) to oscillate a voltage potential at the terminal of the capacitor between a low reference potential (Vbot) and a high reference potential (Vtop) responsive to the output of the comparator circuit (88, 90, 92) with hysteresis. The oscillator of Dening and the oscillator of Kitano are both oscillators that have frequencies that are determined by the value of a capacitor and the current flowing through the capacitor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the oscillators (30, 32) of Kitano with the oscillator of Dening (figure 8) because such a modification would have been a mere substitution of art recognized equivalent oscillators.

Regarding claim 20, Kitano modified with the oscillator of Dening as stated above, teaches the comparator circuit (88, 90, 92) with hysteresis comprises a flip-flop (92) including first and second inputs (from 88 and 90) and an output (CLK1) the output of the flip-flop coupled to the current driver (256, 258, 260, 262, 264) a first comparator

(88) including an output coupled to the first input of the flip-flop (92) a first input coupled to the capacitor (C1), and a second input to receive the high reference potential (Vtop) and a second comparator (90) including an output coupled to the second input of the flip-flop (92), a first input coupled to the first input of the first comparator (88), and a second input to receive the low reference potential (Vbot)

Claims 13 and 18 are rejected under 35 U S C 103(a) as being unpatentable over Kitano (US Patent 7 119,550)

Regarding claim 13, Kitano teaches the method of claim 7 but fails to expressly teach generating a first clock pulse by the first oscillator, dividing a second clock pulse generated by the second oscillator by N to generate N second clock pulses, and counting the number of N second clock pulses that occur during a first clock pulse, as the method to measure the frequency difference between the first and second frequencies

However, this method of frequency comparison and determining the difference between two frequencies is a well known method to those of ordinary skill in the art

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to generating a first clock pulse by the first oscillator, dividing a second clock pulse generated by the second oscillator by N to generate N second clock pulses, and counting the number of N second clock pulses that occur during a first clock pulse, as the method of measuring the frequency difference (by 38) between the first and second frequencies (produced by oscillators 30 and 32) of Kitano because such a

modification would have been a mere substitution of a well known frequency comparison and difference determining method

As for claim 18, Kitano discloses the capacitance sensor of claim 14, but fails to expressly teach the frequency comparator including a divider circuit coupled to receive a clock signal from the second oscillator having the second frequency and to divide the clock signal by $2N$ to generate a divided clock signal, and an N-bit register counter coupled to count a number pulses of the divided clock signal that occur during a single pulse of a reference clock signal generated by the first oscillator and having the first frequency

However this type of frequency comparison circuit used for determining the difference between two frequencies is a well known frequency comparison circuit to those of ordinary skill in the art

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the frequency comparator of Kitano with a frequency comparator including a divider circuit coupled to receive a clock signal from the second oscillator having the second frequency and to divide the clock signal by $2N$ to generate a divided clock signal, and an N-bit register counter coupled to count a number pulses of the divided clock signal that occur during a single pulse of a reference clock signal generated by the first oscillator and having the first frequency because such a modification would have been a mere substitution of a well known frequency comparator circuit

Allowable Subject Matter

Claims 11, 12, and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

The following is a statement of reasons for the indication of allowable subject matter. The best art of record, Kitano, taken alone or in combination of other references fails to teach or fairly suggest the processor being clocked by the first oscillator at the first frequency, as set forth in claim 11; adjusting one of the first reference current or the second reference current, as set forth in claim 12, or a current scaler coupled to scale the first reference current to generate second and third reference currents, wherein the first and second oscillators mirror the second and third reference currents respectively to generate the first and second drive currents respectively as set forth in claim 15.

Conclusion

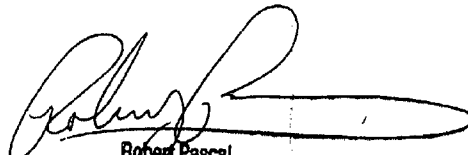
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following US Patents disclose similar circuits including a flip-flop comparators, charging/discharging a capacitor and a current source: 6,326,859 and 6,798,218.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Levi Gannon whose telephone number is (571) 272-7971. The examiner can normally be reached on Monday-Friday 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LG



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/395 417	03/31/2006	Dennis Seguiac	CD05044	3171
75701	7590	04/25/2008	EXAMINER	
Haverstock & Owens : Cypress 162 North Wolfe Road Sunnyvale CA 94086			ZHU JOHN X	
			ART UNIT	PAPER NUMBER
			2831	
			MAIL DATE	DELIVERY MODE
			04/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/395 417	Applicant(s) SEGUINE DENNIS	
	Examiner JOHN ZHU	Art Unit 2831	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 January 2008

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 21 is/are pending in the application

4a) Of the above claim(s) 10, 20 is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 4 and 21 is/are rejected

7) Claim(s) 5, 9 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 30 January 2007 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

1 Response to communications filed on 1/29/2008

7

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

3 Claims 1-3 and 21 are rejected under 35 U S C 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereinafter AAPA) in view of Teres et al (6,184 871 B1)

With respect to claim 1 AAPA discloses a relaxation oscillator circuit comprising a capacitance source (Fig 7 element Cp) connected to a node (top input of 704) the capacitance source having an essentially constant value in an initial mode and subject to potential variation in a run-time mode, a current source (702) coupled to the node, a comparator (704) having a first input coupled to the node and a second input (bottom input of 704) connected to a reference voltage that compares the values of the capacitance source to the reference value

AAPA does not disclose a plurality of input switches each enabling or disabling a low impedance from a corresponding capacitance source to the node as in claim 1, nor each having a signal path coupled between a corresponding capacitance source to a common node each input switch being controlled by a different input control signal

However, the use of switching techniques from plurality of capacitors to a common output/node is not uncommon in the art. For example, Teres discloses a MUX (Fig. 4, element 54) used to switch multiple sensors (41) to a common node (input of 43). And since a MUX is equivalent to a plurality of switches, it also enables or disables a low impedance path from the capacitance sensors to the node and each switch is controlled by a different input control signal (different input signals to the MUX each controlling a switch).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify AAPA to include the MUX (plurality of input switches) as taught by Teres for the purpose of successively connect each capacitance sensor to the oscillator to detect activated sensors (Paragraph 3, lines 30-33).

With respect to claim 2, AAPA further discloses the comparator having an output (output of 704), and a node set switch coupled between the node and a predetermined voltage node (Ground/lower plate of C_p) that is enabled in response to the output of the comparator (Feedback of 704).

With respect to claim 3, AAPA further discloses the current source is coupled between a high power supply node (V_{dd}) and the common node (top input of 704) and the set switch is coupled between the common node (top input of 704) and a lower power supply node (ground).

4 Claim 4 is rejected under 35 U S C 103(a) as being unpatentable over AAPA and Teres as applied to claim 1 above, and further in view of Von Basse et al (6,583 632 B2)

With respect to claim 4, AAPA as modified does not explicitly disclose a counter circuit coupled to an output of the comparator that generates a count value corresponding to each capacitance source based on transitions in the output of the comparator circuit

Von Basse discloses a circuit with a counter circuit (Fig 2 element Ct) coupled to an output of the comparator K that generates a count value corresponding to each capacitance source Cs based on transitions in the output of the comparator circuit

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify AAPA and Teres to include the counter circuit of Von Basse for the purpose of accounting of the number of cycles necessary to charge the capacitor to a predetermined reference voltage

Allowable Subject Matter

5 Claims 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

6 The following is a statement of reasons for the indication of allowable subject matter claim 5 would be allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a circuit comprising

a counter circuit generating count values corresponding to each capacitance source in initial mode and a computation circuit that generates a correction factor based on the generated count values

Claims 6-9 are allowable as they depend from claim 5

Response to Arguments

7 Applicant's arguments with respect to all rejected claims have been considered but are moot in view of the new ground(s) of rejection

Conclusion

8 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Wirtz (4 113 378) discloses a relaxation oscillator including the structure of a current source feedback switch and comparator Yamaoka (6,825 673 B1) discloses a MUX being equivalent to a plurality of switches (Fig 8 element 440)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920 The examiner can normally be reached on M-F 8-4 30

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor Diego Gutierrez can be reached on (571) 272-2245 The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300

Application/Control Number 11/395 417
Art Unit 2831

Page 6

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/Diego Gutierrez/
Supervisory Patent Examiner, Art Unit 2831

John Zhu
Examiner
Art Unit 2831

/John Zhu/
Examiner, Art Unit 2831

CY00002466



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/395 417	03/31/2006	Dennis Seguire	CD05044	3171

7350 10/26/2006
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EXAMINER
KRAMSKAYA MARINA

ART UNIT PAPER NUMBER
2858

DATE MAILED 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding

Office Action Summary	Application No	Applicant(s)	
	11/395 417	SEGUINE DENNIS	
	Examiner	Art Unit	
	Manna Kramskaya	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on interview of 10/19/06

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 20 is/are pending in the application

4a) Of the above claim(s) 10, 20 is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 5, 8 and 9 is/are rejected

7) Claim(s) 6 and 7 is/are objected to

8) Claim(s) 1, 20 are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 03/31/2006 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

DETAILED ACTION

Election/Restrictions

- 1 Restriction to one of the following inventions is required under 35 U S C 121
 - I Claims 1-9, drawn to a circuit classified in class 324, subclass 665
 - II Claims 10-18, drawn to a method of comparing differences in capacitance, classified in class 324 subclass 669
 - III Claims 19-20, drawn to a capacitive sensing device classified in class 324, subclass 686

The inventions are distinct, each from the other because of the following reasons

- 2 Invention groups I & III and group II are related as process and apparatus for its practice The inventions are distinct if it can be shown that either (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process (MPEP § 806 05(e)) In this case the method may be practiced using an alternate apparatus that does not require a plurality of switches or a common node coupled to a common current source, of invention group I, or a counter, of invention group III

3 Invention groups I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination group III has separate utility such as a capacitive sensing device, as it does not require the particulars of invention group I such as a plurality of switches, a common current source, or a comparator circuit. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

4 Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5 During a telephone conversation with Bradley Sako on 10/19/2006 a provisional election was made without traverse to prosecute the invention of invention group I claims 1-9 Affirmation of this election must be made by applicant in replying to this Office action Claims 10-20 are withdrawn from further consideration by the examiner, 37 CFR 1 142(b), as being drawn to a non-elected invention

Specification

6 The disclosure is objected to because of the following informalities line 5, page 9 states "a reset switch 216" However, part 216 is the common bus, and part 218 is the reset switch

Appropriate correction is required

7 The disclosure is objected to because of the following informalities line 7, page 10 states output of comparator 212 However part 212 is the current source, and part 214 is the comparator

Appropriate correction is required

Claim Objections

8 Claim 5 is objected to because of the following informalities the limitation "the initial mode" in line 3, lacks antecedent basis Appropriate correction is required

9 Claims 8 and 9 are objected to because of the following informalities the limitation 'the system of claim 7' and 'the system of claim 5' in line 1, lacks antecedent basis Both claims 5 and 7 refer to a circuit Appropriate correction is required

Claim Rejections - 35 USC § 112

10 The following is a quotation of the second paragraph of 35 U S C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention

11 Claim 8 is rejected under 35 U S C 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention Claim 8 is written as depending on claim 7, which in turn depends from claim 6 Claims 6 and 7 are both drawn to a correction circuit which compensates for differences in count values by generating a correction factor from a *maximum* count value of all the count value Therefore it is unclear how the circuit of claim 8, which is drawn to a correction circuit which compensates for differences in count values by generating a correction factor from a *minimum* count value of all the count value can function as part of the circuit which is based on the *maximum* count value

Claim Rejections - 35 USC § 102

12 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

13 Claim 1 is rejected under 35 U S C 102(b) as being anticipated by Kim, US
2003/0210809

As per Claim 1, Kim discloses circuit, comprising

a plurality of input switches (i e sensing points SP 65, 66, FIG 11) each coupled between a corresponding capacitance source (C5) and a common node (node P₄) each capacitance source having an essentially constant value in an initial mode and subject to potential variation in a run-time mode (i e runtime mode occurs when object 18 is proximate the capacitive sources C5),

a common current source coupled to the common node (I₃) and

a comparator circuit (61) having a first input coupled to the common node (node P₄) and a second input coupled to a reference value (V_m) that compares capacitance values corresponding to each capacitance source to the reference value in the initial mode and subsequently compares capacitance values corresponding to each capacitance source to the reference value in the run-time mode

Claim Rejections - 35 USC § 103

14 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed, or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains
Patentability shall not be negated by the manner in which the invention was made

15 Claims 2 and 3 are rejected under 35 U S C 103(a) as being unpatentable over
Kim ('809) in view of Sato et al US 2003/0091220

As per Claims 2 and 3, Kim discloses the circuit as applied to Claim 1 above
Kim further discloses that the comparator (61) has an output

However, Kim does not disclose

a common node set switch coupled between a common node and a
predetermined voltage node that is enabled in response to the output of the comparator,
or wherein

the common current source is coupled between a high power supply node and
the common node and

the common node set switch coupled between the common node and a low
power supply node

Sato discloses

a common node set switch (6) coupled between a common node (see FIG 2 for
node bellow 6) and a predetermined voltage node (V_{DDA}) that switch is enabled in
response to the output of the comparator (14), or wherein

the common current source (5) is coupled between a high power supply node
(V_{DDA}) and the common node (see FIG 2, for node bellow 6), and

the common node set switch (6) coupled between the common node (see FIG 2,
for node bellow 6) and a low power supply node (Ground node)

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the output of the comparator connected to a switch, as taught by Sato, in the circuit of Kim, in order to switch the discharge circuit

16 Claim 4 is rejected under 35 U S C 103(a) as being unpatentable over Kim (809) in view of Von Basse et al , US 6,583,632

As per Claim 4, Kim discloses the circuit as applied to Claim 1, above
Kim does not disclose

a counter circuit coupled to an output of the comparator that generates a count value corresponding to each capacitance source based on transitions in the output of the comparator circuit

Von Basse discloses a circuit with a counter circuit (Ct) coupled to an output of the comparator (K) that generates a count value corresponding to each capacitance source (Cs) based on transitions in the output of the comparator circuit

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a counter circuit coupled to the output of a comparator circuit, as taught by Von Basse, in the circuit of Kim, in order to account for the number of cycles necessary to charge the capacitor to a predetermined reference voltage

17 Claims 5 and 9 are rejected under 35 U S C 103(a) as being unpatentable over Kim ('809) in view of Von Basse et al ('632) as applied to claim 4 above, and further in view of Gifford et al , US 6,946,853

As per Claim 5, Kim, as modified, discloses the circuit as applied to Claim 4, above

Kim does not disclose

a computation circuit that generates at least one correction factor from at least one of initial mode count values that compensates for differences between the count values generated in the initial mode

Gifford discloses a computation circuit (processor 114) that generates at least one correction factor from at least one of initial mode count values that compensates for differences between the count values generated in the initial mode (see column 3, line 65 - column 4, line 13)

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to generate a correction factor for compensation in the count values as taught by Gifford in the circuit of Kim, in order to compensate for environmental conditions such as humidity that may produce a false signal from the capacitive sensor;

As per Claim 9, Kim as modified, discloses the circuit as applied to Claim 5 above

Kim does not disclose generating a correction factor from an average count value from all count values of the initial mode

Gifford discloses a circuit wherein

the correction factor is generated from an average count value from all count values of the initial mode (column 4, lines 2-5)

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the average count values for the correction factor, as taught by Gifford, in the circuit of Kim, in order to have a comparative count value to determine the presence of either an object for detection of environmental conditions

Allowable Subject Matter

18 Claims 6-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

As per Claim 6 the prior art fails to anticipate or make obvious in combination a circuit with a compensation circuit which generates a correction factor for the differences in count values of the capacitive sources particularly characterized is generating the correction factor from a maximum count value of all the count values

Claim 7 further depends on claim 6, and is therefore deemed allowable

Art Unit 2858

19 Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U S C 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims

Conclusion

20 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Watson Jr US 4 831,325 discloses a capacitance measurement circuit with a plurality of switches and capacitance sources, and further includes a comparator circuit

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146 The examiner can normally be reached on M-F 7 00-4 00

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Andrew Hirshfeld can be reached on (571)272-2168 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marina Kramskaya
Examiner
Art Unit 2858

M. Kramskaya

MK

John H. Gledhill

S M JER
"



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/395 417	03/31/2006	Dennis Segune	CD05044	3171
28960	7590	11/01/2007	EXAMINER	
HAVERSTOCK & OWENS LLP 162 N WOLFE ROAD SUNNYVALE CA 94086			ZHU JOHN X	
			ART UNIT	PAPER NUMBER
			2858	
			MAIL DATE	DELIVERY MODE
			11/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply, if any, is set in the attached communication

Office Action Summary	Application No 11/395 417	Applicant(s) SEGUINE DENNIS	
	Examiner John Zhu	Art Unit 2858	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 August 2007
- 2a) This action is FINAL 2b) This action is non final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application
 - 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration
- 5) Claim(s) _____ is/are allowed
- 6) Claim(s) 1-4 is/are rejected
- 7) Claim(s) 5-9 is/are objected to
- 8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) The specification is objected to by the Examiner
- 10) The drawing(s) filed on 30 January 2007 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
 - a) All b) Some * c) None of
 - 1) Certified copies of the priority documents have been received
 - 2) Certified copies of the priority documents have been received in Application No. _____
 - 3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO 892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO 948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/27/07
- 4) Interview Summary (PTO 413)
Reper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other _____

DETAILED ACTION

1 A request for continued examination under 37 CFR 1 114, including the fee set forth in 37 CFR 1 17(e) was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1 114, and the fee set forth in 37 CFR 1 17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1 114. Applicant's submission filed on 6/22/2007 has been entered.

Claim Rejections - 35 USC § 102

2 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

3 Claim 1 is rejected under 35 U S C 102(b) as being anticipated by Kim (US PG Pub no 2003/0210809 A1)

With respect to claim 1, Kim discloses a circuit, comprising

a plurality of input switches (Fig. 11 sensing points SP 65 66), each enabling or disabling a low impedance from a corresponding capacitance source (C5) to a common node (node P4) each capacitance source having an essentially constant value in an initial mode and subject to potential variation in a run-time mode (runtime mode occurs when object is in proximity).

a common current source (13) coupled to the common mode, and
a comparator circuit (61) having a first input coupled to the common mode (node P4) and a second input coupled to a reference value (V_m) that compares capacitance values corresponding to each capacitance source to the reference value in the initial mode and subsequently compares capacitance values corresponding to each capacitance source to the reference value in the run-time mode

Claim Rejections - 35 USC § 103

4 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5 Claims 2 and 3 are rejected under 35 U S C 103(a) as being unpatentable over Kim and Rajagopal et al (US PG Pub no 2006/0226922 A1)

With respect to claims 2 and 3, Kim discloses all aspects of the claim including the comparator having an output (Fig 11, element 300) and the common current source is coupled between a high power supply node 200 and the common node P4

Kim does not explicitly disclose a common node set switch coupled between the common node and a predetermined voltage node that is enabled in response to the output of the comparator or the switch is coupled between the common node and a low power supply node

Rajagopal disclose a feedback component, including a switch (Fig 6A element Fig 2A, S1) coupled between the node and a predetermined voltage node (ground) that is enabled in response to the output of the comparator (element 22) and that the switch is coupled between the common node (Vo2) and a lower power supply node (ground)

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kim to include the feedback component with the common node set switch coupled between a common node and a lower power supply node as taught by Rajagopal for the purpose of resetting the system to initial mode

6 Claim 4 is rejected under 35 U S C 103(a) as being unpatentable over Kim in view of Von Basse et al (6,583,632 B2)

With respect to claim 4 Kim does not explicitly disclose a counter circuit coupled to an output of the comparator that generates a count value corresponding to each capacitance source based on transitions in the output of the comparator circuit

Von Basse discloses a circuit with a counter circuit (Fig 2, element Ct) coupled to an output of the comparator K that generates a count value corresponding to each capacitance source Cs based on transitions in the output of the comparator circuit

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kim to include the counter circuit of Von Basse for the purpose of accounting of the number of cycles necessary to charge the capacitor to a predetermined reference voltage

Allowable Subject Matter

7 Claims 5-9 would be allowable if rewritten to overcome the rejection(s) under 35 U S C 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims

8 The following is a statement of reasons for the indication of allowable subject matter claim 5 would be allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a circuit comprising a counter circuit generating count values corresponding to each capacitance source in initial mode and a computation circuit that generates a correction factor based on the generated count values

Claims 6-9 are allowable as they depend from claim 5

Response to Arguments

9 Applicant's arguments filed 1/30/2007 have been fully considered but they are not persuasive

In response to applicant's argument that Kim ('809) does not teach the input switches of the application (Response to Office Action page 8-10) enables or disables a low impedance from a corresponding capacitance source to a common mode, the examiner respectfully disagrees and contends that this is taught

It is noted that when the Sensing Point (SP) is not being touched by a finger, the human body resistance R_b is not present on the circuit. However when a finger is near to the SP, then R_b is incorporated into the circuit (RC circuit, paragraph 0044). This

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resistance being added to the circuit is read as enabling or disabling a low impedance from a corresponding capacitance source to a common mode

Applicant's argument regarding claims 2-3 (Pages 10-11) have been considered but are moot in view of the new ground of rejection

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Zhu whose telephone number is (571) 272-5920. The examiner can normally be reached on M-F, 8-4 30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CY00002486

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11/395 417
Art Unit 2858

Page 7

John Zhu
Examiner
Art Unit 2858



JZ



ANDREW H HIRSHFELD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/437 517	05/18/2006	Jiang XiaoPing	CD06039	2623
60909 7590 08/03/2010 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER KETEMA BENYAM	
			ARI UNIT	PAPER NUMBER
			2629	
			MAIL DATE	DELIVERY MODE
			08/03/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/437 517	Applicant(s) XIAOPING JIANG	
	Examiner BENYAM KETEMA	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 April 2010

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application

 4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) 5-17 is/are allowed

6) Claim(s) 1-4 and 18-20 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 18 May 2006 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

 a) All b) Some * c) None of

 1 Certified copies of the priority documents have been received

 2 Certified copies of the priority documents have been received in Application No. _____

 3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

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2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Response to Amendment

1 In an amendment dated, April 26 2010 claims 1-20 are presented for examination

2 Applicant's arguments with respect to claims 1-4 and 18- 20 have been considered but is not persuasive

On page 8 and 9 of the Remarks, the Applicants argue that Tsujioka et al fails to teach the claimed feature of ***recognizing three or more button operations performed by the conductive object using two sensing areas of the sensing device*** " as recited in independent Claims 1 and 18 The Examiner must respectfully disagree Tsujioka et al (Fig 5) discloses multiple input operation being performed onto the two sensing areas Applicant claims ***recognizing three or more button operations performed*** " Tsujioka et al (Fig 5) discloses that a user can perform multiple input operation using his/her finger or pen as it is clearly shown in fig 5 in order to perform an input operation Further more Applicant claims this input operation is done using ***two sensing areas of the sensing device***" Tsujioka et al (Fig 5) discloses that the device has two sensing area (i e 24 and 25) Therefore Tsujioka et al (Fig 5) discloses that multiple button input operation being performed by the user when the user (i e operator) presses any one of the input areas (49 and 50) which are located in two sensing area (24 and 25) of the input device Therefore one can see that multiple input

operations (i.e. button operations) are done using two sensing areas (24 and 25) of the sensing device (i.e. input device 21) as it is claimed in claim 1 and 18

Claim Rejections - 35 USC § 102

3 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

4 Claims 1, 2, 4 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsujioka et al (US Pat NO 5,518 078)

As in Claim 1, Tsujioka et al discloses a method (Column 1 line 5-10), comprising

- *detecting a presence of a conductive object on a sensing device, (Column 9 line 65- Column 10 line 4)*
- *recognizing three or more button operations performed (Fig 5 item 49 and 50a) by the conductive object (Fig 5 item 50 & 51 finger or pen) using two sensing areas of the sensing device (Fig 5 & 6 item 24 & 25 two sensing areas)*

As in Claim 2, Tsujoka et al discloses *the method* (Column 1 line 5-10) of claim 1 wherein recognizing three or more button operations (Column 9 line 65- Column 10 line 6 and fig 5-8) comprises recognizing on a first sensing area of the two sensing areas of the sensing device, (Fig 5 and Column 9 line 65- Column 10 line 4) recognizing a second button operation when the presence of the conductive object is detected on a second sensing area of the two sensing areas of the sensing device (Fig 5 and Column 9 line 65- Column 10 line 4) recognizing one or more button operations when the presence of the conductive object is detected on the first and second sensing areas (Fig 5)

As in Claim 4, Tsujoka et al discloses *the method* (Column 1 line 5-10) of claim 1, further comprising scanning the two sensing areas of the sensing device (Column 9 line 58 -61) wherein recognizing the three or more button operations comprises recognizing a first button operation when a first sensing area of the two sensing areas detects the presence of the conductive object during the scanning of the two sensing areas, (Fig 5, 7 and 9 and Column 9 line 54- Column 10 line 6) recognizing a second button operation when a second sensing area of the two sensing areas detects the presence of the conductive object during the scanning of the two sensing areas, (Fig 5 7 and 9 and Column 9 line 54- Column 10 line 6) recognizing a third button operation when the first and second sensing areas detect the presence of the conductive object during the scanning of the two sensing areas (Fig 5, 7 and 9 and Column 9 line 54- Column 10

line 6) discloses scanning the sensing areas (i.e. 24 & 25) and recognizing multiple button (i.e. 36, 39-42) operation for conductive objects (i.e. finger or pen)

As in Claim 18, Tsujoka et al discloses *an apparatus* (Column 1, touch panel),
comprising

- *a first sensing area to detect a presence of a conductive object on a sensing device, (Fig 5 item 25)*
- *a second sensing area to detect the presence of the conductive object on the sensing device, (Fig 5 item 24)*
- *means for recognizing three or more button operations (Fig 5 item 49 and 50a) performed by the conductive object (Fig 5 item 51 or 50, finger or pen) using two sensing areas on the sensing device (Fig 5 item 24 & 25 two sensing areas)*

Claim Rejections - 35 USC § 103

5 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

6 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows

- 1 Determining the scope and contents of the prior art
- 2 Ascertaining the differences between the prior art and the claims at issue
- 3 Resolving the level of ordinary skill in the pertinent art
- 4 Considering objective evidence present in the application indicating obviousness or nonobviousness

7 Claim 3 is rejected under 35 U S C 103(a) as being unpatentable over Tsujioka et al (US Pat NO 5,518,078) In view of Collins (PG Pub NO 2004/0239616)

As in Claim 3, Tsujioka et al discloses *the method* (Column 1 line 5-10) of claim 1, but fails to disclose *determining a capacitance of the conductive object on the sensing device over time wherein determining the capacitance further comprises determining a capacitance of the two sensing areas of the sensing device, and wherein recognizing the button operation is based on the capacitance of the two sensing areas* However Collins discloses *determining a capacitance of the conductive object on the sensing device over time* (Paragraph 24 and Fig 2-3) *wherein determining the capacitance further comprises determining a capacitance of the two sensing areas of the sensing device, (Fig 3 item 200-1 & 200-3) and wherein recognizing the button operation is based on the capacitance of the two sensing areas* (Paragraph 24-28 and Fig 3) discloses operation of buttons is recognized according to a signal produced (i e capacitance) when the user finger is in contact with sensing area

Tsujioka et al and Collins are analogous art because they are from the common area of user input device using touch sensor Tsujioka et al discloses an input device that has multiple sensing areas as well as buttons But fails to disclose capacitance

sensor, However Collins discloses that capacitance sensors are used to determine the presence of conductive object (i.e. finger) on the sensing area in a system similar to that of Tsujioaka et al. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Tsujioaka et al's sensing area to include Collins's capacitance sensor, because using capacitance sensor or any other form of sensor in touch panel device would be an alternate design choice.

8 Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujioaka et al (US Pat NO 5,518,078) in view of Gitzinger et al (PG Pub NO 2006/0097992).

As in Claim 19, Tsujioaka et al discloses *the apparatus* (Column 1 touch panel) but fails to disclose *means for reducing a pin count of the sensing device*. However Gitzinger et al discloses *means for reducing a pin count of the sensing device* (Fig 3 and Paragraph 29-32) discloses the reduction of pins by coupling the discrete surfaces (i.e. sensing area 320, 322, 324) together and connecting them to the controller.

Tsujioaka et al and Gitzinger et al are analogous art because they are from the common area of user input device using touch sensor. Tsujioaka et al discloses an input device that has multiple sensing areas as well as buttons. But fails to disclose reduction of connector pins as well as the effect of scanning time when the numbers of pins are reduced. However Gitzinger et al discloses in Fig 3 the number of pins have been reduced in a system similar to that of Tsujioaka et al. Therefore it would have been

obvious to one of ordinary skill in the art at the time of the invention to combine Tsujioka et al's sensing area to include Gitzinger et al's arrangement of reduced number of pins in order to reduced cost and material in the manufacturing of said device

As in Claim 20, Tsujioka et al discloses *the apparatus* (Column 1, touch panel) but fails to disclose *means for reducing scan time of the sensing device*. However Gitzinger et al discloses *means for reducing scan time of the sensing device* (fig 3) discloses the sensing areas are coupled together and connected to the controller rather than being connected individually therefore it would be obvious to a skilled person that by reducing the number of connection between the sensing area and controller the scan time would be increased (faster)

Allowable Subject Matter

9 Claims 5-17 are allowable over the prior art of record

10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENYAM KETEMA whose telephone number is (571)270-7224. The examiner can normally be reached on Monday- Friday 8 00AM - 5 00PM

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor Shalwala Bipin H can be reached on (571)-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-

Application/Control Number 11/437 517
Art Unit 2629

Page 9

273-8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PAIR or Public PAIR Status information for unpublished applications is available through Private PAIR only For more information about the PAIR system, see <http://pair-direct.uspto.gov> Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) If you would like assistance from a USPTO Customer Service Representative or access to the automated information system call 800-786-9199 (IN USA OR CANADA) or 571-272-1000

/ B K /

Examiner, Art Unit 2629

/Bipin Shalwala/

Supervisory Patent Examiner, Art Unit 2629

CY00002497



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/442 212	05/26/2006	Jiang XiaoPing	CD06030	2239
60909 7590 02/25/2011 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER MISHLER ROBIN J	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 02/25/2011	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/442 212	XIAOPING JIANG	
	Examiner	Art Unit	
	Robin Mishler	2629	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a) in no event however may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
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Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

Status

1) Responsive to communication(s) filed on 12 January 2011

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 6, 8, 16 and 18, 20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 6, 8, 16 and 18, 20 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a)
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d)

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO 413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Continued Examination Under 37 CFR 1 114

1 A request for continued examination under 37 CFR 1 114, including the fee set forth in 37 CFR 1 17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1 114 and the fee set forth in 37 CFR 1 17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1 114. Applicant's submission filed on 12 January 2011 has been entered.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 11, 14, 18, 19, 14 and 18, 19 are rejected under 35 U S C 103(a) as being unpatentable over Allen (US 5,943,052) in view of Stephan (US 5,748,185) and further in view of Hinckley (US 7,202,857 B2).

Regarding **claim 11**, Allen discloses, an apparatus (see fig. 4A for example) comprising

a first area of a touch sensor device (18 in Fig. 2) to produce data indicative of movement of a conductive object on the first area (col. 2, lines 51-53) and

a second area of the touch sensor device (19 in Fig 2) to produce data indicative of a presence of the conductive object in one of a plurality of one dimensional positions (col 2 lines 48 49 and 55 62) on the second area of the touch sensor device

Allen fails to disclose wherein the first area comprises a multi dimensional sensor array and the second area comprises a one dimensional sensor array

Stephan discloses wherein the first area of the touch sensor device comprises a multi dimensional sensor array (96 in fig 3) having a plurality of columns and rows of sensor elements (col 7 lines 23 30, wherein the defined axes of X Y contain a collection of sensor elements to detect a position) and the second area of the touch sensor device comprises a single dimensional sensor array (220 224 in fig 9 or 100 in fig 3) having a plurality of sensor elements corresponding to the plurality of one dimensional positions on the second area of the touch sensor device (col 7 lines 23 30 and col 11 lines 28 42) wherein each of the plurality of sensor elements in the one dimensional sensor array corresponds to each of the plurality of columns of sensor elements in the multi dimensional sensor array and shares a column trace with a corresponding column of sensor elements in the multi dimensional sensor array (wherein 96 in fig 3 includes both 98 and 100 resulting in shared Y axis sensor lines) and wherein the plurality of sensor elements in the single dimensional sensor array has a single independent row trace (220 in fig 9) that is not shared by the multi dimensional sensor array (col 11 lines 28 42), and wherein the second area being different than the first area (see 222 and 224 in fig 9)

When the invention was made it would have been obvious to one of ordinary skill in the art to include two separate touch sensor arrays of Stephan in the touch pad of Allen. The motivation for doing so would have been to provide separate touch pad sensors to accurately distinguish between multiple contact points on the surface of the touchpad member (Stephan, col. 11, lines 28-42 and 47-51).

Additionally, none of the above expressly discloses comprising a processing logic to process a function mapped to an area of the plurality of one dimensional positions based upon which one of the one dimensional positions the data indicative of the presence is produced.

Hinckley discloses a processing logic to process a function mapped to an area of the plurality of one dimensional positions (see 102 and 103 in fig. 1A and col. 3, lines 50-58) based upon which one of the one dimensional positions the data indicative of the presence is produced (col. 6, lines 15-17 and 63-67).

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the function recognition of Hinckley in the touch pad device of Allen. The motivation for doing so would have been to provide further functionality of the touch pad, such as performing a predefined function (for example the function equivalent to the page up button the keyboard) by touching a specific area of the touch pad (Hinckley col. 6 lines 52-62).

Regarding **claim 12** Allen further discloses wherein the data indicative of movement of the conductive object on the first area is data indicative of movement of an absolute position of the conductive object on the first area (col. 2 lines 51-55) and the

data indicative of the presence is data indicative of a relative position among one of the plurality of one dimensional positions (for example the ΔD in Fig 3 which is an example of a length of movement on the first area/ touchpad area of the device)

Regarding **claim 13**, Allen does not expressly disclose wherein the data indicative of the presence is data indicative of a tap

Hinckley discloses wherein the data indicative of the presence is data indicative of a tap (904 in Fig 9)

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the data recognition of a tap of Hinckley in the touch pad device of Allen. The motivation for doing so would have been to provide further functionality of the touch pad, such as tap or clicking motion recognition to further use the touch pad as a mouse

Regarding **claim 14** Allen does not expressly disclose wherein the data indicative of the presence is data indicative of a touch

Hinckley discloses wherein the data indicative of the presence is data indicative of a tap (901, in Fig 9)

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the data recognition of a touch of Hinckley in the touch pad device of Allen. The motivation for doing so would have been to provide further functionality of the touch pad, such as touch recognition to for basic use as a mouse

Regarding **claim 18** Allen fails to disclose wherein the function to be processed by processing logic is a function triggering in the second area

However Hinckley further discloses wherein the function to be processed by processing logic is a function triggering, the function triggering to produce input data utilized by processing logic to process the function in response to data indicative of movement of a conductive object across the second area of the touch sensor device (col 13, 30 45)

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the function triggering of the second area of Hinckley in the touch pad device of Allen. The motivation for doing so would have been to provide further functionality of the touch pad such as performing a predefined function (for example auto scrolling) by touching the second area of the touch pad in a predefined way.

Regarding **claim 19**, Allen further discloses wherein the function is vertical or horizontal scroll (col 2 lines 48 49 and 55 62)

Allen fails to disclose wherein the function is a program start shortcut menu minimize window maximize window close window resize window left button middle button, right button contrast adjustment, or volume adjustment. However the examiner take official notice of the fact it was well known in the art to provide a touchpad that recognizes and performs the above stated functions.

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Allen by specifically providing the above stated functions to the touch pad for the purpose of providing a user direct access to the above stated functions through the use of the touch pad.

Regarding **claim 1** Allen discloses a method, comprising
receiving data indicative of movement of a conductive object (col 2 lines 51 53)
on a first area of a touch-sensor device (18 in Fig 2)
detecting data indicative of a presence of the conductive object in one of a
plurality of one dimensional positions (col 2, lines 48 49) on a second area of the touch
sensor device (19 in Fig 2), and
determining in which one of the plurality of one dimensional positions is the
presence detected (col 2 lines 55 62)

Allen fails to disclose wherein the first area comprises a multi dimensional sensor
array and the second area comprises a one dimensional sensor array

Stephan discloses wherein the first area of the touch sensor device comprises a
multi dimensional sensor array (96 in fig 9) having a plurality of columns and rows of
sensor elements (col 7, lines 23 30, wherein the defined axes of X,Y contain a
collection of sensor elements that detect a position) and the second area of the touch
sensor device comprises a single dimensional sensor array (100 in fig 3 or 220 224 in
fig 9) having a plurality of one dimensional positions on the second area of the touch
sensor device (col 7, lines 23 30 and col 11, lines 28 42) wherein each of the plurality
of sensor elements in the one dimensional sensor array corresponds to each of the
plurality of columns of sensor elements in the multi dimensional sensor array and
shares a column trace with a corresponding column of sensor elements in the multi
dimensional sensor array (wherein 96 in fig 3 includes both 98 and 100 resulting in
shared Y axis sensor lines), and wherein the plurality of sensor elements in the single

dimensional sensor array has a single independent row trace (220 in fig 9) that is not shared by the multi-dimensional sensor array (col 11, lines 28 42) and wherein the second area being different than the first area (see 98 and 100 in fig 9)

When the invention was made it would have been obvious to one of ordinary skill in the art to include two separate touch sensor arrays in the touch pad of Allen. The motivation for doing so would have been to provide separate touch pad sensors to accurately distinguish between multiple contact points on the surface of the touchpad member (Stephan col 11 lines 28 42 and 47 51)

Additionally, Allen fails to disclose processing a function mapped to an area of the plurality of one dimensional positions of the second area based on which one of the plurality of one dimensional positions the presence is determined to be detected

Hinckley discloses processing a function mapped to an area of the plurality of one dimensional positions of the second area (see 102 and 103 in fig 1A and col 3 lines 50 58), based on which one of the plurality of one dimensional positions the presence is determined to be detected (col 6 lines 15 17 and 63 67)

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the function recognition of Hinckley in the touch pad device of Allen. The motivation for doing so would have been to provide further functionality of the touch pad such as performing a predefined function (for example the function equivalent to the page up button the keyboard) by touching a specific area of the touch pad (Hinckley col 6, lines 52 62)

Claim 2 is the corresponding method claim performed by the apparatus of claim 12 and therefore is rejected on the same grounds

Claim 3 is the corresponding method claim performed by the apparatus of claim 13 and therefore is rejected on the same grounds

Claim 4 is the corresponding method claim performed by the apparatus of claim 14 and therefore is rejected on the same grounds

Claim 8 is the corresponding method claim performed by the apparatus of claim 18 and therefore is rejected on the same grounds

Claim 9 is the corresponding method claim performed by the apparatus of claim 19 and therefore is rejected on the same grounds

Claims 15 16 and 5 6 are rejected under 35 U S C 103(a) as being unpatentable over Allen in view of Stephan in view of Hinckley as applied to claims 1 and 11 above and further in view of Edwards (US 2005/0179668 A1)

Regarding **claim 15**, Allen fails to disclose wherein the touch sensor device is a capacitive sensing array comprising a plurality of capacitive sensing elements

Edwards discloses wherein the touch sensor device is a capacitive sensing array comprising a plurality of capacitive sensing elements (paragraph [0022])

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the capacitive sensing array in the touch pad of Allen. The motivation for doing so would have been to provide a specific means for detecting touch on the touch pad.

Regarding **claim 16**, Allen fails to explicitly disclose wherein the plurality of capacitive sensing elements is formed by a plurality of conductive pads disposed below an insulating layer

Edwards discloses wherein the plurality of capacitive sensing elements is formed by a plurality of conductive pads (paragraph [0022]) disposed below an insulating layer (paragraph [0023])

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the capacitive sensing array in the touch pad of Allen. The motivation for doing so would have been to provide a specific means for detecting touch on the touch pad and having an insulation layer to avoid damage to the sensing elements

Claim 5 is the corresponding method claim performed by the apparatus of claim 15 and therefore is rejected on the same grounds

Claim 6 is the corresponding method claim performed by the apparatus of claim 16 and therefore is rejected on the same grounds

Claims 10 and 20 are rejected under 35 U S C 103(a) as being unpatentable over Allen in view of Stephan in view of Hinckley as applied to claims 1 and 11 above, and further in view of Iizuka (US 2003/0142081 A1)

Regarding **claim 20**, Allen fails to disclose a pin operatively coupled with the second area of the touch sensor device, the pin not being operatively coupled with the first area of the touch sensor device to communicate data indicative of the presence of the conductive object on the second area

Iizuka discloses a pin operatively coupled with the second area (29) of the touch sensor device the pin not being operatively coupled with the first area (28) of the touch sensor device, to communicate data indicative of the presence of the conductive object on the second area (see fig 2, wherein the figure shows that the two touch pad areas are separately connected to the input/output interface therefore communicating data separately and not being coupled together)

Claim 10 is the corresponding method claim performed by the apparatus of claim 20 and therefore is rejected on the same grounds

Response to Arguments

4 Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robin Mishler whose telephone number is (571)270 7251 The examiner can normally be reached on Monday to Friday 8 00 Am to 5 PM EST

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor ALEXANDER EISEN can be reached on (571)272-7687 The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300

Application/Control Number 11/442,212
Art Unit 2629

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair.direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866 217 9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800 786 9199 (IN USA OR CANADA) or 571 272 1000.

/Robin Mishler/
Examiner, Art Unit 2629

***/Alexander Eisen/
Supervisory Patent Examiner, Art Unit 2629***

CY00002510



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/477 179	06/27/2006	Li GuangHai	CD06065	4534

60909 7590 06/09/2009
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
ZHOU HONG

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/477 179	GUANGHAI LI	
	Examiner	Art Unit	
	HONG ZHOU	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a) in no event however may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133)
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

Status

1) Responsive to communication(s) filed on 27 June 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 1935 C D 11 453 O G 213

Disposition of Claims

4) Claim(s) 1 24 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1 24 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 27 June 2006 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a)
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d)

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/27/06 & 9/26/06

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

2 Claims 1-22 are rejected under 35 U S C 102 (e) as being anticipated by Gitzinger et al (US 2006/0097992, hereinafter Gitzinger)

Regarding claim 1, Gitzinger discloses a method (see Figs 1-6), comprising

detecting a presence of a conductive object (e g , detecting a presence of a finger on a keypad 138, see Fig 1 and [0029]) on a sensing device (e g , keypad 138) having a plurality of sensor elements (e g , capacitance sensors 320, 322 and 324, see Fig 3 and [0030]) that are electrically coupled (see Fig 3), wherein the plurality of sensor elements correspond to a plurality of button operations (e g , each sensor corresponds to each key of the keypad, see [0030]), and distinguishing a particular button operation from among the plurality of button operations (e g , controller 118 can detect which key is touched according to different capacitances produced by the sensing member 310, see Figs 5 and 6, [0029]-[0030])

Regarding claim 2, Gitzinger discloses the method of claim 1, wherein distinguishing the particular button operation comprises recognizing two or more button operations performed by the conductive object on the sensing device using one pin of a processing device (see Fig 3)

Regarding claim 3, Gitzinger discloses the method of claim 1, wherein the plurality of sensor elements comprises different sensitivities (e g , Key A corresponding to the first capacitance sensor 320 has a frequency range of F1-F2, Key B corresponding to the second capacitance sensor 322 has a frequency range of F3-F4 and Key C corresponding to the third capacitance sensor 324 has a frequency range of F5-F6, see Fig 6, [0035])

Regarding claim 4, Gitzinger discloses the method of claim 1, wherein the plurality of sensor elements comprise different surface areas (e g , the capacitance sensors 320, 322 and 324 differ from one another in area, see Fig 3)

Regarding claim 5, Gitzinger discloses the method of claim 1, wherein distinguishing the particular button operation comprises

recognizing a first button operation (e g , recognizing Key A operation, Fig 6) of the plurality of button operations when the presence of the conductive object is detected on a first sensor element (e g , Key A includes capacitance sensor 320, see [0035]) of the plurality of sensor elements of the sensing device, wherein the presence of the conductive object is detected on the first sensor element when a measurement of the presence of the conductive object is greater than a first sensitivity threshold (e g , time constant RC1 or frequency F1, see [0034]-[0035]), and

recognizing a second button operation (e g , recognizing Key B operation Fig 6) of the plurality of button operations when the presence of the conductive object is detected on a second

sensor element (e.g., Key B includes capacitance sensor 322) of the plurality of sensor elements of the sensing device, wherein the presence of the conductive object is detected on the first sensor element when a measurement of the presence of the conductive object is less than the first sensitivity threshold (e.g., time constant RC1 or frequency F1) and greater than a second sensitivity threshold (e.g., time constant RC3 or frequency F3)

Regarding claim 6, Gitzinger discloses the method of claim 5, wherein the first and second sensitivity thresholds are greater than a presence threshold (e.g., time constant RC5 or frequency F5, Fig. 6), wherein the presence threshold is configured to indicate the detected presence of the conductive object (e.g., indicating the detected presence of a finger on Key C)

Regarding claim 7, Gitzinger discloses the method of claim 1, wherein distinguishing the particular button operation comprises

determining a capacitance of the conductive object on the sensing device (e.g., measuring the time constant RC which includes a capacitance of finger on the capacitance sensing device 310, [0029]-[0030]),

detecting the presence of the conductive object on the first sensor element (e.g., detecting the presence of a finger on the first capacitance sensor 320 corresponding to Key A, see Fig. 6) when the capacitance is greater than a first sensitivity threshold (e.g., time constant RC1 or frequency F1, [0034]-[0035]), and

detecting the presence of the conductive object on the second sensor element (e.g., detecting the presence of a finger on the second capacitance sensor 322 corresponding to Key B,

see Fig 6) when the capacitance is less than the first sensitivity threshold (e g , less than the time constant RC1 or frequency F1) and greater than a second sensitivity threshold (e g , greater than the time constant RC3 or frequency F3)

Regarding claim 8, Gitzinger discloses the method of claim 7, further comprising recognizing a first button operation of the plurality of button operations (e g , Key A) when the presence of the conductive object is detected on the first sensor element of the sensing device (see Fig 6 and [0034]-[0035]), and

recognizing a second button operation of the plurality of button operations (e g , Key B) when the presence of the conductive object is detected on the second sensor element of the sensing device (see Fig 6 and [0034]-[0035])

Regarding claim 9, Gitzinger discloses an apparatus, comprising

a sensing device (e g , capacitance sensing device 310, Fig 3 and [0029]) having a first sensor element (e g , capacitance sensor 320) and a second element (e g , capacitance sensor 322) that are electrically coupled to detect a presence of a conductive object on the sensing device, wherein the first sensor element corresponds to a first button operation (e g , Key A of a keypad, see [0030] and [0035]) and the second sensor element corresponds to a second button operation (e g , Key B of a keypad), and

a processing device (e g , controller 118, Fig 3) coupled to the sensing device to distinguish a particular button operation from among the first and second button operations (see [0028])

Regarding claim 10, Gitzinger discloses the apparatus of claim 9, wherein the first sensor element comprises a first surface area and the second sensor element comprises a second surface area, and wherein the first surface area is greater than the second surface area (see Fig 3)

Regarding claim 11, Gitzinger discloses the apparatus of claim 9, wherein the first sensor element comprises a first sensitivity and the second sensor element comprises a second sensitivity, wherein the first sensitivity is greater than the second sensitivity (e.g., Key A corresponding to the first capacitance sensor 320 has a frequency range of F1-F2 and Key B corresponding to the second capacitance sensor 322 has a frequency range of F3-F4. The sensitivity of frequency range of F1-F2 is greater than the sensitivity of frequency range of F3-F4)

and wherein the processing device is configured to distinguish the particular button operation based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element (see Fig 6 and [0034]-[0035])

Regarding claim 12, Gitzinger discloses the apparatus of claim 9, wherein the first and second sensor elements are electrically coupled (see Fig 3)

Regarding claim 13, Gitzinger discloses the apparatus of claim 9, wherein the first and second sensor elements are coupled to the processing device using one pin (see Fig 3)

Regarding claim 14, Gitzinger discloses the apparatus of claim 9, wherein the processing device is configured to recognize the first button operation (e.g., Key A) when the presence of the conductive object is detected on the first sensor element of the sensing device (see Fig. 6 and [0034]-[0035]), and to recognize the second button operation (e.g., Key B) when the presence of the conductive object is detected on the second sensor element of the sensing device (see Fig. 6 and [0034]-[0035]).

Regarding claim 15, Gitzinger discloses the apparatus of claim 9, wherein the processing device is configured to determine a capacitance of the conductive object on the sensing device (see [0028]-[0029]).

Regarding claim 16, Gitzinger discloses the apparatus of claim 15, wherein the first button operation (e.g., Key A, Fig. 6) is recognized when the capacitance (e.g., RC or frequency) is greater than a first sensitivity threshold (e.g., RC1 or frequency F1, see Fig. 6), and wherein the second button operation (e.g., Key B) is recognized when the capacitance is less than the first sensitivity threshold (e.g., RC1 or frequency F1) and greater than a second sensitivity threshold (e.g., RC3 or frequency F3).

Regarding claim 17, Gitzinger discloses the apparatus of claim 16, wherein the first and second sensitivity thresholds are greater than a presence threshold (e.g., RC5 or frequency F5), wherein the presence threshold is configured to indicate the detected presence of the conductive object (e.g., indicating the detected presence of a finger on Key C, see Fig. 6).

Regarding claim 18, Gitzinger discloses an apparatus, comprising a sensing device (e.g., sensing device 310, Fig. 3 and [0029]) having a plurality of sensor elements (e.g., capacitance sensor 320, 322 and 324) that are electrically coupled, wherein the plurality of sensor elements correspond to a plurality of buttons (e.g., Key A, Key B and Key C of a keypad, [0035]) operations, and means for distinguishing a particular button operation (e.g., controller 118, see [0028] and Fig. 6), performed by a conductive object (e.g., a finger of a user, see Fig. 3, 311 and [0029]) on the sensing device, from among the plurality of button operations

Regarding claim 19, Gitzinger discloses the apparatus of claim 18, wherein means for distinguishing the particular button operation comprises means for distinguishing the particular button operation from among the plurality of button operations using one pin (see Fig. 3 and [0028])

Regarding claim 20, Gitzinger discloses the apparatus of claim 18, further comprising means for detecting a presence of the conductive object on the sensing device (e.g., the controller 118 detects a presence of a finger on the sensing devices 320, 322 and 324)

Regarding claim 21, Gitzinger discloses the apparatus of claim 18, further comprising means for determining a capacitance of the conductive object on the sensing device (e.g., the time constant circuit 213 measures the time constant RC which includes a capacitance of finger on the capacitance sensing device 310, [0027]-[0030]),

and means for detecting the presence of the conductive object on a particular sensor element among the plurality of sensor elements based on sensitivity ranges of the plurality of sensor elements (e g , a controller 118 detects which keys among Key A, Key B and Key C is selected based on the frequency ranges of the plurality of capacitance sensor 320, 322 and 324, see [0028] and [0035], also see Fig 6)

Regarding claim 22, Gitzinger discloses an apparatus (see Figs 1-6), comprising a sensing device (e g , sensing device 310, see Fig 3) having a plurality of sensor elements (e g , capacitance sensors 320, 322 and 324) that are electrically coupled to detect a presence of a conductive object on the sensing device (e g , detecting a finger of a user on the sensing device, see Fig 3 and [0029]), wherein the plurality of sensor elements correspond to a plurality of button operations (see Fig 6 and [0035]), a keyboard (e g , 138, Fig 1) coupled to the sensing device, wherein the keyboard comprises a plurality of keys (e g , Key A, Key B and Key C, see Fig 6 and [0035]) that correspond to the plurality of sensor elements, and a processing device (e g , controller 118, Fig 3) coupled to the sensing device to distinguish a particular button operation from among the plurality of button operations when a particular key of the plurality of keys of the keyboard is pressed (see Fig 6 and [0028])

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains Patentability shall not be negated by the manner in which the invention was made

4 Claims 23-24 are rejected under 35 U S C 103(a) as being unpatentable over Gitzinger et al (US 2006/0097992, hereinafter Gitzinger) in view of Applicant's admitted prior art (see paragraph [0034] lines 6-8 of instant application)

Regarding claims 23-24, Gitzinger discloses the apparatus of claim 22, wherein the sensing device comprises

a routing layer comprising the plurality of sensor elements, wherein the routing layer is coupled to the processing device (see [0028])

Gitzinger does not disclose wherein the sensing device comprises a pad layer comprising conductive material that corresponds to the plurality of keys and the plurality of sensor elements, wherein the conductive material of the particular key is detected on the sensing device when pressed, an insulating layer coupled to electrically isolate the pad layer and the routing layer, and a plastic film coupled between the plurality of keys and the pad layer of the sensing device

However, as disclosed in Applicant's admitted prior art ([0034] lines 6-8), it is well known in the art to provide four layers such as a plastic film layer, insulator layer, a pad layer and routing layer in a sensing device such as a keyboard Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the sensing device of Gitzinger with a four layer keyboard in order to provide a keyboard operator with an improved keyboard having simpler interconnect, lower weight and improved reliability ([0028] of Gitzinger)

Conclusion

5 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

US 2005/0159126 discloses keyboard and a method that recognizes two or more button operations performed by a finger on a sensing device using one pin of a processing device

US 2006/0097992 disclose a capacitive sensitive touchpad with two drive pins

US 6,882,338 disclose a method comprising detecting a conductive object on a capacitive sensing device having a first capacitive sensor and a second capacitive sensor, wherein the first capacitive sensor and the second capacitive sensor differ in surface areas

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HONG ZHOU whose telephone number is (571)270-5372. The examiner can normally be reached on Monday through Friday 8:30 A.M. - 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit 2629

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/H Z /
Examiner, Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/477 179	06/27/2006	Li GuangHai	CD06065	4534
60909	7590	07/20/2010	EXAMINER	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			ZHOU HONG	
			ARI UNIT	PAPER NUMBER
			2629	
			MAIL DATE	DELIVERY MODE
			07/20/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/477 179	Applicant(s) GUANGHAI LI	
	Examiner HONG ZHOU	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 June 2010

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 22 and 24, 31 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 22 and 24, 31 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Response to Amendment

1 Applicant's amendment filed on June 30, 2010 has been entered. Claim 22 has been amended. Claims 22 and 24-31 are pending in this application, with claim 22 being independent claim.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 22 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. (US 2006/0232559, hereinafter Chien) in view of Gitzinger et al. (US 2006/0097992, hereinafter Gitzinger).

Regarding claim 22, Chien discloses an apparatus (see Fig. 15), comprising a sensing device (e.g., capacitive touchpad 950, [0031]) having a plurality of sensor elements (e.g., key operation conductor 9582) that are electrically coupled to detect a presence of a conductive object on the sensing device (e.g., detecting a finger of a user on the sensing device, see [0031]), wherein the plurality of sensor elements correspond to a plurality of button operations (the sensor elements correspond to keys 1, 2 and 3), a keyboard (see keys 1, 2, 3, Fig. 15, also see Fig. 12) coupled to the sensing device, wherein the keyboard comprises a plurality of keys (e.g., keys 1, 2, and 3 are corresponding to key operation conductor 9582 respectively, see Fig. 15) that correspond to the plurality of sensor elements, and a processing

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device (e g , control circuit 802, Fig 12) coupled to the sensing device to distinguish a particular button operation from among the plurality of button operations when a particular key of the plurality of keys of the keyboard is pressed (see [0030]-[0032]), wherein the sensing device comprises

a routing layer (9582, Fig 12) comprising the plurality of sensor elements, wherein the routing layer is coupled to the processing device (e g , control circuit 802, see Fig 12),

a pad layer (954, Fig 15) comprising conductive material that corresponds to the plurality of keys (e g , conductor 954 are corresponding to keys 1, 2 and 3, see [0031]), wherein the conductive material of the particular key is detected by the routing layer when the particular key is pressed (see [0031]), and wherein the pad layer is disposed underneath the plurality of keys (Fig 15, the pad layer 954 is disposed underneath the keys 952), and

an insulating layer configured to electrically isolate the pad layer and the routing layer, wherein the insulating layer is disposed between the routing layer and the pad layer (see insulating layer 956 separates the pad layer 954 and routing layer 9682)

Chien discloses all the limitation of claim 1 except wherein the pad layer disposed underneath the plurality of keys does not directly contact the routing layer when the particular key is pressed

Gitzinger discloses a keypad (see Fig 7 and [0036]) comprising a plurality of sensing elements having different discrete surfaces (826, 828, 830, see Fig 8 and [0037]) wherein the keypad comprises an insulating layer (e g , plastic housing member 722, Fig 8) and a routing layer (e g , 840) Gitzinger further discloses wherein a conductive object (e g , a user's finger) does not directly contact the routing layer when a key on the keypad is pressed (e g , the keypad

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is printed on the insulating layer, see [0036]), and a processing device (e.g., controller 118, see Fig. 3) obtains the position of the key on the keypad when a capacitance produced by the conductive object and a sensing element corresponding to the key changes (see [0029]-[0030]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the insulating layer and the routing layer of Gitzinger in the apparatus of Chien for producing various capacitance by the pad layer 954 operated as a conductive object and the routing layer having sensing elements with different discrete surfaces, because each of the discrete surfaces of the routing layer of Gitzinger would produce different capacitance when faced in close proximity by a conductive object. Furthermore, it would have been obvious to a person of ordinary skill in the art to modify the apparatus of Chien with the processing device of Gitzinger for distinguishing a particular key operation based on capacitive characteristics of each of discrete surfaces, because the processing device of Gitzinger allows a simpler interconnect, lower weight and improved reliability (see [0028] of Gitzinger).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Chien and Gitzinger to obtain the invention as specified in claim 22.

Regarding claim 24, Chien as modified by Gitzinger does not specifically disclose the apparatus of claim 22, further comprising a plastic film coupled between the plurality of keys and the pad layer of the sensing device.

It is well known in the art of keyboard assembly to provide a plastic film between a plurality of keys and a pad layer to form a protective dust and moisture seal and strengthen the keyboard assembly. Thus, it would have been obvious to a person of ordinary skill in the art at

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the time the invention was made to further provide a plastic film between a plurality of keys and a pad layer of Chien as modified by Gitzinger in order to protect the pad layer from dust and moisture

Regarding claim 25, Chien as modified by Gitzinger disclose the apparatus of claim 22 Gitzinger further discloses wherein a first key of the plurality of keys has a larger corresponding conductive material than a second key of the plurality of keys (e g , a first key 3 has a larger corresponding copper trace 830 than copper trace 828 which corresponding to a second key 2, see Fig 8 and [0037])

Regarding claim 26, Chien as modified by Gitzinger discloses the apparatus of claim 25 Gitzinger further discloses wherein the processing device is configured to recognize that the first key has been pressed when the presence of the corresponding conductive material of the pad layer is detected on a first sensor element of the plurality of sensor elements in the routing layer (e g , the first key 3 has been pressed when a conductive object is detected on the first sensing element 830, see Figs 3, 7 and 8 of Gitzinger), and to recognize that the second key has been pressed when the presence of the corresponding conductive material of that pad layer is detected on a second sensor element of the plurality of sensor elements in the routing layer (e g , the second key 2 has been pressed when the conductive object is detected on the second sensing element 830, see Figs 3, 7 and 8 of Gitzinger)

Regarding claim 27, Chien as modified by Gitzinger discloses the apparatus of claim 22. Gitzinger further discloses wherein a first sensor element of the plurality of sensor elements in the routing layer comprises a first sensitivity (e.g., the first sensor element corresponding to key A has a frequency range of F1-F2, see Fig. 6) and a second sensor element of the plurality of sensor elements in the routing layer comprises a second sensitivity (e.g., the second sensor element corresponding to key B has a frequency range of F3-F4), wherein the first sensitivity is greater than the second sensitivity (the sensitivity of frequency range of F1-F2 is greater than the sensitivity of frequency range of F3-F4, see Fig. 6), and wherein the processing device (118) is configured to distinguish the particular key that has been pressed based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element (see Fig. 6 and [0034]-[0035]).

Regarding claim 28, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are electrically coupled (see Fig. 3).

Regarding claim 29, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are coupled to the processing device using one pin (see Fig. 3).

Regarding claim 30, Chien as modified by Gitzinger discloses the apparatus of claim 22. Gitzinger further discloses wherein the processing device is configured to determine a

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capacitance on the sensing device (e.g., measuring the time constant RC which includes a capacitance of finger on the capacitive sensing device 310, see [0029]-[0030]), and wherein processing device is configured to recognize that a first key of the plurality of keys is pressed when the capacitance is greater than a first sensitivity threshold (e.g., detecting key A is pressed when the detected capacitance is greater than RC1 or frequency F1, see Fig 6 and [0034]-[0035]) and that a second key of the plurality of keys is pressed when the capacitance is less than the first sensitivity threshold and greater than a second sensitivity threshold (detecting key B is pressed when the detected capacitance is less than the time constant RC1 or frequency F1 and greater than the time constant RC3 or frequency F3, see Fig 6)

Regarding claim 31, Chen as modified by Gitzinger discloses the apparatus of claim 30. Gitzinger further discloses wherein the first and second sensitivity thresholds are greater than a presence threshold (e.g., the frequencies F1 and F3 are greater than frequency F5, Fig 6), wherein the presence threshold is configured to indicate the detected presence of the conductive object by the routing layer (e.g., indicating the detected presence of a finger on key C)

Response to Arguments

4 Applicant's arguments, filed June 30, 2010, with respect to the newly added limitations in claim 22 have been fully considered but they are not persuasive

On pages 5-7 of the Applicant's Remarks, the Applicant argues that the combination of Chen and Gitzinger does not disclose that "the pad layer disposed underneath the plurality of keys does not directly contact the routing layer when the particular key is pressed" The

examiner respectfully disagrees with this argument. In Fig. 15, Chien clearly discloses a pad layer 954 disposed underneath a plurality of keys 9522. Chien fails to disclose that the pad layer does not directly contact the routing layer when the particular key is pressed. However, Gitzinger discloses a touchpad that produces various capacitances by a conductive object (e.g., a finger) and a routing layer (e.g., 840) having discrete surfaces (e.g., 826, 828 and 830, see Fig. 8 and [0037]) and distinguishes which key has been selected based on the produced capacitance (see [0031]-[0032]). Gitzinger further discloses an insulating layer (e.g., plastic housing member 722, Fig. 8) separating the conductive object and the routing layer when a particular key is pressed. Therefore, it would have been obvious to a person of ordinary skill in the art to use the insulating layer and the routing layer of Gitzinger in the invention of Chien for producing different capacitance by the pad layer 954 and the routing layer having discrete surfaces and distinguishing a particular key operation based on capacitance characteristics of discrete surfaces because the touchpad of Gitzinger allows for a simpler interconnect, lower weight and improved reliability (see [0028] of Gitzinger). Thus amended claim 22 is still met by the combination of Chien and Gitzinger.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HONG ZHOU whose telephone number is (571)270-5372. The examiner can normally be reached on Monday through Friday 8:30 A.M. - 5 P.M.

Application/Control Number 11/477,179

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/H Z/

Examiner, Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/477 179	06/27/2006	Li GuangHai	CD06065	4534

60909 7590 11/18/2009
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
ZHOU HONG

ARI UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
11/18/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/477 179	Applicant(s) GUANGHAI LI	
	Examiner HONG ZHOU	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 September 2009

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 22, 31 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 22, 31 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

DETAILED ACTION

Response to Amendment

1 Applicant's amendment filed on September 9, 2009 has been entered. Claims 22 and 24 have been amended. Claims 1-21 and 23 have been cancelled. Claims 25-31 have been added. Claims 22 and 24-31 are pending in this application, with claim 22 being independent claim.

Claim Rejections - 35 USC § 102

2 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3 Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Chien et al. (US 2006/0232559, hereinafter Chien).

Regarding claim 22, Chien discloses an apparatus (see Fig. 15), comprising a sensing device (e.g., capacitive touchpad 950, [0031]) having a plurality of sensor elements (e.g., key operation conductor 9582) that are electrically coupled to detect a presence of a conductive object on the sensing device (e.g., detecting a finger of a user on the sensing device, see [0031]), wherein the plurality of sensor elements correspond to a plurality of button operations (the sensor elements correspond to keys 1, 2 and 3), a keyboard (see keys 1, 2, 3, Fig. 15, also see Fig. 12) coupled to the sensing device, wherein the keyboard comprises a plurality of keys (e.g., keys 1, 2, and 3 are corresponding to key operation conductor 9582).

respectively, see Fig 15) that correspond to the plurality of sensor elements, and a processing device (e.g., control circuit 802, Fig 12) coupled to the sensing device to distinguish a particular button operation from among the plurality of button operations when a particular key of the plurality of keys of the keyboard is pressed (see [0030]-[0032]), wherein the sensing device comprises a routing layer (9582, Fig 12) comprising the plurality of sensor elements, wherein the routing layer is coupled to the processing device (e.g., control circuit 802, see Fig 12), a pad layer (954, Fig 15) comprising conductive material that corresponds to the plurality of keys (e.g., conductor 954 are corresponding to keys 1, 2 and 3, see [0031]), wherein the conductive material of the particular key is detected by the routing layer when the particular key is pressed (see [0031]), and an insulating layer configured to electrically isolate the pad layer and the routing layer (see insulating layer 956 separates the pad layer 954 and routing layer 9682)

Claim Rejections - 35 USC § 103

4 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5 Claims 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al (US 2006/0232559, hereinafter Chien) in view of Gitzinger et al (US 2006/0097992, hereinafter Gitzinger)

Regarding claim 24, Chien does not specifically disclose the apparatus of claim 22, further comprising a plastic film coupled between the plurality of keys and the pad layer of the

sensing device Gitzinger discloses a capacitive touch keypad (keypad 138, Figs 7 and 8) having a plastic film (plastic housing member 722, Fig 8) coupled between a plurality of keys and a pad layer of a sensing device (see [0036]-[0037])

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the touchpad of Chien with the keypad of Gitzinger to comprise a plurality of physical keys formed on the touchpad so as to provide a keypad having tactile sensations Furthermore, it would have been obvious to comprising a plastic film between the plurality of keys of the keypad and a pad layer in order to protect the pad layer from moisture

Regarding claim 25, Chien does not disclose the apparatus of claim 22, wherein a first key of the plurality of keys has a larger corresponding conductive material than a second key of the plurality of keys

Gitzinger further discloses the keypad 138 (Fig 7), wherein a first key of a plurality of keys has a larger corresponding conductive material than a second key of the plurality of keys (e.g., copper traces 830, 828 and 826 are corresponding keys 3, 2, and 1 of the keypad, respectively, and a first key 3 has a larger corresponding copper trace than a second key 2, also see Fig 8 and [0037])

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the keypad of the Chien with the feature of the pad layer Gitzinger to provide copper traces with a first discrete surface, a second discrete surface and a third discrete surface that differs from one another in area, because the each of the discrete

surfaces of the pad layer of Gitzinger would produce different capacitance when faced in close proximity by a user's finger

Regarding claim 26, Chien as modified by Gitzinger discloses the apparatus of claim 25. Chien further discloses wherein the processing device is configured to recognize that the first key has been pressed when the presence of the corresponding conductive material of the pad layer is detected on a first sensor element of the plurality of sensor elements in the routing layer (e.g., the first key 3 has been pressed when the discrete surface 954 corresponding to the first key coupled the key operation conductor 9582, see [0031]), and to recognize that the second key has been pressed when the presence of the corresponding conductive material of that pad layer is detected on a second sensor element of the plurality of sensor elements in the routing layer (e.g., the second key 2 has been pressed when the discrete surface 954 corresponding to the second key coupled the key operation conductor 9582, see [0031]).

Regarding claim 27, Chien discloses the apparatus of claim 22, but does not disclose wherein a first sensor element of the plurality of sensor elements in the routing layer comprises a first sensitivity and a second sensor element of the plurality of sensor elements in the routing layer comprises a second sensitivity, wherein the first sensitivity is greater than the second sensitivity, and wherein the processing device is configured to distinguish the particular key that has been pressed based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element.

Gitzinger discloses a capacitive touch keypad (see Fig 7 and [0028]) comprises a plurality of sensor elements (e g , 320, 322 and 324, see Fig 3 and [0029]) in a routing layer (see routing wires connecting the sensor elements 320, 322 and 324 to the controller 118, see [0028]), wherein a first sensor element of the plurality of sensor elements in the routing layer comprises a first sensitivity (e g , the first sensor element 320 corresponding to key A has a frequency range of F1-F2, see Fig 6) and a second sensor element of the plurality of sensor elements in the routing layer comprises a second sensitivity (e g , the second sensor element 322 corresponding to key B has a frequency range of F3-F4), wherein the first sensitivity is greater than the second sensitivity (the sensitivity of frequency range of F1-F2 is greater than the sensitivity of frequency range of F3-F4, see Fig 6), and wherein a processing device (118) is configured to distinguish the particular key that has been pressed based on the first sensitivity of the first sensor element and the second sensitivity of the second sensor element (see Fig 6 and [0034]-[0035])

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the touchpad of Chien with the features of the sensing elements 310 and the processor 118 of Gitzinger for recognizing a particular key that is pressed, because the keypad of Gitzinger would provide an user input device with fewer routing wires, lower weight and improved reliability (see [0028])

Regarding claim 28, Chien as modified by Gitzinger discloses the apparatus of claim 27 Gitzinger further discloses wherein the first and second sensor elements are electrically coupled (see Fig 3)

Regarding claim 29, Chien as modified by Gitzinger discloses the apparatus of claim 27. Gitzinger further discloses wherein the first and second sensor elements are coupled to the processing device using one pin (see Fig. 3).

Regarding claim 30, Chien discloses the apparatus of claim 22, wherein the processing device is configured to determine a capacitance on the sensing device (e.g., the control circuit 802 detects the capacitance of axis wires, see Fig. 12 and [0030]), but does not disclose wherein the processing device is configured to recognize that a first key of the plurality of keys is pressed when the capacitance is greater than a first sensitivity threshold and that a second key of the plurality of keys is pressed when the capacitance is less than the first sensitivity threshold and greater than a second sensitivity threshold.

Gitzinger discloses a capacitive keypad (e.g., keypad 138, Fig. 7) comprising a processing device (e.g., controller 118, Fig. 3), wherein the processing device is configured to determine a capacitance on the sensing device (e.g., measuring the time constant RC which includes a capacitance of finger on the capacitive sensing device 310, see [0029]-[0030]), and wherein the processing device is configured to recognize that a first key of the plurality of keys is pressed when the capacitance is greater than a first sensitivity threshold (e.g., detecting key A is pressed when the detected capacitance is greater than $RC1$ or frequency $F1$, see Fig. 6 and [0034]-[0035]) and that a second key of the plurality of keys is pressed when the capacitance is less than the first sensitivity threshold and greater than a second sensitivity threshold (detecting key B is pressed when the detected capacitance is less than the time constant $RC1$ or frequency $F1$ and greater than the time constant $RC3$ or frequency $F3$, see Fig. 6).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the capacitive touchpad of Chien with the features of the capacitive sensing device 310 and the processor 118 of Gitzinger for recognizing that a particular key is pressed, because the capacitive keypad of Gitzinger would provide an user input device with fewer routing wires, lower weight and improved reliability (see [0028])

Regarding claim 31, Chien as modified by Gitzinger discloses the apparatus of claim 30 Gitzinger further discloses wherein the first and second sensitivity thresholds are greater than a presence threshold (e g , the frequencies F1 and F3 are greater than frequency F5, Fig 6), wherein the presence threshold is configured to indicate the detected presence of the conductive object by the routing layer (e g , indicating the detected presence of a finger on key C)

Response to Arguments

6 Applicant's arguments with respect to claim 22 have been considered but are moot in view of the new ground(s) of rejection

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HONG ZHOU whose telephone number is (571)270-5372. The examiner can normally be reached on Monday through Friday 8:30 A.M. - 5PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number 11/477,179

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Art Unit 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H Z/

Examiner, Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629

CY00002543



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/484 085	07/10/2006	Tao Peng	CD06043	9100
60909 7590 09/17/2009 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER KUMAR SRILAKSHMI K	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 09/17/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/484 085	PENG ET AL	
	Examiner	Art Unit	
	SRILAKSHMI K KUMAR	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 20 January 2009

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1 20 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) 13 16 is/are allowed

6) Claim(s) 1 6 and 17 20 is/are rejected

7) Claim(s) 7 12 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
a) All b) Some * c) None of

1) Certified copies of the priority documents have been received

2) Certified copies of the priority documents have been received in Application No. _____

3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

The following office action is in response to the application filed on July 10, 2006. Claims 1-20 are pending.

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

2 Claims 1-5, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Gillespie (US 5543591)

As to independent claim 1, Gillespie teaches an apparatus, comprising a first plurality of sensor elements coupled together (Fig. 2A-C, items 34, first vertical line connected together vertically along conductive trace 30), a second plurality of sensor elements (Figs. 2A-C, item 34, second vertical line connected vertically along conductive trace 30) coupled together independently of the first plurality of sensor elements, and a third plurality of sensor elements (Figs. 2A-C, item 34, third vertical line connected together vertically along conductive trace 30) coupled together independently of the first and second pluralities of sensor elements, wherein the sensor elements of the first, second, and third pluralities of sensor elements are interspersed and disposed in a repetitive sequence along a movement path of a conductive object (Fig. 2A)

As to dependent claim 2, limitations of claim 1, and further comprising, Gillespie teaches wherein the movement path comprises a straight path or a curved path (Fig. 2A, where the path is a straight path).

As to dependent claim 3, limitations of claim 1, and further comprising, Gillespie teaches wherein the repetitive sequence in a first direction along the movement path is unique compared to a reverse sequence in a reverse direction along the movement path (col 9, lines 62-col 10, line 35, col 31, line 60-col 32, line 13)

As to dependent claim 4, limitations of claim 1, and further comprising, Gillespie teaches wherein a first sensor element of the second plurality of sensor elements is disposed between a first sensor element of the first plurality of sensor elements and a first sensor element of the third plurality of sensor elements, forming a first iteration of sensor elements, a second sensor element of the second plurality of sensor elements is disposed between a second sensor element of the first plurality of sensor elements and a second sensor element of the third plurality of sensor elements, forming a second iteration of sensor elements, and the first iteration of sensor elements is disposed in sequence along the movement path with the second iteration of sensor elements (shown by Fig 2A, where the sensor elements are disposed vertically, the first sensor of the second line is disposed between the first sensor of the first line and the first sensor of the third line, the second sensor of the second line is disposed between the second sensor of the first line and the second sensor of the third line, etc)

As to dependent claim 5, limitations of claim 1, further comprising Gillespie teaches a sensor element of a fourth plurality of sensor elements which are independent of the first, second, and third pluralities of sensor elements (Fig 2A, shown by the fourth line)

As to claims 17 and 18, these claims differ from claims 1-5, above only in that claims 17 and 18 are a method, whereas claims 1-5 are directed to an apparatus or device. Thus method

claims 17 and 18 are analyzed as previously discussed with respect to apparatus/device claims 1-5, above

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negatived by the manner in which the invention was made

4 Claims 6, 19 and 20 are rejected under 35 U S C 103(a) as being unpatentable over Gillespie as applied to claims 1-5, 17 and 18 and further in view of Applicant's Admitted Prior Art (hereinafter, AAPA)

As to dependent claim 6, limitations of claim 1, further comprising Gillespie teaches in Fig 1, where the sensor area is connected to a processing unit (item 14) However, Gillespie does not teach first cap sensor coupled to the first plurality of sensor elements, a second cap sensor coupled to the second plurality of sensor elements, and a third cap sensor coupled to the third plurality of sensor elements AAPA teaches in Fig 1B, a first cap sensor (cap sensor 1) connected to the first plurality of sensor elements (Fig 1B, shown by sensor element 1), a second cap sensor (cap sensor 2) connected to the second plurality of sensor elements (shown by sensor element 2), and a third cap sensor (cap sensor 3) coupled to the third plurality of sensor elements (sensor element 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the cap sensors as taught by AAPA coupled to the plurality of sensor elements in order sense the signals from the plurality of sensor elements to determine directional movement (AAPA, paragraph 0005)

As to claims 19 and 20, these claims differ from claim 5, above only in that claims 19 and 20 are a method, whereas claim 6 is directed to an apparatus or device. Thus method claims 19 and 20 are analyzed as previously discussed with respect to apparatus/device claim 6, above.

Allowable Subject Matter

5 Claims 13-16 are allowed.

6 The following is an examiner's statement of reasons for allowance.

With respect to independent claim 13, the prior art of record do not teach wherein at least two non-adjacent sensor elements of the plurality of sensor elements are coupled to a shared cap sensor of the plurality of cap sensors, and at least one other sensor element of the plurality of sensor elements is disposed between the two non-adjacent sensor elements and coupled to another cap sensor of the plurality of cap sensors, and a sequence detector coupled to the plurality of cap sensors to detect a conductive sequence of a movement of a conductive object in proximity to at least some of the plurality of sensor elements.

With respect to claims 14-16, these claims are allowable as they depend upon an allowed base claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7 Claims 7-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit 2629

8 The following is a statement of reasons for the indication of allowable subject matter

With respect to claim 7, the prior art of record do not teach a sequence detector coupled to the first, second and third cap sensors to detect a conductive sequence of a movement of the conductive object in proximity to at least some of the first, second and third pluralities of sensor elements

With respect to claims 8-12, these claims are objected to as they depend upon an objected to base claim

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SRILAKSHMI K KUMAR whose telephone number is (571)272-7769 The examiner can normally be reached on 7 00 am to 4 30 pm

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Lefkowitz can be reached on 571 272 3638 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300

Application/Control Number 11/484,085

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Art Unit 2629

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/Srilakshmi K. Kumar/
Primary Examiner
Art Unit 2629

September 12, 2009
SKK

CY00002551



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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/493 350	07/25/2006	Mark R. Lee	CD06097	8307

60909 7590 06/16/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER

SHAPIRO LEONID

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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06/16/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply, if any, is set in the attached communication

Office Action Summary	Application No 11/493 350	Applicant(s) LEE ET AL	
	Examiner Leonid Shapiro	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address -
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 July 2006
2a) This action is **FINAL** 2b) This action is non final
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 20 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration
5) Claim(s) _____ is/are allowed
6) Claim(s) 1, 10 and 12, 20 is/are rejected
7) Claim(s) 11 is/are objected to
8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner
10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)
a) All b) Some * c) None of
1 Certified copies of the priority documents have been received
2 Certified copies of the priority documents have been received in Application No. _____
3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))
* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)
2) Notice of Draftsperson's Patent Drawing Review (PTO 948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO 413)
Paper No(s)/Mail Date _____
5) Notice of Informal Patent Application
6) Other _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form
the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

1 Claims 1-7 10 are rejected under 35 U S C 102(e) as being anticipated by
Hristov (US 2008/0007434 A1)

As to claim 1 Hristov teaches a method comprising

logically grouping capacitance sensors of an array of capacitance sensors
into sensor groups wherein each sensor group includes at least two of the capacitance
sensors (fig 11, item S2, par 0103)

measuring a value indicative of a capacitance for each of the sensor groups
(fig 11 item S3 par 0104 and fig 15 items KEY# THRESHOLD, par 0133), and

analyzing the values of the sensor groups to determine a location of a user
interaction with the array of capacitance sensors (fig 11 item S8, par 0109)

As to claim 2, Hristov teaches logically grouping the capacitance sensors
comprises sequentially connecting the sensor groups to a shared capacitance sensor
circuit, wherein each of the sensor groups comprises a temporal electrical connection
between a different set of two or more of the capacitance sensors (fig 11 item S2 par
0103)

As to claims 3,5 7 Hristov teaches assigning the value measured for each of the sensor groups to a particular capacitance sensor within each corresponding one of the sensor groups (fig 15, items KEY#, THRESHOLD par 0133)

As to claim 4, Hristov teaches the sensor groups include physically adjacent capacitance sensors within the array of capacitance sensors (fig 2, items 1-2 and correspondent text)

As to claim 6 Hristov teaches adjacent sensor groups include at least one common capacitance sensor (fig 12 item B, par 123)

As to claim 10 Hristov teaches the array of capacitance sensors comprises a touch pad of a user interface (fig 1, items 102,104)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negated by the manner in which the invention was made

2 Claims 12-14,16-17,19-20 are rejected under 35 U S C 103(a) as being unpatentable over Hristov

As to claims 12,16 Hristov teaches An apparatus, comprising
a processing device (fig 1, item 108),

a user interface including an array of capacitance sensors coupled to the processing device (fig 1, items 100 102,104 106 108, pars 0049 0052), and

comprising

measuring a value indicative of a combined capacitance of a sensor group including two or more capacitance sensors within the array of capacitance sensors (fig 11 item S3 par 0104 and fig 15 items KEY# THRESHOLD par 0133)

scanning the array of capacitance sensors to obtain a plurality of values corresponding to a plurality of sensor groups each including two or more capacitance sensors within the array of capacitance sensors (fig 11 item 7), and

determining a location of a user interaction with the array of capacitance sensors based on the plurality of values (fig 11, item S8, par 0109)

Hristov does not disclose a memory unit coupled to the processing device the memory unit having stored therein instructions that if executed by the processing device, will cause the processing device to perform operations

Hristov teaches that controller may be provided by a programmed general purpose processor (par 0052)

It would have been obvious to one of ordinary skill in the art at the time of the invention to have a memory unit coupled to the processing device in order to use a programmed general purpose processor (par 0052)

As to claim 13 Hristov teaches the sensor groups include physically adjacent capacitance sensors within the array of capacitance sensors (fig 2, items 1 2 and correspondent text)

As to claims 14,17 Hristov teaches adjacent sensor groups include at least one common capacitance sensor (fig 12 item B par 123)

As to claim 19 Hristov teaches a relaxation oscillator circuit (par 0051)

As to claim 20, Hristov teaches the array of capacitance sensors comprises a touch pad of a user interface (fig 1, items 102,104)

3 Claims 8-9 are rejected under 35 U S C 103(a) as being unpatentable over Hristov in view of Philipp (US 2005/0052429 A1)

Hristov does not disclose a linear or circular slider of a user interface

Philipp teaches a linear or circular slider of a user interface (figs 1-2)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Philipp into Hristov system in order to control appliances (par 0002 in the Philipp reference)

4 Claim 18 is rejected under 35 U S C 103(a) as being unpatentable over Hristov in view of Gilliespie et al. (US 2004/0178997 A1)

Hristov does not disclose an analog multiplexer bus coupled to sequentially couple the plurality of sensor groups to the capacitance sensor

Gilliespie et al teaches an analog multiplexer bus coupled to sequentially couple the plurality of sensor groups to the capacitance sensor (fig 13 items 264,270 par 0234)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Gilliespie et al into Hristov system in order to enhance a position recognition (par 0003 in the Gilliespie et al reference)

Allowable Subject Matter

5 Claims 11-15 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Relative to claim 11 the major difference between the teaching of the prior art of record (Philipp Hristov) and the instant invention is that discretely scanning each of the capacitance sensors within the array of capacitance sensors individually, and determining an approximate location of the user interaction based on the scanning, wherein measuring the value indicative of the capacitance for each of the sensor groups comprises measuring the value indicative of the capacitance for a portion of the sensor groups localized about the approximate location to more precisely determine the location after discretely scanning each of the capacitance sensors.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m.

Application/Control Number 11/493,350
Art Unit 2629

Page 7

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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06/08/10
/L S/
Examiner, Art Unit 2629

/Richard Hjerpe/
Supervisory Patent Examiner Art Unit 2629

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/493 350	07/25/2006	Mark R. Lee	CD06097	8307

60909 7590 11/09/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
SHAPIRO LEONID

ART UNIT PAPER NUMBER
2629

MAIL DATE DELIVERY MODE
11/09/2010 PAPER

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	11/493 350	LEE ET AL	
	Examiner	Art Unit	
	Leonid Shapiro	2629	

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Status

1) Responsive to communication(s) filed on 03 September 2010
2a) This action is FINAL 2b) This action is non final
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration
5) Claim(s) _____ is/are allowed
6) Claim(s) 1-20 is/are rejected
7) Claim(s) _____ is/are objected to
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a) All b) Some * c) None of
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Claim Rejections - 35 USC § 103

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1 Claims 1-7 10-17,19-20 are rejected under 35 U S C 102(e) as being unpatentable over Speeter (5 237,879) in view of Hristov (US 2008/0007434 A1)

As to claim 1 Speeter teaches a method, comprising

logically grouping capacitance sensors of an array of capacitance sensors into sensor groups, wherein each sensor group includes at least two of the capacitance sensors (fig 1 items 13 15, col 1 line 65 to col 2 line 2 and col 2 lines 51-66)

measuring a value indicative of a capacitance for each of the sensor groups (col 3, lines 7-14)

Speeter does not disclose analyzing the values of the sensor groups to determine a location of a user interaction with the array of capacitance sensors

Hristov teaches analyzing the values of the sensor groups to determine a location of a user interaction with the array of capacitance sensors (fig 11, item S8, par 0109)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Hristov into Speeter system in order to prevent accidental false inputs (par 0001 in the Hristov reference)

As to claims 12, Speeter teaches a machine-readable medium that provides instructions that, if executed by a machine, will cause the machine to perform operations comprising

measuring a value indicative of a combined capacitance of a sensor group including two or more capacitance sensors of an array of capacitance sensors (col 3 lines 7-14),

scanning the array of capacitance sensors to obtain a plurality of values corresponding to a plurality of sensor groups each including two or more capacitance sensors within the array of capacitance sensors (col 1 line 65 to col 2 line 2)

Speeter does not disclose determining a location of a user interaction with the array of capacitance sensors based on the plurality of values

Hristov teaches analyzing the values of the sensor groups to determine a location of a user interaction with the array of capacitance sensors (fig 11 item S8, par 0109)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Hristov into Speeter system in order to prevent accidental false inputs (par 0001 in the Hristov reference)

As to claims 16, Speeter teaches an apparatus comprising

measuring a value indicative of a combined capacitance of a sensor group including two or more capacitance sensors of an array of capacitance sensors (fig 1, items 13, 15, col 1 line 65 to col 2 line 2 and col 2 lines 51-66 and col 3 lines 7-14)

scanning the array of capacitance sensors to obtain a plurality of values corresponding to a plurality of sensor groups each including two or more capacitance sensors within the array of capacitance sensors (col 1, line 65 to col 2, line 2)

Speeter does not disclose a processing device, a memory unit coupled to the processing device the memory unit having stored therein instructions that if executed by the processing device will cause the processing device to perform operations comprising a user interface including an array of capacitance sensors coupled to the processing device determining a location of a user interaction with the array of capacitance sensors based on the plurality of values

Hristov teaches a processing device (fig 1 item 108) a memory unit coupled to the processing device, the memory unit having stored therein instructions that, if executed by the processing device will cause the processing device to perform operations (fig 1 item 108 par 0052) a user interface including an array of capacitance sensors coupled to the processing device (fig 1 items 100 102 104 106 108, pars 0049,0052), analyzing the values of the sensor groups to determine a location of a user interaction with the array of capacitance sensors (fig 11 item S8, par 0109)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Hristov into Speeter system in order to prevent accidental false inputs (par 0001 in the Hristov reference)

Notice, that general purpose processor in par 0052 inherently will have the memory unit having stored therein instructions that if executed by the processing device, will cause the processing device to perform operations

As to claim 2, Speeter teaches logically grouping the capacitance sensors comprises sequentially connecting the sensor groups to a shared capacitance sensor circuit wherein each of the sensor groups comprises a temporal electrical connection between a different set of two or more of the capacitance sensors (fig 1 items 13 15 and correspondent text)

As to claims 3,5,7 Hristov teaches assigning the value measured for each of the sensor groups to a particular capacitance sensor within each corresponding one of the sensor groups (fig 15, items KEY#, THRESHOLD, par 0133)

As to claim 4 Hristov teaches the sensor groups include physically adjacent capacitance sensors within the array of capacitance sensors (fig 2 items 1-2 and correspondent text)

As to claim 6 Hristov teaches adjacent sensor groups include at least one common capacitance sensor (fig 12 item B, par 123)

As to claim 10 Hristov teaches the array of capacitance sensors comprises a touch pad of a user interface (fig 1 items 102 104)

As to claims 11 15 Hristov teaches discretely scanning each of the capacitance sensors within the array of capacitance sensors individually (fig 11, item S8), and determining an approximate location of the user interaction based on the scanning (fig 11 item S8) and Speeter teaches measuring the value indicative of the capacitance to

each of the sensor groups comprises measuring the value indicative of the capacitance to a portion of the sensor groups localized about the approximate location to more precisely determine the location after discretely scanning each of the capacitance sensors, wherein the portion of the sensor groups is less than all of the sensor groups within the array of capacitance sensors (from col 1, line 9 to col 2, line 12)

As to claim 13, Speeter teaches the sensor groups include physically adjacent capacitance sensors within the array of capacitance sensors (fig 1, items 13,15 and correspondent text)

As to claims 14-17 Hristov teaches adjacent sensor groups include at least one common capacitance sensor (fig 12 item B, par 123)

As to claim 19, Hristov teaches a relaxation oscillator circuit (par 0051)

As to claim 20 Hristov teaches the array of capacitance sensors comprises a touch pad of a user interface (fig 1 items 102-104)

2 Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Speeter, Hristov in view of Philipp (US 2005/0052429 A1)

Speeter, Hristov do not disclose a linear or circular slider of a user interface

Philipp teaches a linear or circular slider of a user interface (figs 1-2)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Philipp into Speeter, Hristov system in order to control appliances (par 0002 in the Philipp reference)

3 Claim 18 is rejected under 35 U S C 103(a) as being unpatentable over Speeter Hristov in view of Gilliespie et al (US 2004/0178997 A1)

Speeter Hristov do not disclose an analog multiplexer bus coupled to sequentially couple the plurality of sensor groups to the capacitance sensor

Gilliespie et al teaches an analog multiplexer bus coupled to sequentially couple the plurality of sensor groups to the capacitance sensor (fig 13 items 264,270 par 0234)

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Gilliespie et al into Speeter, Hristov system in order to enhance a position recognition (par 0003 in the Gilliespie et al reference)

Response to Arguments

4 Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a m to 5 p m

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number 11/493,350
Art Unit 2629

Page 8

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10/25/10
/L S/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner Art Unit 2629

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/502 267	08/09/2006	Hakan K Jansson	16820 P449	7717
75405	7590	08/11/2008	EXAMINER	
CYPRESS/BLAKELY BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE CA 94085 4040			VALONE THOMAS F	
			ART UNIT	PAPER NUMBER
			2831	
			MAIL DATE	DELIVERY MODE
			08/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply, if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/502 267	JANSSON HAKAN K	
	Examiner	Art Unit	
	THOMAS F. VALONE	2831	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 August 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1-20 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/03)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>9/15/06</u>	6) <input type="checkbox"/> Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country or patented or described in a printed publication in this or a foreign country before the invention thereof by the applicant for a patent

2 Claims 1 10 18 are rejected under 35 U S C 102(a) as being anticipated by O Dowd (6,970,126)

O Dowd teaches a method of providing a sensor element (variable sensor 90f col 7 line 31) and measuring a capacitance on the sensor element using two charge rates (either a VH and VL or a square wave col 7 line 19-24) O'Dowd further explains the two rates by indicating a first voltage is applied to the input terminal and a second voltage level in the second phase (col 7 line 55-60)

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negated by the manner in which the invention was made

4 Claims 5-7 9 20 are rejected under 35 U S C 103(a) as being unpatentable over O Dowd as applied to claims 1 10 18 above and further in view of Cook (4 825 147) and Lewis (6 191 723)

Regarding claims 5-7, 20, the teachings of O Dowd are reviewed above

O Dowd does not teach discharging a sensor element for a fixed time at the first discharging rate and then discharging the sensor element at the second discharging rate to reach a threshold voltage that is programmable after the fixed time that is programmable O Dowd does not teach an exponential charging rate

Cook, from the same field of endeavor teaches a second discharge rate that continues until the level reaches a threshold of 0.2 volts (col 3 line 15) Cook further teaches that the discharge circuit is under complete control of the microprocessor (10, col 2 line 53-55) which is programmable to one of ordinary skill, as in claims 5, 7, 20

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Cook's programmable threshold discharge technique in the O Dowd method for measuring capacitance for the benefit of accuracy as suggested by Cook (col 4 line 60-65)

O Dowd as modified by Cook (O-C) does not teach discharging the sensor capacitor for a fixed time that is programmable O-C does not teach an exponential charging rate

Lewis from the same field of endeavor teaches a fixed discharge time of 0.66 seconds (col 5 line 30-45) that is programmable For example Lewis also teaches a first discharge time of 0.25 seconds depending upon the value of the capacitance and

even extending the time to infinity, to slow the discharge rate to the minimum (col 5, line 30-45), as in claims 5, 6, 20 Lewis also teaches an exponential discharge rate (col 3, line 35-40) and an exponential charging rate equation (eq 4 col 4, line 10), as long as the current "I" not constant, as is well known to one of ordinary skill, as in claim 9

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis teachings of an exponential charging and a fixed but programmable discharge time in the O-C method of discharging until a threshold voltage is reached for the benefit of including a wide range of possible capacitance values as suggested by Lewis (col 5, line 35-40)

5 Claims 2, 8, 11, 19 are rejected under 35 U S C 103(a) as being unpatentable over O Dowd in view of Cook (4 825,147)

Regarding claims 2, 8, 11, 19 the teachings of O Dowd are reviewed above

O Dowd does not teach charging a sensor element for a fixed time at the first charging rate and then charging the sensor element at the second charging rate which is different, to reach a threshold voltage after the fixed time, both of which are linear

Cook from an analogous field of endeavor teaches charging a capacitor for a fixed time at a first charging rate (17 723 milliseconds with 2 ms off time, col 4 line 50-55) and then charging the sensor element at a second charging rate which is different to reach a threshold voltage (1 0 volts col 3 line 19) after charging the sensor element for the fixed time The first charging rate is the first 15 723 ms of on time and the second charging rate is interpreted as the subsequent 17 723 ms cycle repeated many times

with 2 ms off time to begin with and repeated many times. Cook further teaches that both charging rates are linear (col 3 line 58-65 and Fig 4)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Cook's fixed time and subsequent threshold linear charging pattern in the O Dowd method for measuring capacitance for the benefit of accuracy as suggested by Cook (col 4, line 61)

6 Claims 3, 4, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over O Dowd as modified by Cook (O-C) as applied to claims 2, 11 above and further in view of Lewis (6,191,723)

Regarding claim 3, the teachings of O-C are reviewed above.

O-C does not teach two discharge rates.

Lewis from the same field of endeavor, teaches two discharging rates for the measured capacitance. Lewis teaches a discharge time of 0.66 seconds or 0.25 seconds depending upon the value of the capacitance and even extending the time to infinity, to slow the discharge rate to the minimum (col 5 line 30-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis' teachings of two discharging rates in the O-C method for measuring capacitance, for the benefit of accommodating a larger range of capacitance, as suggested by Lewis (col 5, line 40)

Regarding claims 4, 12 the teachings of O-C are reviewed above. O-C teaches a second discharge rate that continues until it reaches 0.2 volts (Cook col 3 line 15)

O-C does not teach a first discharge rate wherein the sensor is discharged for a fixed time at a first rate to measure the capacitance on the sensor element

Lewis teaches a fixed discharge time of 0.66 seconds (col 5 line 30-45)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included Lewis teachings of a fixed discharge time in the O-C method of discharging until a threshold voltage is reached for the benefit of including a wide range of possible capacitance values as suggested by Lewis (col 5, line 35-40)

7 Claims 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over O Dowd in view of GuangHai (20070296709)

Regarding claim 13, the teachings of O Dowd are reviewed above

O Dowd does not teach a controller and a relaxation oscillator coupled to the controller circuit and the sensor element

GuangHai from the same field of endeavor teaches a controller circuit (par 51) and a relaxation oscillator (par 64) coupled to the controller circuit and the sensor element (par 59 and Fig 1B and 3B)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have improved O Dowd's capacitive sensor with a capacitive relaxation oscillator coupled to a controller circuit as taught by GuangHai for the benefit of measuring capacitance on multiple sensor elements, as suggested by GuangHai (par 66)

Regarding claims 14, 16 the teachings of O Dowd are reviewed above

O Dowd does not teach a programmable timer coupled to a relaxation oscillator and a logic circuit or digital counter coupled to both

GuangHai teaches programmable timer coupled to a relaxation oscillator and a logic circuit coupled to both (par 64-5), including a digital counter (420, Fig 4) that counts a time period. GuangHai's logic circuit is detailed in Figures 2 and 4

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have improved O Dowd's capacitive sensor with a programmable timer and digital counter coupled to the capacitive relaxation oscillator coupled to a controller circuit as taught by GuangHai for the benefit of measuring capacitance on a sensor array as suggested by GuangHai (par 65)

Regarding claim 15 the teachings of O Dowd are reviewed above. O Dowd further teaches two voltage sources which also are a source of current to one of ordinary skill (col 7 line 15-25) providing charging current to the sensor element. O Dowd further teaches a comparator coupled to the above-mentioned current source and the sensor element to compare voltage on the sensor to a threshold voltage (12f, col 7 line 18-20). O Dowd further teaches a reset switch (42) and 76, Fig 9) coupled to the comparator (20) Fig 9)

Regarding claim 17, the teachings of O Dowd are reviewed above

O Dowd does not teach the capacitive sensor residing in a processing device where the sensor can detect the presence of a conductive object which may be a finger or stylus

GuangHai teaches capacitive sensor residing in a processing device (fig 1B) where the sensor can detect the presence of a conductive object (303, Fig 5B) which may be a finger (Fig 3A and 3B)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have improved O Dowd's capacitive sensor by designing it into a processing device with the ability to detect the presence of a conductive finger, as taught by GuangHai, for the benefit of also having a range of sensitivity as suggested by GuangHai (par 116)

Conclusion

8 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hitt and Reddi teach a differential capacitance measuring circuit

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS F. VALONE whose telephone number is (571)272-8896. The examiner can normally be reached on Tu-W-Th 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number 11/502 267
Art Unit 2831

Page 9

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas F Valone/
Patent Examiner Art Unit 2831

Thomas Valone PhD, PE
Patent Examiner
Art Unit 2831
571-272-8896

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 255	11/14/2006	Viktor Kremin	CD06138	3901

60909 7590 03/29/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
EDWARDS JR TIMOTHY

ART UNIT	PAPER NUMBER
2612	

MAIL DATE	DELIVERY MODE
03/29/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 11/600 255	Applicant(s) KREMIN VIKTOR	
	Examiner Timothy Edwards Jr	Art Unit 2612	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a) in no event however may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
If NO period for reply is specified above the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133)
Any reply received by the Office later than three months after the mailing date of this communication even if timely filed may reduce any earned patent term adjustment See 37 CFR 1.704(b)

Status

1) Responsive to communication(s) filed on 14 November 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 1935 C D 11 453 O G 213

Disposition of Claims

4) Claim(s) 1 64 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1 8, 10 13, 15 34 and 51 64 is/are rejected

7) Claim(s) 9, 14 and 35 50 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance See 37 CFR 1.85(a)
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to See 37 CFR 1.121(d)

11) The oath or declaration is objected to by the Examiner Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO 413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U S C 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent published under section 122(b) by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

2 Claims 1-8 10-13 15-34 51-56 59-62 are rejected under 35 U S C 102(e) as being anticipated by Hargreaves et al US 7 301 350

Considering claim 1, a) measuring a capacitance on a sensor element of a sensing device using a sigma-delta modulator (see col 3, lines 31-33), b) the sensor element is a switching capacitor in a feedback loop of the sigma-delta modulator (see col 4 lines 24-36), c) converting the capacitance measured on the sensor element to a digital code (see col 3, lines 34-38)

Considering claim 2, Hargreaves discloses the limitation of this claim (see fig 1A item 22)

Considering claim 3 Hargreaves disclose the limitation of this claim (see col 4 line 58 to col 5, line 4)

Considering claim 4, Hargreaves discloses the limitation of this claim (see col 5, lines 25-28)

Considering claim 5 Hargreaves discloses the limitation of this claim (see col 5, lines 44-49 and col 6 lines 24-31)

Considering claim 6 Hargreaves discloses the limitation of this claim (see col 5 lines 20-24)

Considering claims 7 8 Hargreaves discloses the limitations of these claims (see col 3, lines 56-64)

Considering claim 10 Hargreaves discloses the limitation of this claim (see col 9 lines 18-34)

Considering claim 11 Hargreaves discloses the limitation of this claim (see col 10 lines 5-10)

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Page 4

Considering claim 12 Hargreaves discloses the limitation of this claim (see col 4, line 64 to col 5 line15 and col 7, lines 50-66)

Considering claim 13, Hargreaves discloses the limitation of this claim (see col 5, lines 20-24)

Considering claim 15 the limitations of this claim is interpreted and rejected as stated in claim 1

Considering claim 16, the limitations of this claim is interpreted and rejected as stated in claim 2

Considering claim 17 the limitations of this claim is interpreted and rejected as stated in claim 3

Considering claim 18 the limitations of this claim is interpreted and rejected as stated in claim 4

Considering claims 19, 20 60 the limitations of these claims are interpreted and rejected as stated in claim 5

Considering claims 21 22 61 the limitations of these claims are interpreted and rejected as stated in claim 7

Considering claim 23, the limitations of this claim is interpreted and rejected as stated in claim 8

Considering claim 24 Hargreaves discloses the limitation of this claim (see col 5 lines 4-24)

Considering claim 25 the limitations of this claim is interpreted and rejected as stated in claim 10

Considering claim 26 Hargreaves discloses the limitation of this claim (see col 8, lines 4-23)

Considering claim 27 Hargreaves discloses the limitation of this claim (see fig 1A)

Considering claim 28, Hargreaves discloses the limitation of this claim (see col 7 line 51 to col 8 line 3 and fig 1A items 104 122)

Considering claim 29, Hargreaves discloses the limitation of this claim (see col 5, line 57 to col 6, line 17)

Considering claim 30, Hargreaves discloses the limitation of this claim (see col 8, lines 4-16)

Considering claim 31 Hargreaves discloses the limitation of this claim (see col 6, lines 37-50)

Considering claim 32 Hargreaves discloses the limitation of this claim (see col 8 lines 44-65)

Considering claim 33, the limitations of this claim is interpreted and rejected as stated in claim 11

Considering claim 34, Hargreaves discloses the limitation of this claim (see col 10, lines 33-57)

Considering claim 51 Hargreaves discloses the limitation of this claim (see col 3 lines 47 55)

Considering claim 52 Hargreaves discloses the limitation of this claim (see col 11, lines 32-35)

Considering claims 53 -56 Hargreaves discloses the limitations of these claims (see col 15 lines 6-19)

Considering claim 59, Hargreaves discloses the limitations of this claim (see col 3, lines 31-55 and fig 1A)

Considering claim 62 Hargreaves discloses the limitation of this claim (see col 3 lines 50-55)

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4 Claims 57 58 63, 64 are rejected under 35 U S C 103(a) as being unpatentable over Hargreaves et al 350

Considering claims 57 58, 63 64 Hargreaves does not specifically recite the limitations of these claims. Examiner takes Official Notice a scanning matrix used for scanning sensor element is well known in the art. Also, methods are known to reduce the number of connecting lines in a scanning application.

Allowable Subject Matter

5 Claims 9 14, 35-36, 37-39 40 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Conclusion

6 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure See PTO-892

If the claimed invention is amended Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure/description relied upon to assist the Examiner in proper interpretation of the amended language and also to verify and ascertain the metes and bounds of the claimed invention

Any inquiry concerning this communication should be directed to Examiner Timothy Edwards Jr at telephone number (571) 272-3067 The examiner can normally be reached on Monday-Thursday, 8 00 a m -6 00 p m The examiner cannot be reached on Fridays

If attempt to reach the Examiner by telephone are unsuccessful the Examiner's Supervisor Brian Zimmerman can be reached at (571) 272-3059

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-4700 Mon-Fri 8 30 a m -5 00 p m

Application/Control Number 11/600,255
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Page 9

Any response to this action should be fax to

(571) 273-8300 (for formal communications intended for entry)

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/Timothy Edwards, Jr./
Primary Examiner, Art Unit 2612
March 29, 2010

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 896	11/15/2006	Ryan D. Seguire	CD06101	5229

60909 7590 01/26/2011
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER

DIHARIA PRABODHM

ART UNIT PAPER NUMBER

2629

MAIL DATE DELIVERY MODE

01/26/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply, if any, is set in the attached communication

Office Action Summary	Application No 11/600 896	Applicant(s) SEGUINE RYAN D	
	Examiner PRABODH M DHARIA	Art Unit 2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 December 2010

2a) This action is **FINAL** 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 4, 17, 19 and 20 is/are pending in the application

4a) Of the above claim(s) 2, 3 and 18 is/are withdrawn from consideration

5) Claim(s) 1, 10, 17, 19 and 20 is/are allowed

6) Claim(s) 11, 14 is/are rejected

7) Claim(s) 15, 16 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 15 November 2006 is/are: a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO 413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

1 **Status** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 12/30/2010 under amendments and request for reconsideration which have been placed of record in the file. Claims 1, 4, 17, 19 and 20 are pending in this action.

Response to Amendment

2 The amendment filed 12/30/2010 does not introduce any new matter into the disclosure. The added material is supported by the original disclosure. Applicant has cancelled dependent claims 2, 3 and 18 and added limitations of the dependent claims into the independent claims 1 and 17 to overcome prior art rejection. Applicant remark and arguments filed regarding "stepping a sense voltage of a relaxation oscillator to a first reference voltage" not being in drawing are persuasive. Therefore the objection to drawing is withdrawn.

Claim Rejections 35 USC § 103

3 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4 Claims 11, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greimas Evon C et al (US 5386219 A) in view of Jansson Hakan K (US 20080036473 A1).

Regarding Claim 11 Grearnias Evon C et al (US 5386219 A) discloses an apparatus comprising a touch sensitive capacitor (please figure 2A 2B Col 6 Lines 31 57) a relaxation oscillator selectively coupled to the touch sensitive capacitor (please figure 2A 2B Col 6 Lines 31-57) wherein the relaxation oscillator is configured to step charge the touch sensitive capacitor to a first reference voltage (Col 8 Lines 51 55 please see figures 2A and 2B) to ramp charge the touch sensitive capacitor to a second reference voltage above the first reference voltage (Col 8 Lines 51 56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave) and to step discharge the touch sensitive capacitor to a voltage below the first reference voltage (Col 8 Lines 34 50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined and 51 56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9 Line 48 to Col 10 Line 3 Col 10 Lines 42 67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge which is lower than first reference voltage charged by relaxation oscillator)

However Grearnias Evon C et al (US 5386219 A) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

However the applicant field of endeavor prior art of Jansson Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1 2 3C 4A D 6A 6B 7A 7B page 6 paragraphs 67 69 suggests

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stepping a sense voltage of a relaxation oscillator to a first reference voltage Please also see page 1 paragraph 7 9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A 6B 7A 7B page 6 paragraphs 67 71 stepping the sense voltage to a voltage less than the first reference voltage Please also see page 1 paragraph 7 9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor number of dv is required to reach first threshold or reference voltage suggests dv is smaller than first reference voltage)

The reason to combine Greanias Evon C et al (US 5386219 A) contains basic method of sensing touch or proximity sensor sensing hand touching or being in the proximity of the capacitive touch sensing device Jansson, Hakan K (US 20080036473 A1) discloses same or similar method with the circuitry achieving proximity sensing or touch sensing a well known in the art and would have been recognized by one ordinary skill in the art as applicable to the base process of Greanias Evon C et al (US 5386219 A) and the result would have been predictable and resulted in an improved process Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made

Thus it is obvious to one in the ordinary skill in the art at the time of invention) was made to incorporate teaching of Jansson Hakan K (US 20080036473 A1) in teaching of Greanias Evon C et al (US 5386219 A) to be able to have a capacitive touch sensing device permits detection of a presence of a finger faster than the conventional relaxation oscillator by increasing detection of the presence of a finger faster by faster sampling rates with dual slope relaxation oscillator The above recited method also reduces or lowers the power consumption

Regarding Claim 12 Greanias Evon C et al (US 5386219 A) discloses the relaxation oscillator comprises a switched voltage source equal to the first reference voltage to step charge the touch sensitive capacitor to the first reference voltage at a first time a switched current source to ramp charge the touch sensitive capacitor to the second reference voltage at a second time and a ground switch to step discharge the touch sensitive capacitor to the voltage below the first reference voltage at a third time (Col 8 Lines 34 50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined and 51 56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9 Line 48 to Col 10 Line 3 Col 10 Lines 42 67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 13 Greanias Evon C et al (US 5386219 A) discloses a time period from the first time to the third time comprises a period of oscillation of the relaxation oscillator the apparatus further comprising a timing circuit coupled with the relaxation oscillator to determine at least one of the period of oscillation of the relaxation oscillator and a frequency of oscillation of the relaxation oscillator (Col 8 Lines 34 to Col 9 Line 32)

Regarding Claim 14 Greanias Evon C et al (US 5386219 A) discloses the switched voltage source the first reference voltage and the second reference voltages comprise band gap voltage sources (Col 8 Lines 34 to Col 9 Line 32 suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Allowable Subject Matter

- 5 Claims 1 10 17 19 and 20 are allowed
- 6 Claims 15 and 16 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims
- 7 The following is an examiner's statement of reasons for allowance

The prior arts of Greanias' Evon C et al (US 5386219 A) and XiaoPing Jiang (US 20070268265 A1) with all of the other prior art cited on 892's 1449's, searched in NPL, and searched in PGPUB fails to recite or disclose all the other limitations of independent claims in combination with uniquely distinct features represented by underlined bold claim limitations recited below

a first comparator to compare a voltage of the touch sensitive capacitor to the first reference voltage, wherein the first comparator is configured to disconnect the ground switch from the touch sensitive capacitor and connect the switched voltage source to the touch-sensitive capacitor when the voltage of the touch sensitive capacitor is below the first reference voltage, and connect the switched current source to the touch sensitive capacitor, after a first delay, when the voltage of the touch sensitive capacitor is at or above the first reference voltage

Or

a second comparator to compare the voltage on the touch sensitive capacitor to the second reference voltage, wherein the second comparator is configured to disconnect the switched current source from the touch sensitive capacitor when the voltage of the touch sensitive capacitor is at or above the second reference voltage, and connect the ground switch from the touch sensitive capacitor, after a second delay, when the voltage on the touch sensitive capacitor is at or above the second reference voltage

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and to avoid processing delays should preferably accompany the issue

fee Such submissions should be clearly labeled ' Comments on Statement of Reasons for Allowance ”

Response to Arguments

8 Applicant's arguments see remark filed 12 30 2010 with respect to the rejection(s) of claim(s) 11-14 under 35 U.S.C. 103(a) as being unpatentable over Greanias Evon C et al (US 5386219 A) in view of Jansson Hakan K (US 20080036473 A1) have been fully considered and are not persuasive

Applicant argues Greanias Evon C et al (US 5386219 A) in view of Jansson Hakan K (US 20080036473 A1) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

Examiner disagrees as First of all Claim 11 limitations fail to recite stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

Examiner disagrees as the applicant's disclosure on page 11 13 suggests the sensing capacitor is charged with current at the relaxation oscillator frequency Suggests the stepping sensing voltage is charged across the sensing capacitor by current source directly coupled to the sensing capacitor The prior art of Jansson Hakan K (US 20080036473 A1) suggests and discloses similar disclosure suggesting stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1 2 3C 4A D 6A 6B 7A 7B page 6 paragraphs 67 69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage Please

also see page 1 paragraph 7 9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A 6B 7A 7B page 6 paragraphs 67 71 stepping the sense voltage to a voltage less than the first reference voltage Please also see page 1 paragraph 7 9 suggests the charge current supplied to relaxation oscillator capacitor per current periodically per relaxation oscillator frequency suggests the voltage charge across sensing capacitor is stepping voltage or current per $Cdv=It$ or $C/I =t/dv$ where dv is step sensing voltage charged across capacitor per charge current supplied to capacitor number of dv is required to reach first threshold or reference voltage suggests dv is smaller than first reference voltage Please see figure 6A suggests the V_{th1} is lower than V_{th2} discharge does occur from V_{th2} to V_{th1} please also see figures 7A and 7B they do suggest similar criteria and therefore prior art of does disclose applicant's claimed invention and combination does obviate

The prior art of Greanias Evon C et al (US 5386219 A) provides base suggesting capacitance is measured with a variable frequency oscillator which connects individual ITO conductors to the period controlling capacitor of the oscillator When no finger touches the overlay the oscillator runs at a frequency determined by the ambient capacitance between the conductors in the overlay cables and in the electronic circuitry The frequency of the variable frequency oscillator circuit is inversely proportional to the ambient capacitance To deal with electrical noise an adequate number of cycles of the oscillator circuit must be run before the

measured capacitance value is reliable” in which the claimed invention can be seen as an “improvement” in that “stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage” contains a known technique of Jansson Hakan K (US 20080036473 A1) that is applicable to base process Jansson Hakan K (US 20080036473 A1) known technique of stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage would have been recognized by one ordinary skill in the art as applicable to the base process and the results would have been predictable and resulted in accurately measure the touch sensitive capacitor and accurately determining the touch position on a touch surface Which resulted in an improved process Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made

9 Applicant is asked to review all the prior arts recited on attached PTO 892 as they are pertinent to the applicant claimed invention

Conclusion

10 The prior art made of record and not relied upon is considered pertinent to applicant s disclosure

Rhee Woogeun et al (US 6377129 B1) Programmable relaxation oscillator

Art Unit 2629

11 Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRABODH M DHARIA whose telephone number is (571)272

7668 The examiner can normally be reached on M F 8 30AM to 5PM

12 The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300

13 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system see <http://pair.direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866 217 9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system call 800 786 9199 (IN USA OR CANADA) or 571 272 1000

Any response to this action should be mailed to

Commissioner of Patents and Trademarks

Washington D C 20231

/Prabodh M Dharia/

Primary Examiner

Art Unit 2629

January 23 2011



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 896	11/15/2006	Ryan D Seguire	CD06101	5229
60909 7590 05/14/2010 CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			EXAMINER DIHARIA PRABODH M	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 05/14/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/600 896	SEGUINE RYAN D	
	Examiner	Art Unit	
	PRABODH M DHARIA	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 March 2010

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1, 20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1, 14 and 17, 20 is/are rejected

7) Claim(s) 15, 16 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 15 November 2006 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

1 **Status** Please all the replies and correspondence should be addressed to examiner's new art unit 2629 Receipt is acknowledged of papers submitted on 03-16-2010 under new application, which have been placed of record in the file Claims 1-20 are pending in this action

Response to Amendment

2 The amendment filed 03-16-2010 does not introduce any new matter into the disclosure The added material is supported by the original disclosure Applicant has amended drawings per objection, therefore objection to drawing is withdrawn

Claim Rejections - 35 USC § 103

3 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains Patentability shall not be negatved by the manner in which the invention was made

4 Claims 1-14 and 17-20 are rejected under 35 U S C 103(a) as being unpatentable over Grearnias, Evon C et al (US 5386219 A) in view of Jansson, Hakan K (US 20080036473 A1)

Regarding Claim 1, Grearnias, Evon C et al (US 5386219 A) discloses a method, comprising stepping a sense voltage of a relaxation oscillator to a first reference voltage (Col 8, Lines 51-55, please see figures 2A and 2B), ramping the sense voltage of the relaxation oscillator from the first reference voltage to a second reference voltage greater than the first reference voltage (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the

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peak voltage of sawtooth wave), and stepping the sense voltage to a voltage less than the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value)

However, Greanias, Evon C et al (US 5386219 A) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

However, the applicant field of endeavor prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C 4A D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage)

The reason to combine Greanias, Evon C et al (US 5386219 A) contains basic method of sensing touch or proximity sensor sensing hand touching or being in the proximity of the capacitive touch sensing device Jansson, Hakan K (US 20080036473 A1) discloses same or similar method with the circuitry achieving proximity sensing or touch sensing, a well known in the art, and would have been recognized by one ordinary skill in the art as applicable to the base process of Greanias, Evon C et al (US 5386219 A) and the result would have been predictable

and resulted in an improved process. Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Thus it is obvious to one of ordinary skill in the art at the time of invention was made to incorporate teaching of Jansson, Hakan K (US 20080036473 A1) in teaching of Greanias, Evon C et al (US 5386219 A) to be able to have a capacitive touch sensing device, permits detection of a presence of a finger faster than the conventional relaxation oscillator, by increasing detection of the presence of a finger faster by faster sampling rates with dual slope relaxation oscillator. The above recited method also reduces or lowers the power consumption.

Regarding Claim 2, Greanias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-charging a capacitance to a voltage with the first reference voltage at a first time (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through first reference voltage value during Idle cycle).

Regarding Claim 3, Greanias, Evon C et al (US 5386219 A) discloses ramping the sense voltage comprises charging the capacitance with a current source until the voltage increases to the second reference voltage at a second time (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave at a second time, Col

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8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined suggest first time)

Regarding Claim 4, Greanias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-discharging the capacitance to the voltage less than the first reference voltage at a third time (Col 8, Lines 34-60), wherein a time period between the first time and the third time comprises a measurement of the capacitance and wherein a change in the time period between the first time and the third time comprises a change in the capacitance (Col 8, Line 34-68, suggests the first reference voltage represents the ambient capacitance with no addition of finger touch capacitance, total capacitance values are changed, Please also see Col 9, Line 59 to Col 10, Line 51)

Regarding Claim 5, Greanias, Evon C et al (US 5386219 A) discloses step-charging the capacitance comprises connecting the capacitance to the first reference voltage (Col 8, Lines 34-60)

Regarding Claim 6, Greanias, Evon C et al (US 5386219 A) discloses charging the capacitance from the current source comprises disconnecting the capacitance from the first reference voltage and connecting the capacitance to the current source after the capacitance is disconnected from the first reference voltage (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 7, Grearnias, Evon C et al (US 5386219 A) discloses step-discharging the capacitance comprises disconnecting the capacitance from the current source and connecting the capacitance to the voltage below the first reference voltage after the capacitance is disconnected from the current source (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 8, Grearnias, Evon C et al (US 5386219 A) discloses the first reference voltage comprises a band-gap voltage and the second reference voltage comprises two band-gap voltages in series (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 9, Grearnias, Evon C et al (US 5386219 A) discloses measuring the time period between the first time and the third time (Col 6 Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 10, Grearnias, Evon C et al (US 5386219 A) discloses measuring a reciprocal of the time period between the first time and the third time (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 since first and third V_{ref} are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Regarding Claim 11, Greanias, Evon C et al (US 5386219 A) discloses an apparatus, comprising a touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), a relaxation oscillator, selectively coupled to the touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), wherein the relaxation oscillator is configured to step-charge the touch sensitive capacitor to a first reference voltage (Col 8, Lines 51-55, please see figures 2A and 2B), to ramp-charge the touch-sensitive capacitor to a second reference voltage above the first reference voltage (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave), and to step- discharge the touch-sensitive capacitor to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

However, Greanias, Evon C et al (US 5386219 A) fails to disclose stepping a sense voltage of a relaxation oscillator to a first reference voltage and stepping the sense voltage to a voltage less than the first reference voltage

However, the applicant field of endeavor the prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests

stepping a sense voltage of a relaxation oscillator to a first reference voltage) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B, 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage)

The reason to combine Greanias, Evon C et al (US 5386219 A) contains basic method of sensing touch or proximity sensor sensing hand touching or being in the proximity of the capacitive touch sensing device Jansson, Hakan K (US 20080036473 A1) discloses same or similar method with the circuitry achieving proximity sensing or touch sensing, a well known in the art, and would have been recognized by one ordinary skill in the art as applicable to the base process of Greanias, Evon C et al (US 5386219 A) and the result would have been predictable and resulted in an improved process. Therefore the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Jansson, Hakan K (US 20080036473 A1) in teaching of Greanias, Evon C et al (US 5386219 A) to be able to have a capacitive touch sensing device, permits detection of a presence of a finger faster than the conventional relaxation oscillator, by increasing detection of the presence of a finger faster by faster sampling rates with dual slope relaxation oscillator. The above recited method also reduces or lowers the power consumption.

Regarding Claim 12, Greanias, Evon C et al (US 5386219 A) discloses the relaxation oscillator comprises a switched voltage source equal to the first reference voltage to step charge the touch-sensitive capacitor to the first reference voltage at a first time, a switched current

source to ramp-charge the touch sensitive capacitor to the second reference voltage at a second time, and a ground switch to step-discharge the touch sensitive capacitor to the voltage below the first reference voltage at a third time (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 13, Greanias, Evon C et al (US 5386219 A) discloses a time period from the first time to the third time comprises a period of oscillation of the relaxation oscillator, the apparatus further comprising a timing circuit coupled with the relaxation oscillator to determine at least one of the period of oscillation of the relaxation oscillator and a frequency of oscillation of the relaxation oscillator (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 14, Greanias, Evon C et al (US 5386219 A) discloses the switched voltage source, the first reference voltage and the second reference voltages comprise band-gap voltage sources (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 17, Greanias, Evon C et al (US 5386219 A) discloses an apparatus, comprising means for decreasing a sensing time for a capacitance sensor while moving a measurable part of a capacitance charge ramp of the capacitance sensor away from a ground potential (Col 8, Lines 34 to Col 9, Line 47), and means for tuning the measurable part of the capacitance charge ramp (Col 8, Lines 34 to Col 9, Line 32)

Further Regarding Claim 17, the prior art of Jansson, Hakan K (US 20080036473 A1) discloses stepping a sense voltage of a relaxation oscillator to a first reference voltage (please see figures 1, 2, 3C, 4A-D 6A, 6B, 7A, 7B, page 6, paragraphs 67-69 suggests stepping a sense voltage of a relaxation oscillator to a first reference voltage) and stepping the sense voltage to a voltage less than the first reference voltage (please see figures 6A, 6B 7A, 7B, page 6, paragraphs 67-71 stepping the sense voltage to a voltage less than the first reference voltage) and means for decreasing a sensing time for a capacitance sensor while moving a measurable part of a capacitance charge ramp of the capacitance sensor away from a ground potential (please see figure 3A and 3B, page 6, paragraphs 66-70)

Regarding Claim 18, Greanias, Evon C et al (US 5386219 A) discloses the means for decreasing the sensing time comprises means for stepping a sense voltage of a relaxation oscillator to a first reference voltage above the ground potential, means for ramping the sense voltage between the first reference voltage and a second reference voltage, and means for stepping the sense voltage to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage

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is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 19, Greanias, Evon C et al (US 5386219 A) discloses the means for timing comprises means for measuring a time period required for the sense voltage to increase from the first reference voltage to the second reference voltage (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 20, Greanias, Evon C et al (US 5386219 A) discloses means for measuring a reciprocal of the time period required for the sense voltage to increase from the first (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 since first and third V_{ref} are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Allowable Subject Matter

5 Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

6 The following is an examiner's statement of reasons for allowance

The prior arts of Greanias, Evon C et al (US 5386219 A) and XiaoPing, Jiang (US 20070268265 A1) with all of the other prior art cited on 892's 1449's, searched in NPL and searched in PG PUB, fails to recite or disclose all the other limitations of independent claims in combination with uniquely distinct features represented by underlined bold claim limitations recited below,

a first comparator to compare a voltage of the touch-sensitive capacitor to the first reference voltage, wherein the first comparator is configured to disconnect the ground switch from the touch-sensitive capacitor and connect the switched voltage source to the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is below the first reference voltage, and connect the switched current source to the touch-sensitive capacitor, after a first delay, when the voltage of the touch-sensitive capacitor is at or above the first reference voltage

Or

a second comparator to compare the voltage on the touch-sensitive capacitor to the second reference voltage, wherein the second comparator is configured to disconnect the switched current source from the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is at or above the second reference voltage, and connect the ground switch from the touch-sensitive capacitor, after a second delay, when the voltage on the touch-sensitive capacitor is at or above the second reference voltage

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7 Applicant's arguments, see remark, filed 03-18-2010, with respect to the rejection(s) of claim(s) 1-14 and 17-20 under 35 U.S.C. 102(b) as being anticipated by Greanias, Evon C et al (US 5386219 A) have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection is made in view of Jansson, Hakan K (US 20080036473 A1)

8 Applicant is asked to review all the prior arts recited on attached PTO as they are pertinent to the applicant claimed invention

Conclusion

9 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

Denen, Dennis Joseph et al (US 6838887 B2) Proximity detection circuit and method of detecting small capacitance changes

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10 Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRABODH M DHARIA whose telephone number is (571)272-7668. The examiner can normally be reached on M-F 8-30AM to 5PM.

11 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to

Commissioner of Patents and Trademarks

Washington, D C 20231

/Prabodh M Dharia/

Primary Examiner

Art Unit 2629

May 12, 2010



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 896	11/15/2006	Ryan D Seguire	CD06101	5229

60909 7590 12/16/2009
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER	
DHARIA PRABODH M	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
12/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No	Applicant(s)	
	11/600 896	SEGUINE RYAN D	
	Examiner	Art Unit	
	PRABODH M DHARIA	2629	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 15 November 2006

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1 20 is/are pending in the application

4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) _____ is/are allowed

6) Claim(s) 1 14 and 17 20 is/are rejected

7) Claim(s) 15 and 16 is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 15 November 2006 is/are a) accepted or b) objected to by the Examiner

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	Paper No(s)/Mail Date _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/06)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other _____

Drawings

1 Figures 1A, 1B, 2A, 2B, 3A, 3B, and 3C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2 **Status** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 04/27/2005 under new application, which have been placed of record in the file. Claims 1-12 are pending in this action.

Claim Rejections - 35 USC § 102

3 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States.

4 Claims 1-14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Grcanias, Evon C et al (US 5386219 A).

Regarding Claim 1, Grearnias, Evon C et al (US 5386219 A) discloses a method, comprising stepping a sense voltage of a relaxation oscillator to a first reference voltage (Col 8, Lines 51-55, please see figures 2A and 2B), ramping the sense voltage of the relaxation oscillator from the first reference voltage to a second reference voltage greater than the first reference voltage (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave), and stepping the sense voltage to a voltage less than the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value)

Regarding Claim 2, Grearnias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-charging a capacitance to a voltage with the first reference voltage at a first time (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through first reference voltage value during Idle cycle)

Regarding Claim 3, Grearnias, Evon C et al (US 5386219 A) discloses ramping the sense voltage comprises charging the capacitance with a current source until the voltage increases to

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the second reference voltage at a second time (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave at a second time, Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined suggest first time)

Regarding Claim 4, Greanias, Evon C et al (US 5386219 A) discloses stepping the sense voltage comprises step-discharging the capacitance to the voltage less than the first reference voltage at a third time (Col 8, Lines 34-60), wherein a time period between the first time and the third time comprises a measurement of the capacitance and wherein a change in the time period between the first time and the third time comprises a change in the capacitance (Col 8, Line 34-68, suggests the first reference voltage represents the ambient capacitance with no addition of finger touch capacitance, total capacitance values are changed, Please also see Col 9, Line 59 to Col 10, Line 51)

Regarding Claim 5, Greanias, Evon C et al (US 5386219 A) discloses step-charging the capacitance comprises connecting the capacitance to the first reference voltage (Col 8, Lines 34-60)

Regarding Claim 6, Greanias, Evon C et al (US 5386219 A) discloses charging the capacitance from the current source comprises disconnecting the capacitance from the first reference voltage and connecting the capacitance to the current source after the capacitance is

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disconnected from the first reference voltage (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 7, Greanias, Evon C et al (US 5386219 A) discloses step-discharging the capacitance comprises disconnecting the capacitance from the current source and connecting the capacitance to the voltage below the first reference voltage after the capacitance is disconnected from the current source (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 8, Greanias, Evon C et al (US 5386219 A) discloses the first reference voltage comprises a band-gap voltage and the second reference voltage comprises two band-gap voltages in series (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 9, Greanias, Evon C et al (US 5386219 A) discloses measuring the time period between the first time and the third time (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B)

Regarding Claim 10, Greanias, Evon C et al (US 5386219 A) discloses measuring a reciprocal of the time period between the first time and the third time (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3,

Col 10, Lines 42-67 since first and third V_{ref} are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Regarding Claim 11, Greanias, Evon C et al (US 5386219 A) discloses an apparatus, comprising a touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), a relaxation oscillator, selectively coupled to the touch-sensitive capacitor (please figure 2A, 2B, Col 6, Lines 31-57), wherein the relaxation oscillator is configured to step-charge the touch sensitive capacitor to a first reference voltage (Col 8, Lines 51-55, please see figures 2A and 2B), to ramp-charge the touch-sensitive capacitor to a second reference voltage above the first reference voltage (Col 8, Lines 51-56 suggests the capacitor is charged from first reference voltage to the peak voltage of sawtooth wave), and to step- discharge the touch-sensitive capacitor to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 12, Greanias, Evon C et al (US 5386219 A) discloses the relaxation oscillator comprises a switched voltage source equal to the first reference voltage to step charge

the touch-sensitive capacitor to the first reference voltage at a first time, a switched current source to ramp-charge the touch sensitive capacitor to the second reference voltage at a second time, and a ground switch to step-discharge the touch sensitive capacitor to the voltage below the first reference voltage at a third time (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51 56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 13, Greanias, Evon C et al (US 5386219 A) discloses a time period from the first time to the third time comprises a period of oscillation of the relaxation oscillator, the apparatus further comprising a timing circuit coupled with the relaxation oscillator to determine at least one of the period of oscillation of the relaxation oscillator and a frequency of oscillation of the relaxation oscillator (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 14, Greanias, Evon C et al (US 5386219 A) discloses the switched voltage source, the first reference voltage and the second reference voltages comprise band-gap voltage sources (Col 8, Lines 34 to Col 9, Line 32, suggests the finger touch contact tend to

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have random variations which varies number of oscillator cycle required and the charging and discharging will have band gap voltages)

Regarding Claim 17, Greanias, Evon C et al (US 5386219 A) discloses an apparatus, comprising means for decreasing a sensing time for a capacitance sensor while moving a measurable part of a capacitance charge ramp of the capacitance sensor away from a ground potential (Col 8, Lines 34 to Col 9, Line 47), and means for timing the measurable part of the capacitance charge ramp (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 18, Greanias, Evon C et al (US 5386219 A) discloses the means for decreasing the sensing time comprises means for stepping a sense voltage of a relaxation oscillator to a first reference voltage above the ground potential, means for ramping the sense voltage between the first reference voltage and a second reference voltage, and means for stepping the sense voltage to a voltage below the first reference voltage (Col 8, Lines 34-50 suggests during the idle status the number of cycle required to maintain at first reference voltage is predetermined, and 51-56 suggests each cycle provides the charging current to charge touch sensor capacitor to a ramp voltage curve, suggests the charge current provided during each relaxation oscillator cycle steps through voltage on the ramp is less than the first reference voltage value and please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 also suggests the finger touching the touch sensitive capacitance to ground potential on the discharge, which is lower than first reference voltage charged by relaxation oscillator)

Regarding Claim 19, Grearnias, Evon C et al (US 5386219 A) discloses the means for timing comprises means for measuring a time period required for the sense voltage to increase from the first reference voltage to the second reference voltage (Col 8, Lines 34 to Col 9, Line 32)

Regarding Claim 20, Grearnias, Evon C et al (US 5386219 A) discloses means for measuring a reciprocal of the time period required for the sense voltage to increase from the first (Col 6, Lines 31-57, Col 8, Lines 34-60, please also see figures 2A, 2B, please also see Col 9, Line 48 to Col 10, Line 3, Col 10, Lines 42-67 since first and third Vref are same the number of relaxation oscillator count required to charge ambient capacitor would be same)

Allowable Subject Matter

5 Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

6 The following is an examiner's statement of reasons for allowance

The prior arts of Grearnias, Evon C et al (US 5386219 A) and XiaoPing, Jiang (US 20070268265 A1) with all of the other prior art cited on 892's 1449's, searched in NPL and searched in PGPUB, fails to recite or disclose all the other limitations of independent claims in combination with uniquely distinct features represented by underlined bold claim limitations recited below,

a first comparator to compare a voltage of the touch-sensitive capacitor to the first reference voltage, wherein the first comparator is configured to disconnect the ground switch from the touch-sensitive capacitor and connect the switched voltage source to the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is below the first reference voltage, and connect the switched current source to the touch-sensitive capacitor, after a first delay, when the voltage of the touch-sensitive capacitor is at or above the first reference voltage

Or

a second comparator to compare the voltage on the touch-sensitive capacitor to the second reference voltage, wherein the second comparator is configured to disconnect the switched current source from the touch-sensitive capacitor when the voltage of the touch-sensitive capacitor is at or above the second reference voltage, and connect the ground switch from the touch-sensitive capacitor, after a second delay, when the voltage on the touch-sensitive capacitor is at or above the second reference voltage

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

XiaoPing, Jiang (US 20070268265 A1) Two-pin buttons

8 Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRABODH M DHARJA whose telephone number is (571)272-7668. The examiner can normally be reached on M-F 8-30AM to 5PM.

9 The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

10 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to

Commissioner of Patents and Trademarks

Washington, D C 20231

/Prabodh M Dharja/

Application/Control Number 11/600,896
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Primary Examiner

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December 14, 2009

CY00002628

Office Action Summary	Application No	Applicant(s)	
	11/700 314	QIN ET AL.	
	Examiner	Art Unit	
	SAHLU OKEBATO	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 January 2007

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) 6-18 is/are allowed

6) Claim(s) 1-5 and 19-22 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 30 January 2007 is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/30/2007

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

- 1 Claims 1-22 are pending

Information Disclosure Statement

- 2 The information disclosure statement (IDS) submitted on 01/30/2007 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

- 3 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of application for patent in the United States

- 4 Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozick, US Patent 6940291.
- 5 As to claim 1, Ozick discloses a method comprising providing a sensor element of a sensing device (capacitive sensing system 100, fig. 1A) and setting a ratio of a discharge rate to a charge rate for measuring a capacitance on the sensor element (col. 9 lines 22-30 and fig. 1D).

- 6 As to claim 2, Ozick discloses setting the ratio comprises setting the charging rate for introducing a charge on the sensor element of the sensing device and setting the discharging rate for removing the charge on the sensor element (col 9 lines 22-30 and fig 1D)
- 7 As to claim 3, Ozick discloses measuring the capacitance on the sensor element to detect a presence of a conductive object on the sensing device (col 5 lines 1-8)
- 8 As to claim 4 Ozick discloses measuring the capacitance comprises introducing a charge on the sensor element at the charging rate and removing the charge on the sensor element at the discharging rate (col 2, line 62 to col 3 line 11)
- 9 As to claim 5 Ozick discloses measuring the capacitance further comprises comparing a voltage on the sensor element and a first reference voltage comparing the voltage on the sensor element and a second reference voltage (col 3, lines 21-39) switching from introducing the charge on the sensor element to removing the charge on the sensor element when the voltage on the sensor element is equal to or greater than the first reference voltage and switching from removing the charge to introducing the charge on the sensor element when the voltage on the sensor element is equal to or less than the second reference voltage (col 8 line 61 to col line 7)

Claim Rejections - 35 USC § 103

10 The following is a quotation of 35 U S C 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

11 Claims 19-22 are rejected under 35 U S C 103(a) as being unpatentable over Bron
US patent 6806693

12 As to claim 19 Ozick discloses an apparatus comprising a sensor element of a sensing device (capacitive sensing system 100 fig 1A), and means for setting a ratio of a discharge rate to a charge rate of a relaxation oscillator to measure a capacitance on the sensor element. Ozick does not disclose means for setting a ratio of a discharge rate to a charge rate of a relaxation oscillator to measure a capacitance on the sensor element. However, Bron discloses the concept of means for setting a ratio of a discharge rate to a charge rate of a relaxation oscillator to measure a capacitance on the sensor element (col 3 line 66 to col 4 line 18)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ozick with the teachings of Bron in order to reduce the power consumption of the system

13 As to claim 20, the combination of Ozick and Bron discloses means for swinging a voltage on the sensor element between two reference voltage levels (Ozick, col 2, line 62 to col 3 line 11)

14 As to claim 21 the combination of Ozick and Bron discloses means for balancing a cycle-to-cycle variation in the capacitance caused by noise (Ozick col 2 lines 53-61 and col 3, lines 61-67)

15 As to claim 22 the combination of Ozick and Bron discloses means for reducing power consumption of the sensing device (Bron abstract)

Allowable Subject Matter

16 Claims 6-18 are allowed

Reason for allowance

17 The following is a statement of reasons for the indication of allowable subject matter

Ozick discloses a capacitive sensor system which enhances the resolution capable of pattern recognition and configures virtual sensors Ozick discloses a pulse count circuit that uses three I/O pins 308, 310 312 capacitance C and Cs R_{charge} and R_{discharge} for pulse control

Bron discloses an oscillator circuit which coupled to an enable pin of voltage regulator so that total power consumption is minimized. Bron discloses the system 200 which includes oscillation circuit (XOSC), a voltage regulator (XREG), an application circuit (ZL), and an output filter capacitor (C2).

Regarding claim 6, none of the cited prior art, individually or their combination teaches an apparatus, comprising a sensor element of a sensing device, a relaxation oscillator coupled to the sensor element, having a first programmable current source and a second programmable current source, and a ratio decoder coupled to the first and second programmable current sources, wherein the ratio decoder is configured to receive a ratio of a discharge rate to a charge rate, and to set the first and second programmable current sources based on the received ratio.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Philipp, US PG PUB 20020030666 discloses a multi-electrode capacitive position sensor as part of a computer pointing device.
- Lewis, US Patent 6191723 discloses a method of fast capacitance measurement.

Application/Control Number 11/700 314
Art Unit 2629

Page 7

19 Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAHLU OKEBATO whose telephone number is (571)270-3375. The examiner can normally be reached on 7 00 AM - 5 00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SAHLU OKEBATO/
Examiner, Art Unit 2629

03/10/2010

/Richard Hjerpe/
Supervisory Patent Examiner, Art Unit 2629

CY00002635



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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
12/367 279	02/06/2009	Dennis Seguine	CD05044DIV	9537
60909	7590	10/29/2009	EXAMINER	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			ZHU JOHN X	
			ART UNIT	PAPER NUMBER
			2831	
			MAIL DATE	DELIVERY MODE
			10/29/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding

The time period for reply if any is set in the attached communication

Office Action Summary	Application No 12/367 279	Applicant(s) SEGUINE DENNIS	
	Examiner JOHN ZHU	Art Unit 2831	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS WHICHEVER IS LONGER FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____

2a) This action is FINAL 2b) This action is non final

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 10, 18, 21, 27 is/are pending in the application
4a) Of the above claim(s) _____ is/are withdrawn from consideration

5) Claim(s) 10, 14 and 16, 18 is/are allowed

6) Claim(s) 15, 21, 27 is/are rejected

7) Claim(s) _____ is/are objected to

8) Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

9) The specification is objected to by the Examiner

10) The drawing(s) filed on 06 February 2009 is/are a) accepted or b) objected to by the Examiner
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO 152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a), (d), or (f)
a) All b) Some * c) None of

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO 892)

2) Notice of Draftsperson's Patent Drawing Review (PTO 948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application

6) Other _____

DETAILED ACTION

Double Patenting

1 The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the right to exclude granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2 Claim 23-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 7,504,833.

Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious that the method as taught in the present invention would be performed by the similar circuit as disclosed in the patent.

Furthermore, same with the reasons above, claim 23 is also rejected as being unpatentable over claim 10 of U.S. Patent No. 7,504,833.

Specification

3 The disclosure is objected to because of the following informalities:

Page 9 line 5, reset switch should be 218

Page 10, line 7 comparator 212 should be 214

Please check for other typographical mistakes

Appropriate correction is required

Claim Rejections - 35 USC § 112

4 The following is a quotation of the second paragraph of 35 U S C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention

5 Claim 15 is rejected under 35 U S C 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

It is not clear where the step of applying the correction factor is in the sequence of steps Is it used to compensate a capacitance sensor? Is this a further limiting step or a new step added to the compensating method? It seems that this should be in claim 10 but is missing

6 Claims 21 and 22 are rejected under 35 U S C 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

It is not clear as which step comes first, "generating the compensation value " or "storing a compensation value "

Further, for claim 22, the last limitation states "modifying the difference for the capacitive sensor by compensation to generate a modified sense value. What is the "compensation"? And how is the "modified sense value" being used to compensate?"

Appropriate changes is required

Claim Objections

7 Claims 11 and 12 are objected to because of the following informalities: antecedent basis of "a baseline capacitance value." This limitation has been previously disclosed in claim 10. Appropriate correction is required.

8 Claim 13 is objected to because of the following informalities: antecedent basis of "a correction factor." This limitation has been previously disclosed in claim 10. Appropriate correction is required.

9 Claims 14, 15 and 17 are objected to because of the following informalities: antecedent basis of "run-time capacitance values." This limitation has been previously disclosed in claim 10. Appropriate correction is required.

10 As a general matter, when further limiting a previously disclosed step, it is more clear to say

"wherein the step of establishing a baseline capacitance value" or
"wherein the step of generating a correction factor"

11 Claim 21 is objected to because of the following informalities there is an antecedent basis of "a capacitive sensor" in the last limitation Is this the same sensor as previously disclosed? Is this for any of the plurality of sensors? Appropriate correction is required

12 Claim 22 is objected to because of the following informalities same antecedent basis problem as in claim 21 It is not clear which capacitive sensor the applicant is talking about Appropriate correction is required

Allowable Subject Matter

13 Claims 10-14 and 16-18 would be allowable if the claim objections are overcome

14 The following is a statement of reasons for the indication of allowable subject matter

Claim 10 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method for compensating for differences in capacitance between each of a plurality of capacitive sensors comprising generating a correction factor for each capacitive sensor and acquire run-time capacitance values by exposing the capacitive sensor to input events and recording a run-time capacitance value of each capacitive sensor to the baseline

capacitance value of the sensor to generate a compensated capacitance value for each capacitive sensor

Claims 11-14 and 16-18 are allowable as they depend from claim 10

Conclusion

15 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

Rajagopal et al (2006/0226922) discloses an integrated time reference circuit with capacitance switching See Fig 1

Kim (2003/0210809) discloses an improved finger/capacitive sensor system

Sato et al (2003/0091220) discloses a capacitive sensor device

Von Basse et al (6 583 632) discloses a method of determining very small capacitances

Teres et al (6,184 871) discloses a capacitance ID system See Fig 4-5

Inaba et al (7,098,675) discloses a capacitance change detection device with a compensation circuit

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920

The examiner can normally be reached on M-F 8-4 30

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300

Application/Control Number 12/367 279
Art Unit 2831

Page 7

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Zhu
Examiner
Art Unit 2831

/John Zhu/
Examiner Art Unit 2831

/Timothy J. Dole/
Primary Examiner Art Unit 2831

CY00002643

Notice of Allowability	Application No	Applicant(s)	
	11/230 719	KUTZ ET AL	
	Examiner	Art Unit	
	Vincent Q Nguyen	2858	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to Amendment AF 12/08/2007

2 The allowed claim(s) is/are 1, 4-10, 12, 17, 19 and 20

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some* c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE MONTH PERIOD IS NOT EXTENDABLE.**

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 Notice of References Cited (PTO-892)

2 Notice of Draftsperson's Patent Drawing Review (PTO 948)

3 Information Disclosure Statements (PTO/SB/08)
Paper No./Mail Date 1/25/2007

4 Examiner's Comment Regarding Requirement for Deposit of Biological Material

5 Notice of Informal Patent Application

6 Interview Summary (PTO 413)
Paper No./Mail Date _____

7 Examiner's Amendment/Comment

8 Examiner's Statement of Reasons for Allowance

9 Other _____

V. Nguyen
Vincent Q. Nguyen
Primary Examiner
Art Unit 2858



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NOTICE OF ALLOWANCE AND FEE(S) DUE

28960 7590 01/16/2008
HAVERSTOCK & OWENS LLP
162 N WOLFE ROAD
SUNNYVALE CA 94086

EXAMINER
NGUYEN VINCENT Q

ART UNIT PAPER NUMBER

2858
DATE MAILED 01/16/2008

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 11/230 719, 09/19/2005, Harold Kutz, CD05060, 4591

TITLE OF INVENTION SCAN METHOD AND TOPOLOGY FOR CAPACITIVE SENSING

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, NO, \$1440, \$0, \$0, \$1440, 04/16/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P O Box 1450
Alexandria, Virginia 22313-1450
 or **Fax** **(571)-273-2885**

INSTRUCTIONS This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate **FEE ADDRESS** for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Not Use Block 1 for any change of address)

28960 7590 01/16/2008
HAVERSTOCK & OWENS LLP
162 N WOLFE ROAD
SUNNYVALE CA 94086

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper such as an assignment or formal drawing must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/23D 719	09/19/2005	Harold Kutz	CD05060	4591

TITLE OF INVENTION SCAN METHOD AND TOPOLOGY FOR CAPACITIVE SENSING

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$0	\$0	\$1440	04/16/2008

EXAMINER	ART UNIT	CLASS SUBCLASS
NGUYEN VINCENT Q	2858	324 658000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached
 Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.

2 For printing on the patent front page list:
 (1) the names of up to 3 registered patent attorneys or agents OR alternatively
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a The following fee(s) are submitted:
 Issue Fee
 Publication Fee (No small entity discount permitted)
 Advance Order # of Copies _____

4b Payment of Fee(s) (Please first reapply any previously paid issue fee shown above):
 A check is enclosed
 Payment by credit card Form PTO 2038 is attached
 The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above):
 a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/230 719	09/19/2005	Harold Kutz	CD05060	4591
28960	7590	01/16/2008	EXAMINER	
HAVERSTOCK & OWENS LLP 162 N WOLFE ROAD SUNNYVALE CA 94086			NGUYEN VINCENT Q	
			ART UNIT	PAPER NUMBER
			2858	
DATE MAILED 01/16/2008				

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site ([http //pair uspto gov](http://pair.uspto.gov))

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272 4200

Notice of Allowability	Application No	Applicant(s)	
	11/273 708	SNYDER ET AL	
	Examiner	Art Unit	
	Levi Gannon	2817	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1 This communication is responsive to the amendment of 7/26/07
- 2 The allowed claim(s) is/are 1, 18, 20, and 21
- 3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
- a) All b) Some c) None of the
- 1 Certified copies of the priority documents have been received
- 2 Certified copies of the priority documents have been received in Application No. _____
- 3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))
- * Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE MONTH PERIOD IS NOT EXTENDABLE.**

- 4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.
- 5 CORRECTED DRAWINGS (as replacement sheets) must be submitted
- (a) including changes required by the Notice of Draftperson's Patent Drawing Review (PTO 948) attached
- 1) hereto or 2) to Paper No./Mail Date _____
- (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO 892) | 5 <input type="checkbox"/> Notice of Informal Patent Application |
| 2 <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO 948) | 6 <input type="checkbox"/> Interview Summary (PTO-413)
Paper No./Mail Date _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08)
Paper No./Mail Date _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |

Benny Lee
BENNY LEE
PRIMARY EXAMINER
ART UNIT 2817



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NOTICE OF ALLOWANCE AND FEE(S) DUE

8791 7590 08/09/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085 4040

EXAMINER
GANNON LEVI

ART UNIT PAPER NUMBER

2817
DATE MAILED 08/09/2007

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Row 1: 11/273 708, 11/14/2005, Warren S. Snyder, 16820 P385, 5052. TITLE OF INVENTION: CAPACITANCE SENSOR USING RELAXATION OSCILLATORS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Row 1: nonprovisional, NO, \$1400, \$0, \$0, \$1400, 11/09/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

- A If the status is the same pay the TOTAL FEE(S) DUE shown above
B If the status above is to be removed check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

- A Pay TOTAL FEE(S) DUE shown above or
B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account, section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail** Mail Stop ISSUE FEE
 Commissioner for Patents
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 Alexandria, Virginia 22313-1450
 or **Fax** (571) 273-2885

INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

8791 7590 08/09/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
 1279 OAKMEAD PARKWAY
 SUNNYVALE CA 94085 4040

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/273 708	11/14/2005	Warren S Snyder	16820 P385	5052

TITLE OF INVENTION CAPACITANCE SENSOR USING RELAXATION OSCILLATORS

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$0	\$0	\$1400	11/09/2007

EXAMINER	ART UNIT	CLASS SUBCLASS
GANNON, LEVI	2817	331 150000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363) <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached <input type="checkbox"/> Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.	2 For printing on the patent front page list: (1) the names of up to 3 registered patent attorneys or agents OR alternatively (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
---	--

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

4a The following fee(s) are submitted: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order # of Copies _____	4b Payment of Fee(s) (Please first reapply any previously paid issue fee shown above): <input type="checkbox"/> A check is enclosed <input type="checkbox"/> Payment by credit card Form PTO 2038 is attached <input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form)
---	--

5 Change in Entity Status (from status indicated above):
 a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/273 708	11/14/2005	Warren S Snyder	16820 P385	5052
8791	7590	08/09/2007	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085 4040			GANNON LEVI	
			ART UNIT	PAPER NUMBER
			2817	
DATE MAILED 08/09/2007				

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 64 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 64 day(s)

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site ([http //pair uspto gov](http://pair.uspto.gov))

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200

Notice of Allowability	Application No	Applicant(s)	
		11/395 417	SEGUINE DENNIS
	Examiner	Art Unit	
	JOHN ZHU\	2831	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address
All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to arguments filed 7/24/2008

2 The allowed claim(s) is/are 1, 9 and 21

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
a) All b) Some c) None of the
1 Certified copies of the priority documents have been received
2 Certified copies of the priority documents have been received in Application No. _____
3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))
Certified copies not received: _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted
(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached
1) hereto or 2) to Paper No./Mail Date _____
(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO 413) Paper No./Mail Date _____
3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No./Mail Date _____	7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

/John Zhu/
Examiner, Art Unit 2831

ALLOWANCE

1 Response to communications filed on 7/24/2008

Election/Restrictions

2 This application is in condition for allowance except for the presence of claims 10-18 and 19-20 directed to a method of capacitance comparison and a capacitive sensing device respectively. Claims 10-20 are non-elected without traverse. Accordingly, claims 10-20 have been cancelled.

Allowable Subject Matter

3 Claims 1-9 and 21 are allowed.

4 The following is an examiner's statement of reasons for allowance: claims 1 and 21 are allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a circuit comprising a plurality of input switches with corresponding capacitance source having an essentially constant value in an initial mode and subject to potential variation in a run-time mode, or a comparator circuit that compares capacitance values corresponding to each capacitance source to a reference value in the initial mode and subsequently compares in the run-time mode.

Claims 2-9 are allowable as they depend from claim 1.

Application/Control Number 11/395 417
Art Unit 2831

Page 3

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled. Comments on Statement of Reasons for Allowance

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920. The examiner can normally be reached on M-F, 8-4 30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Zhu
Examiner
Art Unit 2831

/John Zhu/

CY00002654

Application/Control Number 11/395,417
Art Unit 2831

Page 4

Examiner, Art Unit 2831

/Timothy J Dole/
Primary Examiner, Art Unit 2831



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Assistant Commissioner for Patents
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NOTICE OF ALLOWANCE AND FEE(S) DUE

75701 7590 11/06/2008
Haverstock & Owens Cypress
162 North Wolfe Road
Sunnyvale CA 94086

EXAMINER
ZHU JOHN X

ART UNIT PAPER NUMBER
2831

DATE MAILED 11/06/2008

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Row 1: 11/395 417, 03/31/2006, Dennis Seguire, CD05044, 3171

TITLE OF INVENTION AUTOMATICALLY BALANCED SENSING DEVICE AND METHOD FOR MULTIPLE CAPACITIVE SENSORS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Row 1: nonprovisional, NO, \$1510, \$0, \$0, \$1510, 02/06/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail Stop ISSUE FEE**
Commissioner for Patents
P O Box 1450
Alexandria, Virginia 22313 1450
 or **Fax (571) 273 2885**

INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required) Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Use Block 1 if any change is desired)

75701 7590 11/06/2008
Haverstock & Owens Cypress
162 North Wolfe Road
Sunnyvale CA 94086

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

_____	(Deposit amount)
_____	(Signature)
_____	(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/395 417	03/31/2006	Dennis Seguire	CD05044	3171

TITLE OF INVENTION AUTOMATICALLY BALANCED SENSING DEVICE AND METHOD FOR MULTIPLE CAPACITIVE SENSORS

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	02/06/2009

EXAMINER	ART UNIT	CLASS SUBCLASS
ZHU JOHN X	2831	324 672000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363) <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached <input type="checkbox"/> Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.	2 For printing on the patent front page list: (1) the names of up to 3 registered patent attorneys or agents OR alternatively _____ (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ _____
---	---

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order # of Copies _____	4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above): <input type="checkbox"/> A check is enclosed <input type="checkbox"/> Payment by credit card Form PTO 2038 is attached <input type="checkbox"/> The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)
--	--

5 Change in Entity Status (from status indicated above)
 a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/395 417	03/31/2006	Dennis Seguire	CD05044	3171
75701	7590	11/06/2008	EXAMINER	
Haverstock & Owens Cypress 162 North Wolfe Road Sunnyvale CA 94086			ZHU JOHN X	
			ART UNIT	PAPER NUMBER
			2831	
DATE MAILED 11/06/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 0 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 0 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888) 786 0101 or (571) 272 4200

Notice of Allowability	Application No	Applicant(s)	
		11/437 517	XIAOPING JIANG
	Examiner	Art Unit	
	BENYAM KETEMA	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to 11/03/2010

2 The allowed claim(s) is/are 1-20

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input checked="" type="checkbox"/> Interview Summary (PTO 413) Paper No./Mail Date _____
3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No./Mail Date _____	7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

1 An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ryan Seguire on January 25, 2011.

In the claims

Please amend claims 1, 4 and 18 as follows:

Claim 1

A method comprising
detecting a presence of a conductive object on a capacitance sensing device, the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input; and
recognizing activation of at least three ~~a plurality of button activations~~ performed by the detected presence of the conductive object, wherein the ~~plurality~~ number of ~~button buttons activations~~ is equal to at least the number of sensing areas plus one and

wherein a combination of the at least two sensing areas is used to recognize at least one of the plurality of activated button buttons operations

Claim 2

The method of claim 1 wherein recognizing the plurality of button activations comprises

recognizing a first activated button ~~activation~~ when the presence of the conductive object is detected on a first sensing area of the at least two sensing areas of the sensing device

recognizing a second activated button ~~activation~~ when the presence of the conductive object is detected on a second sensing area of the at least two sensing areas of the sensing device and

recognizing a third activated button ~~activation~~ when the presence of the conductive object is detected on the first and second sensing areas

Claim 3

The method of claim 1, further comprising measuring a capacitance of the conductive object on the sensing device over time, wherein measuring the capacitance further comprises measuring a capacitance of the at least two sensing areas of the sensing device and wherein recognizing the activated button buttons activation is based on the measured capacitance of the at least two sensing areas

Claim 4

The method of claim 1 further comprising scanning the at least two sensing areas of the sensing device, and wherein recognizing the a plurality of activated button buttons ~~activations~~ comprises
recognizing a first activated button ~~activation~~ when a first sensing area of the at least two sensing areas detects the presence of the conductive object during the scanning of the at least two sensing areas,
recognizing a second activated button ~~activation~~ when a second sensing area of the two sensing areas detects the presence of the conductive object during the scanning of the at least two sensing areas and
recognizing a third activated button ~~activation~~ when the first and second sensing areas detect the presence of the conductive object during the scanning of the at least two sensing areas

Claim 18

An apparatus comprising
a first sensing area configured to detect a presence of a conductive object on a sensing device
a second sensing area configured to detect the presence of the conductive object on the sensing device and
means for recognizing three or more activated button buttons ~~activation~~ performed by the conductive object using the first and second sensing areas on the sensing device

Examiner's Statement of Reasons for Allowance

2 The following is an examiner's statement of reasons for allowance. The prior art of record fails to disclose the claimed invention. **The features of independent claim 1** directed towards allowable subject matter is *detecting a presence of a conductive object on a capacitance sensing device, the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input, and recognizing activation of at least three buttons performed by the detected presence of the conductive object wherein the number of buttons is equal to at least the number of sensing areas plus one and wherein a combination of the at least two sensing areas is used to recognize at least one of the activated buttons*" **Tsujioka et al (US Pat NO 5,518,078)** discloses that the presence of user's finger (i.e. conductive object) is detected by sensing device (col 9-10), the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input (fig 5 & 6) wherein the user can perform multiple input operation using his/her finger or pen as it is clearly shown in fig 5 in order to perform an input operation. But **Tsujioka et al** fails to disclose **the number of buttons is equal to at least the number of sensing areas plus one** and wherein a **combination of the at least two sensing areas is used to recognize at least one of the activated buttons**. These features in combination with the remaining language of claim 1 are not taught by the prior art of record.

The prior art of record fails to disclose the claimed invention. **The features of independent claim 5** directed towards allowable subject matter is *a first sensor*

element, a second sensor elements and a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second sensor element, wherein the first and second portions of the third sensor element are electrically isolated Tsujioaka et al (US Pat NO 5,518,078) discloses a device having multiple sensor elements but fails to disclose a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second sensor element. These features in combination with the remaining language of claims 1-5 are not taught by the prior art of record. Therefore claims 1-9 are found to be allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled. Comments on Statement of Reasons for Allowance

Conclusion

3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENYAM KETEMA whose telephone number is (571)270 7224. The examiner can normally be reached on Monday: Friday 8 00AM-5 00PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shalwala Bipin H, can be reached on 571 272 7681. The fax phone number for the organization where this application or proceeding is assigned is 571 273

Application/Control Number 11/437 517
Art Unit 2629

Page 7

8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair.direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866 217 9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800 786 9199 (IN USA OR CANADA) or 571 272 1000.

/ B K /

Examiner Art Unit 2629

/Bipin Shalwala/

Supervisory Patent Examiner, Art Unit 2629

CY00002665



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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 02/03/2011
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KETEMA BENYAM

ART UNIT PAPER NUMBER
2629

DATE MAILED 02/03/2011

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Row 1: 11/437 517, 05/18/2006, Jiang XiaoPing, CD06039, 2623. TITLE OF INVENTION: TWO PIN BUTTONS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Row 1: nonprovisional, NO, \$1510, \$300, \$0, \$1810, 05/03/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail Stop ISSUE FEE**
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INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required) Blocks 1 through 3 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Use Block 1 for any change of address)

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SAN JOSE CA 95134 1709

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

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(S per)
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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/437 517	05/18/2006	Jiang XiaoPing	CD06039	2623

TITLE OF INVENTION TWO PIN BUTTONS

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	05/03/2011

EXAMINER	ART UNIT	CLASS SUBCLASS
KETEMA BENYAM	2629	345 173000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached
 Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached Use of a Customer Number is required

2 For printing on the patent front page list
 (1) the names of up to 3 registered patent attorneys or agents OR alternatively
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.
 (A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted
 Issue Fee
 Publication Fee (No small entity discount permitted)
 Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)
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 Payment by credit card Form PTO 2038 is attached
 The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/437 517	05/18/2006	Jiang XiaoPing	CD06039	2623

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198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KETEMA BENYAM

ART UNIT PAPER NUMBER
2629

DATE MAILED 02/03/2011

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29 2000)

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If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

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Notice of Allowability	Application No	Applicant(s)	
	11/437,517	XIAOPING JIANG	
	Examiner	Art Unit	
	BENYAM KETEMA	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

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1 This communication is responsive to 05/03/2011

2 The allowed claim(s) is/are 1-20

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

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5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

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1) hereto or 2) to Paper No./Mail Date _____

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6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

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2 <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO 413)
3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08)	Paper No./Mail Date _____
Paper No./Mail Date <u>05/03/2011</u>	7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

DETAILED ACTION

Information Disclosure Statement

- 1 Due to the excessively lengthy Information Disclosure Statement submitted by applicant, the examiner has given only a cursory review of the listed references. In accordance with MPEP 609.04(a), applicant is encouraged to provide a concise explanation of why the information is being submitted and how it is understood to be relevant. Concise explanations (especially those which point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability. Applicant is required to comply with this statement for any non-English language documents. See 37 CFR § 1.56, Duty to Disclose Information Material to Patentability.

Examiner's Statement of Reasons for Allowance

- 2 The following is an examiner's statement of reasons for allowance. The prior art of record fails to disclose the claimed invention. **The features of independent claim 1** directed towards allowable subject matter is '*detecting a presence of a conductive object on a capacitance sensing device, the sensing device comprising at least two*

sensing areas each coupled to a capacitance measurement input, and recognizing activation of at least three button performed by the detected presence of the conductive object, wherein the number of buttons is equal to at least the number of sensing areas plus one and wherein a combination of the at least two sensing areas is used to recognize at least one of the activated buttons' **Tsujioka et al (US Pat NO 5,518,078)** discloses that the presence of users finger (i.e. conductive object) is detected by sensing device (col 9-10), the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input (fig 5 & 6) wherein the user can perform multiple input operation using his/her finger or pen as it is clearly shown in fig 5 in order to perform an input operation. But **Tsujioka et al** fails to disclose **the number of buttons is equal to at least the number of sensing areas plus one** and wherein a **combination of the at least two sensing areas is used to recognize at least one of the activated buttons**. These features in combination with the remaining language of claim 1 are not taught by the prior art of record.

The prior art of record fails to disclose the claimed invention. **The features of independent claim 5** directed towards allowable subject matter is *a first sensor element, a second sensor elements and a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second sensor element wherein the first and second portions of the third sensor element are electrically isolated*. **Tsujioka et al (US Pat NO 5,518,078)** discloses a device having multiple sensor elements, but fails to disclose **a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second**

Art Unit 2629

sensor element These features in combination with the remaining language of claims 1-5 are not taught by the prior art of record. Therefore claims 1-9 are found to be allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENYAM KETEMA whose telephone number is (571)270 7224. The examiner can normally be reached on Monday-Friday 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shalwala Bipin H, can be reached on 571-272 7681. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair.direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Application/Control Number 11/437 517

Page 5

Art Unit 2629

Center (EBC) at 866 217-9197 (toll free) If you would like assistance from a USPTO
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800 786 9199 (IN USA OR CANADA) or 571 272 1000

/ B K /

Examiner Art Unit 2629

/Bipin Shalwala/

Supervisory Patent Examiner Art Unit 2629

CY00002673



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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 05/19/2011
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KETEVA BENYAM

ART UNIT PAPER NUMBER
2629

DATE MAILED 05/19/2011

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAME OF INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 11/437 517, 05/18/2006, Jiang XiaoPing, CD06039, 2623

TITLE OF INVENTION TWO PIN BUTTONS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, NO, \$1510, \$300, \$0, \$1810, 08/19/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

IF THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

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(Date)
(Signature)
(Date)

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/19/2011

EXAMINER	ART UNIT	CLASS SUBCLASS
KETEMA BENYAM	2629	345 173000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)
 Change of correspondence address (or Change of Correspondence Address Form PTO/SB/122) attached
 Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.

2 For printing on the patent front page list:
 (1) the names of up to 3 registered patent attorneys or agents OR alternatively
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____
 Please check the appropriate assignee category or categories (will not be printed on the patent):
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4a. The following fee(s) are submitted:
 Issue Fee
 Publication Fee (No small entity discount permitted)
 Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above):
 A check is enclosed
 Payment by credit card Form PTO 2038 is attached
 The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above):
 a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

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Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

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EXAMINER
KETEMA BENYAM

ART UNIT PAPER NUMBER
2629

DATE MAILED 05/19/2011

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 749 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 749 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888)-786 0101 or (571) 272 4200

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed as a routine use in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed as a routine use to a Member of Congress submitting a request involving an individual to whom the record pertains when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed as a routine use to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974 as amended pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed as a routine use to the International Bureau of the World Intellectual Property Organization pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed as a routine use to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed as a routine use to the Administrator, General Services, or his/her designee during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed as a routine use to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed subject to the limitations of 37 CFR 1.14 as a routine use to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection, or an issued patent.
9. A record from this system of records may be disclosed as a routine use to a Federal, State, or local law enforcement agency if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No	Applicant(s)	
	11/437 517	XIAOPING JIANG	
	Examiner	Art Unit	
	BENYAM KETEMA	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to 05/27

2 The allowed claim(s) is/are 1, 20

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO 413) Paper No./Mail Date _____
3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No./Mail Date <u>05/27/2011</u>	7 <input type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

DETAILED ACTION

Information Disclosure Statement

1 The information disclosure statement (IDS) submitted on May 27 2011 was filed after the mailing date of the Notice of Allowance on May 19 2011. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Examiner's Statement of Reasons for Allowance

2 The following is an examiner's statement of reasons for allowance. The prior art of record fails to disclose the claimed invention. **The features of independent claim 1** directed towards allowable subject matter is *detecting a presence of a conductive object on a capacitance sensing device the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input and recognizing activation of at least three button performed by the detected presence of the conductive object, wherein the number of buttons is equal to at least the number of sensing areas plus one and wherein a combination of the at least two sensing areas is used to recognize at least one of the activated buttons* **Tsujioka et al (US Pat NO 5,518,078)** discloses that the presence of user's finger (i.e. conductive object) is detected by sensing device (col. 9-10), the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input (fig. 5 & 6) wherein the user can

perform multiple input operation using his/her finger or pen as it is clearly shown in fig 5 in order to perform an input operation. But Tsujioka et al fails to disclose **the number of buttons is equal to at least the number of sensing areas plus one** and wherein a combination of the at least two sensing areas is used to recognize at least one of the activated buttons. These features in combination with the remaining language of claim 1 are not taught by the prior art of record.

The prior art of record fails to disclose the claimed invention. **The features of independent claim 5** directed towards allowable subject matter is *a first sensor element, a second sensor elements, and a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second sensor element, wherein the first and second portions of the third sensor element are electrically isolated*. **Tsujioka et al (US Pat NO 5,518,078)** discloses a device having multiple sensor elements but fails to disclose a third sensor element comprising a first portion coupled to the first sensor element and second portion coupled to the second sensor element. These features in combination with the remaining language of claims 1-5 are not taught by the prior art of record. Therefore claims 1-9 are found to be allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled. Comments on Statement of Reasons for Allowance.

Conclusion

3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENYAM KETEMA whose telephone number is (571)270-7224. The examiner can normally be reached on Monday Friday 8 00AM 5 00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shalwala Bipin H can be reached on 571 272 7681. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866 217-9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800 786 9199 (IN USA OR CANADA) or 571 272 1000.

/ B K /

Examiner, Art Unit 2629

/Bipin Shalwala/

Supervisory Patent Examiner Art Unit 2629

Application/Control Number 11/437,517
Art Unit 2629

Page 5

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EXAMINER
KETEMA BENYAM

ART UNIT 2629
PAPER NUMBER 2629

DATE MAILED 06/16/2011

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(Date)
(Signature)
(Postmark)

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(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

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4a. The following fee(s) are submitted: <input type="checkbox"/> Issue Fee <input type="checkbox"/> Publication Fee (No small entity discount permitted) <input type="checkbox"/> Advance Order # of Copies _____	4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above): <input type="checkbox"/> A check is enclosed <input type="checkbox"/> Payment by credit card Form PTO 2038 is attached <input type="checkbox"/> The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)
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5. Change in Entity Status (from status indicated above)
 a. Applicant claims SMALL ENTITY status See 37 CFR 1.27 b. Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/437 517	05/18/2006	Jiang XiaoPing	CD06039	2623

60909 7590 06/16/2011
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KETEMA BENYAM

ART UNIT PAPER NUMBER
2629

DATE MAILED 06/16/2011

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 749 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 749 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888)-786 0101 or (571) 272 4200

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly pursuant to the requirements of the Act please be advised that (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2) (2) furnishing of the information solicited is voluntary and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information the U.S. Patent and Trademark Office may not be able to process and/or examine your submission which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

- 1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
- 2 A record from this system of records may be disclosed as a routine use in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3 A record in this system of records may be disclosed as a routine use to a Member of Congress submitting a request involving an individual to whom the record pertains when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4 A record in this system of records may be disclosed as a routine use to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974 as amended pursuant to 5 U.S.C. 552a(m).
- 5 A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed as a routine use to the International Bureau of the World Intellectual Property Organization pursuant to the Patent Cooperation Treaty.
- 6 A record in this system of records may be disclosed as a routine use to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
- 7 A record from this system of records may be disclosed as a routine use to the Administrator General Services or his/her designee during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose and any other relevant (i.e. GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8 A record from this system of records may be disclosed as a routine use to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed subject to the limitations of 37 CFR 1.14 as a routine use to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection, or an issued patent.
- 9 A record from this system of records may be disclosed as a routine use to a Federal, State, or local law enforcement agency if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No	Applicant(s)	
	11/484 085	PENG ET AL	
	Examiner	Art Unit	
	SRILAKSHMI K KUMAR	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to 5/17/2010

2 The allowed claim(s) is/are 1, 5, 8, 20, renumbered 1, 18

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO 413) Paper No./Mail Date _____
3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No./Mail Date _____	7 <input type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

/Srilakshmi K Kumar/ Primary Examiner Art Unit 2629	
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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7390 06/10/2010
CYPRFSS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KUMAR SRILAKSHMI K

ART UNIT PAPER NUMBER

2629
DATE MAILED 06/10/2010

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 11/484 085, 07/10/2006, Tao Peng, CD06043, 9100

TITLE OF INVENTION TOUCH SENSOR WITH SHARED CAPACITIVE SENSORS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, NO, \$1510, \$300, \$0, \$1810, 09/10/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1 313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U S C 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

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I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee s responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail Stop ISSUE FEE**
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 or **Fax (571) 273 2885**

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CURRENT CORRESPONDENCE ADDRESS (Not Use Bl k if any larg f dd)

60909 7590 06/10/2010
CYPRFSS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(D post am)
(S gnt)
(D t)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/484 085	07/10/2006	Tao Peng	CD06043	9100

TITLE OF INVENTION TOUCH SENSOR WITH SHARED CAPACITIVE SENSORS

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/10/2010

EXAMINER	ART UNIT	CLASS SUBCLASS
KUMAR SRILAKSHMI K	2629	345 169000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)

- Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached
 Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached Use of a Customer Number is required

2 For printing on the patent front page list

- (1) the names of up to 3 registered patent attorneys or agents OR alternatively
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted

- Issue Fee
 Publication Fee (No small entity discount permitted)
 Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)

- A check is enclosed
 Payment by credit card Form PTO 2038 is attached
 The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above)

- a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/484 085	07/10/2006	Tao Peng	CD06043	9100
60909	7590	06/10/2010	EXAMINER KUMAR SRILAKSHMI K	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			ART UNIT PAPER NUMBER 2629 DATE MAILED 06/10/2010	

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 738 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 738 day(s)

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2/1

Notice of Allowability	Application No	Applicant(s)	
	11/489 944	SEGUINE RYAN D	
	Examiner	Art Unit	
	Timothy J Dole	2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address
 All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1 This communication is responsive to _____
- 2 The allowed claim(s) is/are 1-20
- 3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)
- a) All b) Some* c) None of the
- 1 Certified copies of the priority documents have been received
- 2 Certified copies of the priority documents have been received in Application No _____
- 3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))
- Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

- 4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.
- 5 CORRECTED DRAWINGS (as replacement sheets) must be submitted
- (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached
- 1) hereto or 2) to Paper No /Mail Date _____
- (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No /Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <p>1 <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)</p> <p>2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)</p> <p>3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08)
Paper No /Mail Date <u>See Continuation Sheet</u></p> <p>4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</p> | <p>5 <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6 <input type="checkbox"/> Interview Summary (PTO-413)
Paper No /Mail Date _____</p> <p>7 <input type="checkbox"/> Examiner's Amendment/Comment</p> <p>8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</p> <p>9 <input type="checkbox"/> Other _____</p> |
|---|---|

Continuation Sheet (PTOL 37)

Application No 11/489 944

Continuation of Attachment(s) 3 Information Disclosure Statements (PTO/SB/08) Paper No /Mail Date 7/19/06 11/27/06 2/26/07

DETAILED ACTION

1 An examiner's amendment to the record appears below. Should the changes and/or
additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR
1 312. To ensure consideration of such an amendment, it MUST be submitted no later than the
payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with
attorney of record Cory G. Claassen on March 30, 2007.

The application has been amended as follows:

Change "method" to "--machine-readable medium-" on line 1 of claim 14.

Allowable Subject Matter

1 Claims 1-20 are allowed.

2 The following is an examiner's statement of reasons for allowance: claims 1-20 are
allowable due to the inclusion of claim limitations "registering a center key actuation of the
radial slider interface, if at least the threshold number of the capacitive sensors are concurrently
actuated" in claims 1, 9 and 15. Claims 2, 8, 10, 14 and 16-20 are allowable due to their
dependence on allowable independent claims 1, 9 and 15 respectively.

Any comments considered necessary by applicant must be submitted no later than the
payment of the issue fee and, to avoid processing delays, should preferably accompany the issue
fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for
Allowance."

Application/Control Number 11/489,944
Art Unit 2858

Page 3

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Dole whose telephone number is (571) 272-2229. The examiner can normally be reached on Mon thru Fri from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217 9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJD

TJD



ANDREW H. HIRSHFELD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800



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NOTICE OF ALLOWANCE AND FEE(S) DUE

8791 7590 04/09/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES CA 90025 1030

EXAMINER
DOLE TIMOTHY J

ART UNIT PAPER NUMBER

2858
DATE MAILED 04/09/2007

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Row 1: 11/489 944, 07/19/2006, Ryan D Seguinc, 16820P476, 1797. TITLE OF INVENTION UNINTERRUPTED RADIAL CAPACITIVE SENSE INTERFACE

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Row 1: nonprovisional, NO, \$1400, \$300, \$0, \$1700, 07/09/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

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HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

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B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

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PART B FEE(S) TRANSMITTAL

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8791 7590 04/09/2007
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Certificate of Mailing or Transmission
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/489 944	07/19/2006	Ryan D Seguire	16820P476	1797

TITLE OF INVENTION UNINTERRUPTED RADIAL CAPACITIVE SENSE INTERFACE

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	07/09/2007

EXAMINER	ART UNIT	CLASS SUBCLASS
DOLE TIMOTHY J	2858	324 686000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.563)
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached
 Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2 For printing on the patent front page list:
 (1) the names of up to 3 registered patent attorneys or agents OR alternatively
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
 PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.
 (A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a The following fee(s) are submitted:
 Issue Fee
 Publication Fee (No small entity discount permitted)
 Advance Order # of Copies _____

4b Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)
 A check is enclosed
 Payment by credit card Form PTO 2038 is attached
 The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above)
 a Applicant claims SMALL ENTITY status. See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/489 944	07/19/2006	Ryan D Seguire	16820P476	1797
8791	7590	04/09/2007	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES CA 90025 1030			DOLE TIMOTHY J	
			ART UNIT	PAPER NUMBER
			2858	DATE MAILED 04/09/2007

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s)

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888) 786-0101 or (571)-272-4200

{Keep this as a
Miscellaneous}
(Didn't find this NPL)

IBM PC keyboard

From Wikipedia, the free encyclopedia
(Redirected from PC keyboard)

The **IBM PC keyboard** and its derivative computer keyboards are standardized. However, during the 20 years of the PC architecture being constantly updated, several types of keyboards have been developed.

Contents

- 1 Keyboard layouts
- 2 Standard key meanings
 - 2.1 From mechanical typewriters
 - 2.2 From Teletype keyboards
 - 2.3 Invented for the PC
- 3 Connectors
- 4 External links

Keyboard layouts

The following list gives a concise overview of the PC keyboard as it has changed over the years, the changes often being made at the launch of new PC versions. For each layout, some of the most significant updates are mentioned.

- 83 key PC/XT keyboard layout – original left hand side function key (F key) columns with 10 keys F1 through F10, electronically not compatible with the later keyboard types
- 84 key PC/AT keyboard layout – the "84th key" being <SysRq> i.e. System Request, numerical block now clearly separated from main keyboard, also added indicator LEDs for Caps/Scroll/Num lock
- 101 key "Enhanced" keyboard layout – additional navigation and control keys, 12 F keys in row along top, grouped F1-4, F5-8, and F9-12
- 102-key "Enhanced" keyboard layout – (additional key to the right of the left Shift key for European layouts)
- 104-key "Windows" keyboard layout – Windows(x2) and Menu keys added
- 105 key as above, but for European layouts
- 107 key "Enhanced" keyboard layout – Wake, Sleep and Power keys added (for power management)

So called "multimedia keyboards" may offer additional buttons to the 104 or 107 "standard" keys, often providing volume control, media player buttons and miscellaneous user-configurable shortcuts, e.g. to email clients, web browsers, etc.

Standard key meanings

The PC keyboard with its various keys has a long history of evolution reaching back to teletypewriters. In addition to the 'old' standard keys, the PC keyboard has accumulated several special keys over the years. Some of the additions have been inspired by the opportunity or requirement for improving user productivity with general office application software, while other slightly more general keyboard additions have become de facto standards after being introduced by certain operating system or GUI software vendors such as Microsoft.

Electronic Patent Application Fee Transmittal				
Application Number	13442716			
Filing Date	09 Apr 2012			
Title of Invention	APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION			
First Named Inventor/Applicant Name	Jiang XIAOPING			
Filer	Andrew J Bateman/Adnan Fazlic			
Attorney Docket Number	CD06039C2			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub Total in USD(\$)
Basic Filing				
Pages				
Claims				
Miscellaneous Filing				
Petition				
Patent Appeals and Interference				
Post Allowance and Post Issuance				
Extension of Time				

Description	Fee Code	Quantity	Amount	Sub Total in USD(\$)
Miscellaneous				
RCE 2nd and Subsequent Request	1820	1	1700	1700
Total in USD (\$)				1700

Transaction History Date 2013-06-24

Date information retrieved from USPTO Patent
Application Information Retrieval (PAIR)
system records at www.uspto.gov

Notice of Allowability	Application No 13/442 716	Applicant(s) XIAOPING JIANG	
	Examiner BENYAM KETEMA	Art Unit 2696	AIA (First Inventor to File) Status No
<p align="center">-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address</p> <p>All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.</p> <p>1 <input checked="" type="checkbox"/> This communication is responsive to <u>05/17/2013</u> <input type="checkbox"/> A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/were filed on _____</p> <p>2 <input type="checkbox"/> An election was made by the applicant in response to a restriction requirement set forth during the interview on _____ the restriction requirement and election have been incorporated into this action.</p> <p>3 <input checked="" type="checkbox"/> The allowed claim(s) is/are <u>21-40</u>. As a result of the allowed claim(s) you may be eligible to benefit from the Patent Prosecution Highway program at a participating intellectual property office for the corresponding application. For more information please see http://www.uspto.gov/patents/init_events/iph/index.jsp or send an inquiry to PPHFeedback@uspto.gov.</p> <p>4 <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f).</p> <p>Certified copies a) <input type="checkbox"/> All b) <input type="checkbox"/> Some c) <input type="checkbox"/> None of the 1 <input type="checkbox"/> Certified copies of the priority documents have been received 2 <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____ 3 <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)). Certified copies not received _____</p> <p>Interim copies a) <input type="checkbox"/> All b) <input type="checkbox"/> Some c) <input type="checkbox"/> None of the. Interim copies of the priority documents have been received.</p> <p>Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE MONTH PERIOD IS NOT EXTENDABLE.</p> <p>5 <input type="checkbox"/> CORRECTED DRAWINGS (as replacement sheets) must be submitted <input type="checkbox"/> including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. /Mail Date _____ Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d)</p> <p>6 <input type="checkbox"/> DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.</p> <p>Attachment(s) 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO 892) 2 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No. /Mail Date <u>05/17/2013</u> 3 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 4 <input type="checkbox"/> Interview Summary (PTO 413) Paper No. /Mail Date _____ 5 <input type="checkbox"/> Examiner's Amendment/Comment 6 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 7 <input type="checkbox"/> Other _____</p>			
<p>U.S. Patent and Trademark Office PTOL 37 (Rev. 03/13)</p> <p align="center">Notice of Allowability</p> <p align="right">Part of Paper No. /Mail Date 20130611</p>			

CY00002701

DETAILED ACTION

- 1 Claims 21- 40 are presented for examination and are allowed

Information Disclosure Statement

- 2 Due to the excessively lengthy Information Disclosure Statement submitted by applicant, the examiner has given only a cursory review of the listed references. In accordance with MPEP 609.04(a), applicant is encouraged to provide a concise explanation of why the information is being submitted and how it is understood to be relevant. Concise explanations (especially those which point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability. Applicant is required to comply with this statement for any non-English language documents. See 37 CFR § 1.56 Duty to Disclose Information Material to Patentability.
- 3 The information disclosure statement (IDS) submitted on 05/17/2013 was filed after the mailing date of the Notice of Allowance on 04/22/2013. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Terminal Disclaimer

4 The terminal disclaimer filed on November 16, 2012 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of prior patent No. 8,004,497 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Examiner's Statement of Reasons for Allowance

5 The following is an examiner's statement of reasons for allowance. The prior art of record fails to disclose the claimed invention. **The features of independent claims** directed towards allowable subject matter is *determining capacitance variations of a first number of two or more sense elements of a touch screen device using a processing device to detect a presence of a conductive object on anyone of a second number of three or more button areas of the touch screen device, wherein the first number of sense elements is less than the second number of button areas, and recognizing an activation of one of the three or more button areas using the determined capacitance variations of the first number of two or more sense elements*" **Tsujioka et al (US Pat NO 5,518,078)** discloses that the presence of user's finger (i.e. conductive object) is detected by sensing device (col. 9-10) the sensing device comprising at least two sensing areas each coupled to a capacitance measurement input (fig. 5 & 6).

wherein the user can perform multiple input operation using his/her finger or pen as it is clearly shown in fig 5 in order to perform an input operation. But Tsujoka et al fails to disclose the first number of sense elements is less than the second number of button areas, and recognizing an activation of one of the three or more button areas using the determined capacitance variations of the first number of two or more sense elements. Therefore, these features in combination with the remaining language of the claims are not taught by the prior arts of record. Therefore claims 21- 40 are found to be allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled. Comments on Statement of Reasons for Allowance.

Conclusion

6 Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENYAM KETEMA whose telephone number is (571)270-7224. The examiner can normally be reached on Monday - Friday 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shalwala Bipin H can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B K /

Examiner, Art Unit 2696

/Bipin Shalwala/

Supervisory Patent Examiner, Art Unit 2696

Notice of References Cited	Application/Control No 13/442 716	Applicant(s)/Patent Under Reexamination XIAOPING JIANG	
	Examiner BENYAM KETEMA	Art Unit 2696	Page 1 of 1

U S PATENT DOCUMENTS

*		Document Number Country Code Number Kind Code	Date MM YYYY	Name	Classification
*	A	US 7 825 910	11 2010	Won Jong Sung	345/173
*	B	US 2008/0111714	05 2008	Kremin Viktor	341/33
*	C	US 2006/0016800	01 2006	Paradiso et al	219/497
	D	US			
	E	US			
	F	US			
	G	US			
	H	US			
	I	US			
	J	US			
	K	US			
	L	US			
	M	US			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code Number Kind Code	Date MM YYYY	Country	Name	Classification
	N					
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	P					
	Q					
	R					
	S					
	T					

NON PATENT DOCUMENTS

*		Include as applicable Author Title Date Publisher Edition or Volume Pertinent Pages)				
	U					
	V					
	W					
	X					

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a))
 Dates in MM YYYY format are publication dates. Classifications may be US or foreign.



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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 06/24/2013
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
KETEMA BENYAM

ART UNIT PAPER NUMBER
2696

DATE MAILED 06/24/2013

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 13/442 716, 04/09/2012, Jiang XIAOPING, CD06039C2, 6333

TITLE OF INVENTION APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION

Table with 7 columns: APPLN TYPE, ENTITY STATUS, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, UNDISCOUNTED, \$1780, \$0, \$0, \$1780, 09/24/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B, FEE(S) TRANSMITTAL, complete section number 5 titled Change in Entity Status (from status indicated above).

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II PART B, FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section 4b of Part B, Fee(s) Transmittal, should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to Mail Mail Stop ISSUE FEE
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 SAN JOSE CA 95134 1709

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper such as an assignment or formal drawing must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

_____ (Date)
_____ (Signature)
_____ (Title)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
13/442 716	04/09/2012	Jiang XIAOPING	CD06039C2	6333

TITLE OF INVENTION APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION

APPLN TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1780	\$0	\$0	\$1780	09/24/2013

EXAMINER	ART UNIT	CLASS SUBCLASS
KETEMA BENYAM	2696	345 173000

<p>1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address Form PTO/SB/122) attached</p> <p><input type="checkbox"/> Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required</p>	<p>2 For printing on the patent front page list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR alternatively _____ 1</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
--	---

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____ (B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

<p>4a The following fee(s) are submitted</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order # of Copies _____</p>	<p>4b Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed</p> <p><input type="checkbox"/> Payment by credit card Form PTO 2038 is attached</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)</p>
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5 **Change in Entity Status** (from status indicated above)

Applicant certifying micro entity status See 37 CFR 1.29

NOTE Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B) issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment

Applicant asserting small entity status See 37 CFR 1.27

NOTE If the application was previously under micro entity status checking this box will be taken to be a notification of loss of entitlement to micro entity status

Applicant changing to regular undiscounted fee status

NOTE Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status as applicable

NOTE The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant a registered attorney or agent or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No _____

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
13/442 716	04/09/2012	Jiang XIAOPING	CD06039C2	6333

60909 7590 06/24/2013
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER

KETEMA BENYAM

ART UNIT	PAPER NUMBER
2696	

DATE MAILED 06/24/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

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	35	USPTO Non Final Rejection for Application Number 11/493 350 (CD06097) dated 11/09/10 9 pages	<input type="checkbox"/>
	36	USPTO Non Final Rejection for Application Number 11/502 267 (CD06038) dated 08/11/2008 10 pages	<input type="checkbox"/>

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1 99)	Application Number		13442716
	Filing Date		2012 04 09
	First Named Inventor	XiaoPing Jiang	
	Art Unit	2629	
	Examiner Name		
	Attorney Docket Number	CD06039C2	

37	USPTO Non Final Rejection for Application Number 11/600 255 (CD06138) dated 03/29/2010 10 pages	<input type="checkbox"/>
38	USPTO Non Final Rejection for Application Number 11/600 896 (CD06101) dated 01/26/11 12 pages	<input type="checkbox"/>
39	USPTO Non Final Rejection for Application Number 11/600 896 (CD06101) dated 05/14/2010 15 pages	<input type="checkbox"/>
40	USPTO Non Final Rejection for Application Number 11/600 896 (CD06101) dated 12/16/2009 13 pages	<input type="checkbox"/>
41	USPTO Non Final Rejection for Application Number 11/700 314 (CD06163) dated 03/26/2010 7 pages	<input type="checkbox"/>
42	USPTO Non Final Rejection for Application Number 12/367 279 (CD05044D) dated 10/29/2009 8 pages	<input type="checkbox"/>
43	USPTO Notice of Allowance for Application Number 11/230 719 (CD05060) dated 01/16/2008 4 pages	<input type="checkbox"/>
44	USPTO Notice of Allowance for Application Number 11/273 708 (CD05141) dated 08/09/2007 4 pages	<input type="checkbox"/>
45	USPTO Notice of Allowance for Application Number 11/395 417 (CD05044) dated 11/06/2008 7 pages	<input type="checkbox"/>
46	USPTO Notice of Allowance for Application Number 11/437 517 (CD06039) dated 02/03/2011 10 pages	<input type="checkbox"/>
47	USPTO Notice of Allowance for Application Number 11/437 517 (CD06039) dated 05/19/2011 9 pages	<input type="checkbox"/>

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13442716
	Filing Date		2012 04 09
	First Named Inventor	XiaoPing Jiang	
	Art Unit	2629	
	Examiner Name		
	Attorney Docket Number	CD06039C2	

	48	USPTO Notice of Allowance for Application Number 11/437 517 (CD06039) dated 06/16/2011 9 pages	<input type="checkbox"/>
	49	USPTO Notice of Allowance for Application Number 11/484 085 (CD06043) dated 06/10/10 4 pages	<input type="checkbox"/>
	50	USPTO Notice of Allowance for Application Number 11/489 944 (CD06099) dated 04/09/2007 7 pages	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

EXAMINER SIGNATURE

Examiner Signature	/Benyam Ketema (06/11/2013)	Date Considered	06/11/2013
--------------------	-----------------------------	-----------------	------------

***EXAMINER Initial if reference considered whether or not citation is in conformance with MPEP 609 Draw line through a citation if not in conformance and not considered Include copy of this form with next communication to applicant**

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04 ² Enter office that issued the document by the two letter code (WIPO Standard ST 3) ³ For Japanese patent documents the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST 16 if possible ⁵ Applicant is to place a check mark here if English language translation is attached

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1 99)	Application Number	13442716
	Filing Date	2012 04 09
	First Named Inventor	XiaoPing Jiang
	Art Unit	2629
	Examiner Name	
	Attorney Docket Number	CD06039C2

CERTIFICATION STATEMENT

Please see 37 CFR 1 97 and 1 98 to make the appropriate selection(s)

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement See 37 CFR 1 97(e)(1)

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and to the knowledge of the person signing the certification after making reasonable inquiry no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1 56(c) more than three months prior to the filing of the information disclosure statement See 37 CFR 1 97(e)(2)

- See attached certification statement
- Fee set forth in 37 CFR 1 17 (p) has been submitted herewith
- None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1 33 10 18 Please see CFR 1 4(d) for the form of the signature

Signature		Date (YYYY-MM-DD)	
Name/Print	Larry Johnson	Registration Number	56861

This collection of information is required by 37 CFR 1 97 and 1 98 The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application Confidentiality is governed by 35 U S C 122 and 37 CFR 1 14 This collection is estimated to take 1 hour to complete including gathering preparing and submitting the completed application form to the USPTO Time will vary depending upon the individual case Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer U S Patent and Trademark Office U S Department of Commerce P O Box 1450 Alexandria VA 22313 1450 DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS **SEND TO Commissioner for Patents, P O Box 1450, Alexandria, VA 22313-1450**

Privacy Act Statement

The Privacy Act of 1974 (P L 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly pursuant to the requirements of the Act please be advised that (1) the general authority for the collection of this information is 35 U S C 2(b)(2) (2) furnishing of the information solicited is voluntary and (3) the principal purpose for which the information is used by the U S Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information the U S Patent and Trademark Office may not be able to process and/or examine your submission which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses

- 1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U S C 552) and the Privacy Act (5 U S C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
- 2 A record from this system of records may be disclosed as a routine use in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
- 3 A record in this system of records may be disclosed as a routine use to a Member of Congress submitting a request involving an individual to whom the record pertains when the individual has requested assistance from the Member with respect to the subject matter of the record.
- 4 A record in this system of records may be disclosed as a routine use to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974 as amended pursuant to 5 U S C 552a(m).
- 5 A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed as a routine use to the International Bureau of the World Intellectual Property Organization pursuant to the Patent Cooperation Treaty.
- 6 A record in this system of records may be disclosed as a routine use to another federal agency for purposes of National Security review (35 U S C 181) and for review pursuant to the Atomic Energy Act (42 U S C 218(c)).
- 7 A record from this system of records may be disclosed as a routine use to the Administrator, General Services, or his/her designee during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs under authority of 44 U S C 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose and any other relevant (i.e. GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
- 8 A record from this system of records may be disclosed as a routine use to the public after either publication of the application pursuant to 35 U S C 122(b) or issuance of a patent pursuant to 35 U S C 151. Further, a record may be disclosed subject to the limitations of 37 CFR 1.14 as a routine use to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent.
- 9 A record from this system of records may be disclosed as a routine use to a Federal, State, or local law enforcement agency if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH /B K /

Electronic Acknowledgement Receipt

EFS ID	16444563
Application Number	13442716
International Application Number	
Confirmation Number	6333
Title of Invention	APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION
First Named Inventor/Applicant Name	Jiang XIAOPING
Customer Number	60909
Filer	Andrew J Bateman/Andrea Wheeler
Filer Authorized By	Andrew J Bateman
Attorney Docket Number	CD06039C2
Receipt Date	29 JUL 2013
Filing Date	09 APR 2012
Time Stamp	17 02 12
Application Type	Utility under 35 USC 111(a)

Payment information

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1780
RAM confirmation Number	4552
Deposit Account	503781
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows Charge any Additional Fees required under 37 C F R Section 1 16 (National application filing search and examination fees) Charge any Additional Fees required under 37 C F R Section 1 17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C F R Section 1 19 (Document supply fees)
 Charge any Additional Fees required under 37 C F R Section 1 20 (Post Issuance fees)
 Charge any Additional Fees required under 37 C F R Section 1 21 (Miscellaneous fees and charges)

File Listing

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part / zip	Pages (if appl)
1	Transmittal Letter	CD06039C2_IssueFeeTransmittalLetter_07292013 pdf	27298 178a37f4368b37 e89353b56f1b8789e08949	no	2

Warnings

Information

2	Issue Fee Payment (PTO 85B)	CD06039C2_PartBFeeTransmittal_07292013 pdf	1025258 2b9868b4493b b4d8696412c049752 2764848d	no	2
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Warnings

Information

3	Fee Worksheet (SB06)	fee info pdf	30639 6ee1bc2 99f8d203c2e5410f f486248541784	no	2
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Warnings

Information

Total Files Size (in bytes): 1083195

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U S C 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1 53(b) (d) and MPEP 506), a Filing Receipt (37 CFR 1 54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U S C 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U S C 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U S C 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of) Examiner \ \ \ \)
)
Jiang XIAOPING) Group Art Unit 2696)
)
Application No 13/442,716) Confirmation No 6333)
)
Filed 04-09-2012)
)
For APPARATUS AND METHODS FOR)
DETECTING A CONDUCTIVE OBJECT AT A)
LOCATION)

ISSUE FEE TRANSMITTAL

Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

Sir

Applicant is in receipt of a Notice of Allowance and Fee Due Form mailed June 24 2013 in connection with the above-identified application The Issue Fee is due on or before September 24 2013 Applicant hereby submits the Issue Fee and/or the Publication Fee

The Commissioner is hereby authorized to charge any appropriate fees under 37 C F R §§ 1.16, 1.17, 1.18, 1.19, 1.20 and 1.21 that may be required to issue the present application and to credit any overpayments, to Deposit Account No 50-3781

Customer No 60909

Should the Patent Office have any questions regarding this submission or the application in general the Patent Office is urged to contact the Applicant's attorney Larry Johnson by telephone at (408) 545 7194. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

Dated 07/26/2013

By /Larry J Johnson/
Larry J Johnson
Attorney for Applicant
Registration No 56 861

Cypress Semiconductor Corporation
198 Champion Court
San Jose, CA 95134
Facsimile (408) 545-6911
Customer No 60909

Customer No 60909

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail** **Mail Stop ISSUE FEE
Commissioner for Patents
P O Box 1450
Alexandria, Virginia 22313 1450**
or **Fax** (571) 273 2885

INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required) Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Not Use Block 1 for any hang f address)

60909 7596 06/24/2013
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(Date)
(Signature)
(Title)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
13/442 716	04/09/2012	Jiang XIAOPING	CD06039C2	6333

TITLE OF INVENTION: APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION

APPLN TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1780	\$0	\$0	\$1780	09/24/2013

EXAMINER	ART UNIT	CLASS SUBCLASS
KETEMA BENYAM	2696	345 173000

<p>1. Change of correspondence address or indication of Fee Address (37 CFR 1.363)</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached</p> <p><input type="checkbox"/> Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03/02 or more recent) attached. Use of a Customer Number is required.</p>	<p>2. For printing on the patent front page, list:</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR alternatively</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.</p> <p>1 _____</p> <p>2 _____</p> <p>3 _____</p>
---	--

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: **Cypress Semiconductor Corporation**

(B) RESIDENCE (CITY AND STATE OR COUNTRY): **San Jose, CA**

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

<p>4a. The following fee(s) are submitted:</p> <p><input checked="" type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order # of Copies _____</p>	<p>4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)</p> <p><input type="checkbox"/> A check is enclosed</p> <p><input type="checkbox"/> Payment by credit card Form PTO 2038 is attached</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number 503781 (enclose an extra copy of this form)</p>
--	---

5 **Change in Entity Status** (from status indicated above)

Applicant certifying micro entity status See 37 CFR 1.29

NOTE. Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B) issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment

Applicant asserting small entity status See 37 CFR 1.27

NOTE. If the application was previously under micro entity status checking this box will be taken to be a notification of loss of entitlement to micro entity status

Applicant changing to regular undiscounted fee status

NOTE. Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status as applicable

NOTE. The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant a registered attorney or agent or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office

Authorized Signature /Larry J. Johnson/

Date 7/26/2013

Typed or printed name Larry J. Johnson

Registration No 56 861

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

Electronic Patent Application Fee Transmittal				
Application Number	13442716			
Filing Date	09 Apr 2012			
Title of Invention	APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION			
First Named Inventor/Applicant Name	Jiang XIAOPING			
Filer	Andrew J Bateman/Andrea Wheeler			
Attorney Docket Number	CD06039C2			
Filed as Large Entry				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub Total in USD(\$)
Basic Filing				
Pages				
Claims				
Miscellaneous Filing				
Petition				
Patent Appeals and Interference				
Post Allowance and Post Issuance				
Utility Appl Issue Fee	1501	1	1780	1780
Extension of Time				

Description	Fee Code	Quantity	Amount	Sub Total in USD(\$)
Miscellaneous				
Total in USD (\$)				1780



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO	ISSUE DATE	PATENT NO	ATTORNEY DOCKET NO	CONFIRMATION NO
13/442 716	08/27/2013	8519973	CD06039C2	6333

60909 7590 08/07/2013
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

ISSUE NOTIFICATION

The projected patent number and issue date are specified above

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment is 0 day(s) Any patent to issue from the above-identified application will include an indication of the adjustment on the front page

If a Continued Prosecution Application (CPA) was filed in the above-identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702 Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants)

Jiang XIAOPING Shanghai CHINA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment innovation, and commercialization of new technologies The USA offers tremendous resources and advantages for those who invest and manufacture goods here Through SelectUSA our nation works to encourage and facilitate business investment To learn more about why the USA is the best country in the world to develop technology, manufacture products and grow your business, visit SelectUSA.gov

TO Mail Stop 8 Director of the U S Patent & Trademark Office P O Box 1450 Alexandria, VA 22313 1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
--	---

In Compliance with 35 § 290 and/or 15 U S C § 1116 you are hereby advised that a court action has been filed in the U S District Court _____ NDCA _____ on the following Patents or Trademarks

DOCKET NO CV 13-04034 DMR	DATE FILED 8/29/13	U S DISTRICT COURT Oakland Division, 1301 Clay St., Suite 400S, Oakland, CA 94612
PLAINTIFF CYPRESS SEMICONDUCTOR CORPORATION		DEFENDANT LG ELECTRONICS, INC ,ET AL
PATENT OR TRADEMARK NO	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,012,103		*See attached complaint
2 6,249,825		
3 6,493,770		
4 8,004,497		
5 8,059,015		

In the above—entitled case the following patent(s) have been included

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,519,973		
2		
3		
4		
5		

In the above—entitled case the following decision has been rendered or judgement issued

DECISION/JUDGEMENT

CLERK Richard W Wicking	(BY) DEPUTY CLERK Valerie Kyono	DATE August 30 2013
----------------------------	------------------------------------	------------------------

Copy 1—Upon initiation of action mail this copy to Commissioner Copy 3—Upon termination of action mail this copy to Commissioner
 Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner Copy 4—Case file copy

1 Michael J Malecek (State Bar No 171034)
2 Email address michael.malecek@kayescholar.com
3 Marisa Armanino Williams (State Bar No 264907)
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8 Two Palo Alto Square, Suite 400
9 3000 El Camino Real
10 Palo Alto California 94306
11 Telephone (650) 319-4500
12 Facsimile (650) 319-4700

13 Attorneys for Plaintiff
14 CYPRESS SEMICONDUCTOR CORPORATION

15 **UNITED STATES DISTRICT COURT**
16 **NORTHERN DISTRICT OF CALIFORNIA**

17 CYPRESS SEMICONDUCTOR
18 CORPORATION,

19 Plaintiff,

20 v

21 LG ELECTRONICS, INC ,
22 LG ELECTRONICS U S A , INC , and
23 LG ELECTRONICS MOBILECOMM U S A
24 INC ,

25 Defendants

Case No

**COMPLAINT FOR PATENT
INFRINGEMENT**

JURY TRIAL DEMANDED

KAYE | SCHOLER LLP

1 Plaintiff Cypress Semiconductor Corporation (“Cypress” or “Plaintiff”) alleges

2 **PARTIES**

3 1 Cypress is a corporation organized and existing under the laws of the State of
4 Delaware with its principal place of business located at 198 Champion Court, San Jose,
5 California Cypress is a supplier of high-performance, mixed-signal, programmable solutions that
6 provide customers with rapid time-to-market and exceptional system value Cypress’s
7 innovations are used in a wide variety of consumer electronics such as networking and
8 telecommunication equipment, touchscreen devices, mobile handsets, video and imaging devices,
9 as well as in military communication devices

10 2 On information and belief, Defendant LG Electronics, Inc (“LGE Inc”) is a
11 corporation organized and existing under the laws of Korea with a principal place of business at
12 20 Yeouido dong Yeongdeungpo-Gu, Seoul 150-721, Korea

13 3 On information and belief, Defendant LG Electronics U S A , Inc (“LGE U S A ”)
14 is a corporation organized and existing under the laws of the State of Delaware with a principal
15 place of business at 1000 Sylvan Avenue, Englewood Cliffs New Jersey 07632

16 4 On information and belief, Defendant LG Electronics Mobilecomm U S A , Inc
17 (“LGE Mobilecomm”) is a corporation organized and existing under the laws of the State of
18 California with a principal place of business at 10225 Willow Creek Road, San Diego California
19 92131

20 5 As further described below LGE Inc , LGE U S A and LGE Mobilecomm
21 (collectively, “LGE”) manufacture and sell mobile phones and other products that infringe
22 multiple Cypress patents

23 **JURISDICTION AND VENUE**

24 6 This action arises under the patent laws of the United States, 35 U S C § 100, *et*
25 *seq* This Court has subject matter jurisdiction over this action under 28 U S C §§ 1331 and
26 1338(a)

27 7 This Court has personal jurisdiction over LGE and venue is proper in the Northern
28 District of California pursuant to 28 U S C § 1391(b) and (c) and § 1400(b) LGE maintains

KAYE | SCHOLER LLP

KAYE SCHOLER LLP

1 offices in this District, transacts business involving infringing products within this District, and
2 offers infringing products for sale in this District. On information and belief, LGE derives
3 significant revenue from the sale of infringing products distributed and used within this District,
4 and/or expects or should reasonably expect its actions to have consequences within this District,
5 and derives substantial revenue from interstate and international commerce.

6 **INTRADISTRICT ASSIGNMENT**

7 8 This is an Intellectual Property Action to be assigned on a district-wide basis
8 pursuant to Civil Local Rule 3-2(c).

9 **BACKGROUND**

10 9 For over thirty years, Cypress has been a pioneer and market innovator in
11 semiconductor technology. Cypress products include the PSoC® 1, PSoC® 3, PSoC® 4, and
12 PSoC® 5 programmable system-on-chip families, and Cypress is the world leader in capacitive
13 user interface solutions including CapSense® touch sensing, TrueTouch® touchscreens, and
14 trackpad solutions for notebook PCs and peripherals. Cypress is also the world leader in
15 universal serial bus (“USB”) controllers, which enhance connectivity and performance in a wide
16 range of consumer and industrial products. Cypress is also the world leader in static random
17 access memory (“SRAM”) and nonvolatile RAM memories.

18 10 To develop its industry-leading products, Cypress has made extensive and
19 continuous investments in research and development (“R&D”). Cypress’s R&D efforts have
20 been essential to its success as a supplier of semiconductor solutions. Cypress’s R&D
21 organization works closely with its manufacturing facilities, suppliers, and customers to improve
22 semiconductor designs and lower manufacturing costs.

23 11 To protect these critical R&D efforts, Cypress places a high value on its
24 intellectual property. Cypress has applied for and received over 2000 patents worldwide in a
25 variety of semiconductor-related technologies, and has more than 800 pending U.S. and foreign
26 patent applications. Cypress has over 250 issued U.S. patents and over 200 pending U.S. patent
27 applications directed towards USB and touchscreen technology.

28

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1 12 To protect the interests of Cypress's customers, who benefit from Cypress's
 2 leading edge technology and rely upon Cypress's proprietary solutions to compete in the
 3 marketplace, Cypress cannot allow unauthorized use of its intellectual property

4 **CYPRESS PATENTS**

5 13 On January 4, 2000, the United States Patent and Trademark Office duly and
 6 legally issued United States Patent No 6 012,103 (“the ‘103 patent”), entitled “Bus Interface
 7 System and Method,” to Cypress Cypress owns the ‘103 patent by assignment A true and
 8 correct copy of the ‘103 patent is attached as Exhibit A to this Complaint

9 14 On June 19, 2001, the United States Patent and Trademark Office duly and legally
 10 issued United States Patent No 6,249,825 (“the ‘825 patent”) entitled “Universal Serial Bus
 11 Interface System and Method,” to Cypress Cypress owns the ‘825 patent by assignment A true
 12 and correct copy of the ‘825 patent is attached as Exhibit B to this Complaint

13 15 On December 10, 2002, the United States Patent and Trademark Office duly and
 14 legally issued United States Patent No 6,493,770 (“the ‘770 patent”), entitled “System for
 15 Reconfiguring a Peripheral Device by Downloading Information from a Host and Electronically
 16 Simulating a Physical Disconnection and Reconnection to Reconfigure the Device,” to Cypress
 17 Cypress owns the ‘770 patent by assignment A true and correct copy of the ‘770 patent is
 18 attached as Exhibit C to this Complaint

19 16 On August 23, 2011, the United States Patent and Trademark Office duly and
 20 legally issued United States Patent No 8 004 497 (“the ‘497 patent”), entitled “Two-Pin
 21 Buttons,” to Cypress Cypress owns the ‘497 patent by assignment A true and correct copy of
 22 the ‘497 patent is attached as Exhibit D to this Complaint

23 17 On November 15 2011, the United States Patent and Trademark Office duly and
 24 legally issued United States Patent No 8,059 015 (“the ‘015 patent”), entitled “Capacitance
 25 Sensing Matrix for Keyboard Architecture ” to Cypress Cypress owns the ‘015 patent by
 26 assignment A true and correct copy of the ‘015 patent is attached as Exhibit E to this Complaint

27 18 On August 27, 2013, the United States Patent and Trademark Office duly and
 28 legally issued United States Patent No 8 519,973 (“the ‘973 patent”), entitled “Apparatus and

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1 Methods for Detecting a Conductive Object at a Location,” to Cypress Cypress owns the '973
2 patent by assignment A true and correct copy of the '973 patent is attached as Exhibit F to this
3 Complaint

4 19 The '103 patent, '825 patent, and '770 patent will be referred to below as the
5 “Cypress USB Patents ” The '497 patent, '015 patent, and '973 patent will be referred to below
6 as the “Cypress Touchscreen Patents” (and together with the USB Patents, the “Asserted
7 Patents”)

8 **INFRINGEMENT BY LGE**

9 20 The products manufactured imported and sold by LGE that infringe one or more
10 claims of the Cypress USB Patents include, but are not limited to the Fathom VS750 mobile
11 phone and associated software, firmware, and peripheral components, as well as other LGE
12 mobile phones and products, and associated software, firmware, and peripheral components that
13 incorporate the same or similar USB features, functionality, and/or architecture (collectively, the
14 “LGE Infringing USB Products”) The identification of products and parts in this Complaint is
15 by way of example only, and on information and belief, the exemplary products and parts
16 identified in this Complaint are representative of all LGE products and parts with reasonably
17 similar features, functionality and/or architecture, whether discontinued, current or future

18 21 The products manufactured, imported and sold by LGE that infringe one or more
19 claims of the Cypress Touchscreen patents include, but are not limited to, the Optimus S LS670
20 mobile phone and associated software, firmware, and peripheral components, as well as other
21 LGE mobile phones and products, and associated software, firmware, and peripheral components
22 that incorporate the same or similar touchscreen features, functionality, and/or architecture
23 (collectively, the “LGE Infringing Touchscreen Products”) The identification of products and
24 parts in this Complaint is by way of example only, and on information and belief, the exemplary
25 products and parts identified in this Complaint are representative of all LGE products and parts
26 with reasonably similar features, functionality and/or architecture, whether discontinued, current
27 or future

28

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1 22 The LGE Infringing USB Products and LGE Infringing Touchscreen Products
2 (collectively, the “LGE Infringing Products”) have no substantial non-infringing use

3 23 According to LGE’s website and other publicly available documents, and on
4 information and belief, the LGE Infringing Products are sold to distributors and end customers in
5 the United States. These distributors and end customers are supplied with user manuals and other
6 information that instruct downstream users how to operate the LGE Infringing Products, and LGE
7 provides these instructions while knowing since at least 2011 that the LGE Infringing Products
8 infringe multiple Cypress patents, including one or more of the Asserted Patents. Sale or use of
9 the LGE Infringing Products in accordance with LGE’s instructions on how to operate these
10 devices constitutes direct infringement of the Asserted Patents.

11 24 LGE is aware that the LGE Infringing Products infringe the Asserted Patents. In
12 an effort to resolve LGE’s infringement without resorting to litigation, Cypress made LGE aware
13 of the Cypress USB Patents in April 2011 and the Cypress Touchscreen Patents in July 2011, and
14 on multiple subsequent occasions. LGE ultimately refused to participate in any further licensing
15 negotiations and, on information and belief, continued infringing the Asserted Patents.

16 **FIRST CLAIM FOR RELIEF**
17 **(Infringement of the ’103 Patent)**

18 25 Cypress incorporates and realleges the allegations of the preceding paragraphs as
19 though set forth in full herein.

20 26 Cypress has not licensed or otherwise authorized LGE to make, use, offer for sale,
21 sell, or import into the United States any products that embody the inventions of the ’103 patent.

22 27 LGE has directly infringed and continues to directly infringe the ’103 patent by
23 making, using, importing, offering for sale or selling the LGE Infringing USB Products in the
24 United States.

25 28 LGE has had actual knowledge of the ’103 patent since at least April 1, 2011.

26 29 LGE has indirectly infringed and continues to indirectly infringe the ’103 patent
27 by inducing end-users to infringe the ’103 patent by using the LGE Infringing USB Products.
28 LGE intentionally took action that induced end users to infringe the ’103 patent by marketing,

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1 selling, and supporting the infringing devices On information and belief, at least one LGE end
2 customer or distributor has directly infringed the '103 patent by acting as instructed by LGE For
3 example, LGE supplies end customers and distributors of the LGE Infringing USB Products with
4 user manuals and other information that instruct downstream users how to operate the LGE
5 Infringing USB Products, with knowledge that use in accordance with such instructions infringes
6 the '103 patent As detailed by the user manuals and other information supplied by LGE, the
7 LGE Infringing USB Products infringe multiple Cypress patents Sale or use of the LGE
8 Infringing USB Products by end customers or distributors in accordance with LGE's instructions
9 constitutes direct infringement of the '103 patent LGE had awareness of the '103 patent and
10 knew, or was willfully blind to the fact, that its actions would cause direct infringement by end-
11 users

12 30 LGE has indirectly infringed and continues to indirectly infringe the '103 patent
13 by contributing to direct infringement by end-users who use the LGE Infringing USB Products
14 LGE supplied a component whose use by downstream users is infringing, the component is not a
15 common component suitable for non-infringing use, and LGE supplied the component with the
16 knowledge of the '103 patent and knowledge that the component was especially made or adapted
17 for use in an infringing manner

18 31 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

19 32 Cypress has been damaged and irreparably injured by LGE's infringing activities
20 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are
21 enjoined by this Court

22 33 On information and belief LGE's infringement has been and continues to be,
23 willful, wanton, and deliberate, without license or excuse and with full knowledge of the '103
24 patent

**SECOND CLAIM FOR RELIEF
(Infringement of the '825 Patent)**

25
26 34 Cypress incorporates and realleges the allegations of the preceding paragraphs as
27 though set forth in full herein

28 35 Cypress has not licensed or otherwise authorized LGE to make, use, offer for sale,

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1 sell, or import into the United States any products that embody the inventions of the '825 patent
2 36 LGE has directly infringed and continues to directly infringe the '825 patent by
3 making, using, importing, offering for sale or selling the LGE Infringing USB Products in the
4 United States

5 37 LGE has had actual knowledge of the '825 patent since at least April 1 2011

6 38 LGE has indirectly infringed and continues to indirectly infringe the '825 patent
7 by inducing end-users to infringe the '825 patent by using the LGE Infringing USB Products
8 LGE intentionally took action that induced end-users to infringe the '825 patent by marketing,
9 selling, and supporting the infringing devices On information and belief, at least one LGE end
10 customer or distributor has directly infringed the '825 patent by acting as instructed by LGE For
11 example, LGE supplies end customers and distributors of the LGE Infringing USB Products with
12 user manuals and other information that instruct downstream users how to operate the LGE
13 Infringing USB Products, with knowledge that use in accordance with such instructions infringes
14 the '825 patent As detailed by the user manuals and other information supplied by LGE, the
15 LGE Infringing USB Products infringe multiple Cypress patents Sale or use of the LGE
16 Infringing USB Products by end customers or distributors in accordance with LGE's instructions
17 constitutes direct infringement of the '825 patent LGE had awareness of the '825 patent and
18 knew, or was willfully blind to the fact, that its actions would cause direct infringement by end-
19 users

20 39 LGE has indirectly infringed and continues to indirectly infringe the '825 patent
21 by contributing to direct infringement by end-users who use the LGE Infringing USB Products
22 LGE supplied a component whose use by downstream users is infringing, the component is not a
23 common component suitable for non-infringing use, and LGE supplied the component with the
24 knowledge of the '825 patent and knowledge that the component was especially made or adapted
25 for use in an infringing manner

26 40 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

27 41 Cypress has been damaged and irreparably injured by LGE's infringing activities
28 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are

1 enjoined by this Court

2 42 On information and belief, LGE's infringement has been, and continues to be,
3 willful, wanton, and deliberate, without license or excuse and with full knowledge of the '825
4 patent

5 **THIRD CLAIM FOR RELIEF**
6 **(Infringement of the '770 Patent)**

7 43 Cypress incorporates and realleges the allegations of the preceding paragraphs as
8 though set forth in full herein

9 44 Cypress has not licensed or otherwise authorized LGE to make, use offer for sale,
10 sell, or import into the United States any products that embody the inventions of the '770 patent

11 45 LGE has directly infringed and continues to directly infringe the '770 patent by
12 making, using, importing, offering for sale or selling the LGE Infringing USB Products in the
13 United States

14 46 LGE has had actual knowledge of the '770 patent since at least April 1, 2011

15 47 LGE has indirectly infringed and continues to indirectly infringe the '770 patent
16 by inducing end users to infringe the '770 patent by using the LGE Infringing USB Products
17 LGE intentionally took action that induced end-users to infringe the '770 patent by marketing
18 selling, and supporting the infringing devices On information and belief, at least one LGE end
19 customer or distributor has directly infringed the '770 patent by acting as instructed by LGE For
20 example, LGE supplies end customers and distributors of the LGE Infringing USB Products with
21 user manuals and other information that instruct downstream users how to operate the LGE
22 Infringing USB Products, with knowledge that use in accordance with such instructions infringes
23 the '770 patent As detailed by the user manuals and other information supplied by LGE, the
24 LGE Infringing USB Products infringe multiple Cypress patents Sale or use of the LGE
25 Infringing USB Products by end customers or distributors in accordance with LGE s instructions
26 constitutes direct infringement of the '770 patent LGE had awareness of the '770 patent and
27 knew, or was willfully blind to the fact, that its actions would cause direct infringement by end-
28 users

48 LGE has indirectly infringed and continues to indirectly infringe the '770 patent

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1 by contributing to direct infringement by end-users who use the LGE Infringing USB Products
2 LGE supplied a component whose use by downstream users is infringing the component is not a
3 common component suitable for non-infringing use, and LGE supplied the component with the
4 knowledge of the '770 patent and knowledge that the component was especially made or adapted
5 for use in an infringing manner

6 49 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

7 50 Cypress has been damaged and irreparably injured by LGE's infringing activities
8 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are
9 enjoined by this Court

10 51 On information and belief, LGE's infringement has been, and continues to be,
11 willful, wanton, and deliberate, without license or excuse and with full knowledge of the '770
12 patent

**FOURTH CLAIM FOR RELIEF
(Infringement of the '497 Patent)**

13
14 52 Cypress incorporates and realleges the allegations of the preceding paragraphs as
15 though set forth in full herein

16 53 Cypress has not licensed or otherwise authorized LGE to make use offer for sale,
17 sell or import into the United States any products that embody the inventions of the '497 patent

18 54 LGE has directly infringed and continues to directly infringe the '497 patent by
19 making, using, importing, offering for sale or selling the LGE Infringing Touchscreen Products in
20 the United States

21 55 LGE has had actual knowledge of the '497 patent since at least August 25, 2011

22 56 LGE has had actual knowledge of the published application that finally issued as
23 the '497 patent since at least July 12, 2011

24 57 LGE has indirectly infringed and continues to indirectly infringe the '497 patent
25 by inducing end-users to infringe the '497 patent by using the LGE Infringing Touchscreen
26 Products LGE intentionally took action that induced end-users to infringe the '497 patent by
27 marketing, selling, and supporting the infringing devices On information and belief, at least one
28

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1 LGE end customer or distributor has directly infringed the '497 patent by acting as instructed by
2 LGE For example, LGE supplies end customers and distributors of the LGE Infringing
3 Touchscreen Products with user manuals and other information that instruct downstream users
4 how to operate the LGE Infringing Touchscreen Products, with knowledge that use in accordance
5 with such instructions infringes the '497 patent As detailed by the user manuals and other
6 information supplied by LGE, the LGE Infringing Touchscreen Products infringe multiple
7 Cypress patents Sale or use of the LGE Infringing Touchscreen Products by end customers or
8 distributors in accordance with LGE's instructions constitutes direct infringement of the '497
9 patent LGE had awareness of the '497 patent and knew or was willfully blind to the fact, that its
10 actions would cause direct infringement by end-users

11 58 LGE has indirectly infringed and continues to indirectly infringe the '497 patent
12 by contributing to direct infringement by end-users who use the LGE Infringing Touchscreen
13 Products LGE supplied a component whose use by downstream users is infringing, the
14 component is not a common component suitable for non-infringing use, and LGE supplied the
15 component with the knowledge of the '497 patent and knowledge that the component was
16 especially made or adapted for use in an infringing manner

17 59 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

18 60 Cypress has been damaged and irreparably injured by LGE's infringing activities
19 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are
20 enjoined by this Court

21 61 Cypress is entitled to damages based on the provisional rights granted under 35
22 U S C § 154 (d)

23 62 On information and belief, LGE's infringement has been, and continues to be,
24 willful, wanton and deliberate, without license or excuse and with full knowledge of the '497
25 patent

26 **FIFTH CLAIM FOR RELIEF**
(Infringement of the '015 Patent)

27 63 Cypress incorporates and realleges the allegations of the preceding paragraphs as
28 though set forth in full herein

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1 64 Cypress has not licensed or otherwise authorized LGE to make, use, offer for sale,
2 sell, or import into the United States any products that embody the inventions of the '015 patent

3 65 LGE has directly infringed and continues to directly infringe the '015 patent by
4 making, using, importing, offering for sale or selling the LGE Infringing Touchscreen Products in
5 the United States

6 66 LGE has had actual knowledge of the '015 patent since at least March 7, 2012

7 67 LGE has had actual knowledge of the published application that finally issued as
8 the '015 patent since at least July 12, 2011

9 68 LGE has indirectly infringed and continues to indirectly infringe the '015 patent
10 by inducing end-users to infringe the '015 patent by using the LGE Infringing Touchscreen
11 Products LGE intentionally took action that induced end-users to infringe the '015 patent by
12 marketing, selling and supporting the infringing devices On information and belief, at least one
13 LGE end customer or distributor has directly infringed the '015 patent by acting as instructed by
14 LGE For example, LGE supplies end customers and distributors of the LGE Infringing
15 Touchscreen Products with user manuals and other information that instruct downstream users
16 how to operate the LGE Infringing Touchscreen Products, with knowledge that use in accordance
17 with such instructions infringes the '015 patent As detailed by the user manuals and other
18 information supplied by LGE, the LGE Infringing Touchscreen Products infringe multiple
19 Cypress patents Sale or use of the LGE Infringing Touchscreen Products by end customers or
20 distributors in accordance with LGE's instructions constitutes direct infringement of the '015
21 patent LGE had awareness of the '015 patent and knew, or was willfully blind to the fact, that its
22 actions would cause direct infringement by end-users

23 69 LGE has indirectly infringed and continues to indirectly infringe the '015 patent
24 by contributing to direct infringement by end-users who use the LGE Infringing Touchscreen
25 Products LGE supplied a component whose use by downstream users is infringing, the
26 component is not a common component suitable for non infringing use, and LGE supplied the
27 component with the knowledge of the '015 patent and knowledge that the component was
28 especially made or adapted for use in an infringing manner

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1 70 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

2 71 Cypress has been damaged and irreparably injured by LGE's infringing activities
3 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are
4 enjoined by this Court

5 72 Cypress is entitled to damages based on the provisional rights granted under 35
6 U S C § 154 (d)

7 73 On information and belief LGE's infringement has been, and continues to be,
8 wilful, wanton, and deliberate, without license or excuse and with full knowledge of the '015
9 patent

10 **SIXTH CLAIM FOR RELIEF**
(Infringement of the '973 Patent)

11 74 Cypress incorporates and realleges the allegations of the preceding paragraphs as
12 though set forth in full herein

13 75 Cypress has not licensed or otherwise authorized LGE to make, use, offer for sale,
14 sell, or import into the United States any products that embody the inventions of the '973 patent

15 76 LGE has directly infringed and continues to directly infringe the '973 patent by
16 making, using, importing, offering for sale or selling the LGE Infringing Touchscreen Products in
17 the United States

18 77 LGE has had actual knowledge of the '973 patent since at least August 29, 2013

19 78 LGE has indirectly infringed and continues to indirectly infringe the '973 patent
20 by inducing end-users to infringe the '973 patent by using the LGE Infringing Touchscreen
21 Products LGE intentionally took action that induced end users to infringe the '973 patent by
22 marketing, selling, and supporting the infringing devices On information and belief, at least one
23 LGE end customer or distributor has directly infringed the '973 patent by acting as instructed by
24 LGE For example LGE supplies end customers and distributors of the LGE Infringing
25 Touchscreen Products with user manuals and other information that instruct downstream users
26 how to operate the LGE Infringing Touchscreen Products, with knowledge that use in accordance
27 with such instructions infringes the '973 patent As detailed by the user manuals and other
28 information supplied by LGE, the LGE Infringing Touchscreen Products infringe multiple

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1 Cypress patents Sale or use of the LGE Infringing Touchscreen Products by end customers or
2 distributors in accordance with LGE's instructions constitutes direct infringement of the '973
3 patent LGE had awareness of the '973 patent and knew or was willfully blind to the fact, that its
4 actions would cause direct infringement by end users

5 79 LGE has indirectly infringed and continues to indirectly infringe the '973 patent
6 by contributing to direct infringement by end-users who use the LGE Infringing Touchscreen
7 Products LGE supplied a component whose use by downstream users is infringing, the
8 component is not a common component suitable for non-infringing use, and LGE supplied the
9 component with the knowledge of the '973 patent and knowledge that the component was
10 especially made or adapted for use in an infringing manner

11 80 LGE's actions are in violation of one or more of the provisions of 35 U S C § 271

12 81 Cypress has been damaged and irreparably injured by LGE's infringing activities
13 and will continue to be so damaged and irreparably injured unless LGE's infringing activities are
14 enjoined by this Court

15 82 On information and belief, LGE's infringement has been, and continues to be,
16 willful, wanton, and deliberate, without license or excuse and with full knowledge of the '973
17 patent

18
19 **PRAYER FOR RELIEF**

20 WHEREFORE, Cypress requests that this Court grant the following relief

21 a Enter judgment that the LGE Infringing USB Products infringe the '103, '825, and
22 '770 patents and the LGE Infringing Touchscreen Products infringe the '497, '015 and '973
23 patents,

24 b Enter an order permanently enjoining LGE and its officers, directors, agents,
25 servants, employees, attorneys, licensees, successors, assigns, and customers and those in active
26 concert or participation with any of them, from making, using, offering to sell, or selling in the
27 United States or importing into the United States any devices that infringe any claim of the
28 Asserted Patents

- 1 c Award Cypress its damages, including lost profits, resulting from LGE's
2 infringement in an amount to be determined at trial, pursuant to 35 U S C §§ 154 and 284,
3 d Find this to be an exceptional case pursuant to 35 U S C § 285
4 e Award Cypress prejudgment interest and post-judgment interest on its damages
5 and award Cypress its costs,
6 f Perform an accounting of LGE's infringing sales not presented at trial and award
7 Cypress additional damages from any such infringing sales, and
8 g Award Cypress its costs and attorneys' fees and such other and further relief as the
9 Court deems just and appropriate

10 **DEMAND FOR JURY TRIAL**

11 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Cypress hereby demands
12 trial by jury on all issues raised by the Complaint
13

14
15 Dated August 29, 2013

Respectfully submitted,

KAYE SCHOLER LLP

17
18 By /s/ Michael J. Malecek
19 Michael J. Malecek
20 Attorneys for Plaintiff
21 CYPRESS SEMICONDUCTOR
22 CORPORATION
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IBM PC keyboard

From Wikipedia, the free encyclopedia
(Redirected from PC keyboard)

The **IBM PC keyboard** and its derivative computer keyboards are standardized. However, during the 20 years of the PC architecture being constantly updated, several types of keyboards have been developed.

Contents

- 1 Keyboard layouts
- 2 Standard key meanings
 - 2.1 From mechanical typewriters
 - 2.2 From Teletype keyboards
 - 2.3 Invented for the PC
- 3 Connectors
- 4 External links

Keyboard layouts

The following list gives a concise overview of the PC keyboard as it has changed over the years, the changes often being made at the launch of new PC versions. For each layout, some of the most significant updates are mentioned.

- 83 key PC/XT keyboard layout – original left hand side function key (F key) columns with 10 keys F1 through F10, electronically not compatible with the later keyboard types
- 84 key PC/AT keyboard layout – the "84th key" being <SysRq> i.e. System Request, numerical block now clearly separated from main keyboard, also added indicator LEDs for Caps/Scroll/Num lock
- 101 key "Enhanced" keyboard layout – additional navigation and control keys, 12 F keys in row along top, grouped F1-4, F5-8, and F9-12
- 102-key "Enhanced" keyboard layout – (additional key to the right of the left Shift key for European layouts)
- 104-key "Windows" keyboard layout – Windows(x2) and Menu keys added
- 105 key as above, but for European layouts
- 107 key "Enhanced" keyboard layout – Wake, Sleep and Power keys added (for power management)

So called "multimedia keyboards" may offer additional buttons to the 104 or 107 "standard" keys, often providing volume control, media player buttons and miscellaneous user-configurable shortcuts, e.g. to email clients, web browsers, etc.

Standard key meanings

The PC keyboard with its various keys has a long history of evolution reaching back to teletypewriters. In addition to the 'old' standard keys, the PC keyboard has accumulated several special keys over the years. Some of the additions have been inspired by the opportunity or requirement for improving user productivity with general office application software, while other slightly more general keyboard additions have become de facto standards after being introduced by certain operating system or GUI software vendors such as Microsoft.

See also modifier key

From mechanical typewriters

- *Shift* selects the upper character or select upper case of letters The Shift key in typewriters was attached to a lever that moved the character types so that the uppercase characters could be printed in the paper
- *Caps Lock* selects upper case, or if shift is pressed, lower case of letters In mechanical typewriters, it worked like the Shift key, but also used a lock to keep the Shift key depressed The lock was released by pressing the Shift key
- *Enter* wraps to the next line or activates the default or selected option ASCII keyboards had CR or "carriage return" Typewriters used a lever that once pressed, would move the cylinder with the paper

From Teletype keyboards

- *Ctrl* shifts the value of letters and numbers from the ASCII graphics range, down into the ASCII control characters For example, CTRL S is XOFF (stops many programs as the print to screen) CTRL-Q is XON (resume printing stopped by CTRL S)
- *Esc* produces an ASCII ESC character Older software uses it to exit menus or modes
- *Tab* produces an ASCII Tab character Moves to the next tab stop
- *~* is a *tilde*, an accent backspaced and printed over other letters for non English languages Nowadays the key does not produce a backspaceable character and is used for 'not' or 'circa'
- *^* is a *grave* accent also formerly backspaced over letters to write non English languages, on some systems it is used as an opening quote The single quote ' is normally used for an acute accent
- *^* is a circumflex, another accent for non English languages Also used to indicate exponentiation where superscript is not available
- *** is an asterisk, used to indicate a note, or multiplication
- *_* is an underline, backspaced and overprinted to add emphasis
- *|* is a bar, originally used as a typographic separator for optical character recognition Many character sets break it in the middle so it cannot be confused with the numeral "1" or the letter "l" In *NIX OSes this is known as a pipe

Invented for the PC

- *Windows* is a quick way to open the "Start" menu in Windows' standard Explorer shell, and can usually be configured to behave similarly in other graphical user interfaces for Windows and other operating systems
- *Context menu* brings up a context menu, similar to right-clicking
- Function keys are the numbered keys, use varies by program, but F1 is often "help"
- Arrow keys move on the screen When shifted they select items
- *Home* moves to the start of text, usually the left side of the screen
- *End* moves to the end of text, usually the right most edge of the current line
- *Page Up* and *Page Down* move through the document by pages
- *Del* deletes the character before the screen position or the selected items
- *Ins* toggles between "insertion" and "overwrite" mode
- *Print screen* originally printed a text image of the screen, nowadays often takes a screenshot In combination with Alt, it produces a different keycode, SysReq
- *Num lock* toggles between states for the numeric keypad When off, it acts as arrow and navigational keys When on it is a 10-key similar to a standard calculator Preferences vary so much that a favorite default for this key can often be configured in the BIOS configuration Its continued existence on keyboards that separate out the arrow keys has mostly historical reasons
- *Scroll lock* is little used On modern software, typing text usually causes earlier text to scroll off the top of the screen or window Some old programs could disable this and restart at the top of the window when scroll lock was pressed The advantage is that the entire screen full of text does not shift, making it easier

to read. On spreadsheets such as Microsoft Excel, it locks the cell pointer on the current cell, allowing the user to use the arrow keys to move the view window around without moving the cell pointer.

- *Pause* paused processing and is sometimes used to pause games. In combination with Control, it produces a different keycode, for *Break*. Ctrl Break traditionally stopped programs in DOS. Ctrl Break is also used to halt execution of the debugger in some programming environments such as Microsoft Visual Studio. In combination with the Windows key, it brings up the System Properties window in Microsoft Windows environments.
- *Alt* shifts the letters and numbers into the range above hex 0x80 where the international characters and special characters exist in the PC's standard character set.
- *Alt Gr* works like the Ctrl+Alt key combination, often used to print special characters like the backslash on Spanish keyboards. (On the original IBM AT Enhanced keyboard the right Alt key has green letters)
- *Alt* plus a number typed on the numeric pad produces special characters, see Windows Alt keycodes.
- *Fn* may be on compact keyboards such as those built into laptop computers. When depressed in combination with other keys, it controls hardware functions such as switching between the built-in screen and an external display, changing screen brightness, or changing speaker volume. These alternate meanings are usually indicated with text or symbols of a different color printed on the key, with the 'Fn' key text having that same color.

Connectors

There are three types of connector used to connect a PC keyboard to the main system unit. All three are mechanically different from each other, but the first two are electrically identical (except for XT keyboards). The three connector types are listed below in chronological order:

- 5-pin DIN (DIN 41524) "AT" connector
- 6-pin "Mini DIN" (DIN 45322) "PS/2" connector
- 4-pin USB connector
- Older Macintosh keyboards were connected with the Apple Desktop Bus connector, but now the standard USB connector.

External links

- Standard keyboard layouts (<http://www.pcguide.com/ref/kb/layout/std.htm>) – From The PC Guide website
- IBM.com keyboard page (<http://www-306.ibm.com/software/globalization/topics/keyboards/physical.jsp>)

Retrieved from "http://en.wikipedia.org/wiki/IBM_PC_keyboard"

Categories: Computer keyboards | IBM PC compatibles

-
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119

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/489 944	07/19/2006	Ryan D Seguire	16820P476	1797
8791 7590 05/24/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES CA 90025 1030			EXAMINER DOLE TIMOTHY J	
			ART UNIT 2858	PAPER NUMBER
			MAIL DATE 05/24/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding
The time period for reply, if any, is set in the attached communication

Supplemental Notice of Allowability	Application No	Applicant(s)	
	11/489 944	SEGUINE RYAN D	
	Examiner	Art Unit	
	Timothy J Dole	2858	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1/ This communication is responsive to IDS filed April 2, 2007

2 The allowed claim(s) is/are 1, 20

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

* Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE MONTH PERIOD IS NOT EXTENDABLE.**

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No. /Mail Date _____

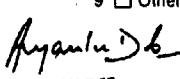
(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. /Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO-413) Paper No. /Mail Date _____
3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No. /Mail Date <u>4/2/07</u>	7 <input type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____


ANJAN DEB
 PRIMARY EXAMINER



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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 07/27/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
EDWARDS JR TIMOTHY

ART UNIT PAPER NUMBER

2612
DATE MAILED 07/27/2010

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Row 1: 11/600 255, 11/14/2006, Viktor Kremn, CD06138, 3901. TITLE OF INVENTION: CAPACITANCE TO CODE CONVERTER WITH SIGMA DELTA MODULATOR

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Row 1: nonprovisional, NO, \$1510, \$300, \$0, \$1810, 10/27/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail** Mail Stop ISSUE FEE
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 P O Box 1450
 Alexandria, Virginia 22313 1450
 or **Fax** (571) 273 2885

INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Use Block 1 if any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

60909 7590 07/27/2010

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below:

(Deposit amount)
(Stamp)
(Date)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 255	11/14/2006	Viktor Kremn	CD06138	3901

TITLE OF INVENTION CAPACITANCE TO CODE CONVERTER WITH SIGMA DELTA MODULATOR

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	10/27/2010

EXAMINER	ART UNIT	CLASS SUBCLASS
EDWARDS JR TIMOTHY	2612	324 678000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)

Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached

Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached Use of a Customer Number is required

2 For printing on the patent front page list

(1) the names of up to 3 registered patent attorneys or agents OR alternatively

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____

(B) RESIDENCE (CITY AND STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted

Issue Fee

Publication Fee (No small entity discount permitted)

Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above)

A check is enclosed

Payment by credit card Form PTO 2038 is attached

The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above)

a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/600 255	11/14/2006	Viktor Kremn	CD06138	3901

60909 7590 07/27/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER

EDWARDS JR TIMOTHY

ART UNIT PAPER NUMBER

2612

DATE MAILED 07/27/2010

Determination of Patent Term Adjustment under 35 U S C 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 805 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 805 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888) 786 0101 or (571) 272 4200

Notice of Allowability	Application No	Applicant(s)	
	11/600 255	KREMIN VIKTOR	
	Examiner	Art Unit	
	Timothy Edwards Jr	2612	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1 This communication is responsive to Amendment filed June 29, 2010
- 2 The allowed claim(s) is/are 1, 5, 6, 13, 15, 20, 22, 24, 26, 27, 29, 58 and 60, 65
- 3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
- a) All b) Some c) None of the
- 1 Certified copies of the priority documents have been received
- 2 Certified copies of the priority documents have been received in Application No. _____
- 3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))
- Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

- 4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.
- 5 CORRECTED DRAWINGS (as replacement sheets) must be submitted
- (a) including changes required by the Notice of Draftperson's Patent Drawing Review (PTO 948) attached
- 1) hereto or 2) to Paper No./Mail Date _____
- (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
- Paper No./Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| <p>1 <input type="checkbox"/> Notice of References Cited (PTO 892)</p> <p>2 <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO 948)</p> <p>3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08)
Paper No./Mail Date _____</p> <p>4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</p> | <p>5 <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6 <input type="checkbox"/> Interview Summary (PTO 413)
Paper No./Mail Date _____</p> <p>7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment</p> <p>8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</p> <p>9 <input type="checkbox"/> Other _____</p> |
|--|--|

DETAILED ACTION

EXAMINER'S AMENDMENT

1 An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

IN THE CLAIMS

Claims 16-19 line 1 delete 14 and insert --15--

Allowable Subject Matter

1 Claims 1-5, 8-13, 15-20, 22-24, 26, 27, 29-58, 60-65 are allowed.

2 The following is an examiner's statement of reasons for allowance. Applicant has amended the claims with indicated allowable subject matter. Application is in condition for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled. Comments on Statement of Reasons for Allowance.

Conclusion

Any inquiry concerning this communication should be directed to Examiner Timothy Edwards, Jr at telephone number (571) 272-3067. The examiner can normally be reached on Monday Thursday 8:00 a.m.-6:00 p.m. The examiner cannot be reached on Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Brian Zimmerman, can be reached at (571) 272-3059.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-4700, Monday-Friday, 8:30 a.m.-5:00 p.m.

Any response to this action should be fax to

(571) 273-8300 (for formal communications intended for entry)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> or contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Timothy Edwards, Jr /
Primary Examiner Art Unit 2612
July 27, 2010



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198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
OKEBATO SAHLU

ART UNIT PAPER NUMBER
2629

DATE MAILED 09/16/2010

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 11/700 314, 01/30/2007, Zheng Qin, CDD06163, 8666

TITLE OF INVENTION SETTING A DISCHARGE RATE AND A CHARGE RATE OF A RELAXATION OSCILLATOR CIRCUIT

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, NO, \$1510, \$300, \$0, \$1810, 12/16/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1 313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

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B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail Stop ISSUE FEE**
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 or **Fax (571) 273 2885**

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CURRENT CORRESPONDENCE ADDRESS (Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(D post am)
(\$ per)
(D)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/700 314	01/30/2007	Zheng Qin	CD06163	8666

TITLE OF INVENTION SETTING A DISCHARGE RATE AND A CHARGE RATE OF A RELAXATION OSCILLATOR CIRCUIT

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	12/16/2010

EXAMINER	ART UNIT	CLASS SUBCLASS
OKEBATO SAHLU	2629	345 173000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)

Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached

Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.

2 For printing on the patent front page, list:

(1) the names of up to 3 registered patent attorneys or agents OR alternatively _____ 1

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2

_____ 3

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE _____

(B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent) Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted:

Issue Fee

Publication Fee (No small entity discount permitted)

Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above):

A check is enclosed

Payment by credit card Form PTO 2038 is attached

The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above)

a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
11/700 314	01/30/2007	Zheng Qin	CD06163	8666

60909 7590 09/16/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
OKEBATO SAHLU

ART UNIT PAPER NUMBER
2629

DATE MAILED 09/16/2010

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 724 day(s) If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice the Patent Term Adjustment will be 724 day(s)

If a Continued Prosecution Application (CPA) was filed in the above identified application the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702 Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888) 786 0101 or (571) 272 4200

Notice of Allowability	Application No	Applicant(s)	
	11/700 314	QIN ET AL	
	Examiner	Art Unit	
	SAHLU OKEBATO	2629	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to 06/28/2010

2 The allowed claim(s) is/are 1-18

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input checked="" type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input checked="" type="checkbox"/> Interview Summary (PTO 413) Paper No./Mail Date <u>9/9/2010</u>
3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08) Paper No./Mail Date _____	7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

/Quan Zhen Wang/
Supervisory Patent Examiner Art Unit 2629

DETAILED ACTION

- 1 Claim 1 is amended Claims 19-22 are canceled (see Examiner's amendment below) Therefore, claims 1-18 are pending

EXAMINER'S AMENDMENT

- 2 An examiner's amendment to the record appears below Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312 To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee

Authorization for this examiner's amendment was given in a telephone interview and email message with Larry Johnson (Registration No. 56 861) on 09/09/2010

The application of claim 1 has been amended which shall read as follows

Claim 1 A method, comprising providing a sensor element of a sensing device, the sensor element coupled to a relaxation oscillator including a first programmable current source and a second programmable current source, receiving a ratio of a discharge rate to a charge rate at a ratio decoder, the ratio decoder coupled to the first programmable current source and the second programmable current source, and setting the first programmable current source and the second programmable current source based on the received ratio

Please cancel claims 19-22

Allowable Subject Matter

3 Claims 1-18 are allowed

Reason for allowance

4 The following is an examiner's statement of reasons for allowance

Kodrnja et al , US Patent 6060957 discloses a relaxation oscillator 3
fig 3 which includes a first and second capacitors and a switch which is used
to control either charging the first capacitor and discharging the second
capacitor or charging the second capacitor and discharging the first capacitor

Embree et al , US Patent, 4292604 discloses an oscillatory signal
generator circuit includes three current sources 52 521 and 522 a
comparator 523 a capacitor C and a resistor R Those currents are means for
charge and discharge the capacitor C

However, none of the prior art teaches the configuration of providing a
sensor element of a sensing device the sensor element coupled to a
relaxation oscillator including a first programmable current source and a
second programmable current source receiving a ratio of a discharge rate to
a charge rate at a ratio decoder the ratio decoder coupled to the first

programmable current source and the second programmable current source,
and setting the first programmable current source and the second
programmable current source based on the received ratio

Any comments considered necessary by applicant must be submitted
no later than the payment of the issue fee and to avoid processing delays,
should preferably accompany the issue fee. Such submissions should be
clearly labeled. Comments on Statement of Reasons for Allowance

Conclusion

- 5 Any inquiry concerning this communication or earlier communications from
the examiner should be directed to SAHLU OKEBATO whose telephone
number is (571)270-3375. The examiner can normally be reached on 7 00
AM - 5 00 PM

If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, Quan-Zhen Wang, can be reached on 571-272-3114.
The fax phone number for the organization where this application or
proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SAHLU OKEBATO/
Examiner, Art Unit 2629 09/09/2010

/Quan-Zhen Wang/
Supervisory Patent Examiner, Art Unit 2629



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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 08/23/2010
CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709

EXAMINER
ZHU JOHN X

ART UNIT PAPER NUMBER
2831

DATE MAILED 08/23/2010

Table with 5 columns: APPLICATION NO, FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO, CONFIRMATION NO. Values: 12/367 279, 02/06/2009, Dennis Seguinte, CD05044DIV, 9537

TITLE OF INVENTION METHOD FOR COMPENSATING FOR DIFFERENCES IN CAPACITANCE BETWEEN MULTIPLE CAPACITIVE SENSORS

Table with 7 columns: APPLN TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE. Values: nonprovisional, NO, \$1510, \$0, \$0, \$1510, 11/23/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT PROSECUTION ON THE MERITS IS CLOSED THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT SEE 37 CFR 1.313 AND MPEP 1308

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED THIS STATUTORY PERIOD CANNOT BE EXTENDED SEE 35 U.S.C. 151 THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE

HOW TO REPLY TO THIS NOTICE

I Review the SMALL ENTITY status shown above

If the SMALL ENTITY is shown as YES verify your current SMALL ENTITY status

A If the status is the same pay the TOTAL FEE(S) DUE shown above

B If the status above is to be removed check box 5b on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above or

If the SMALL ENTITY is shown as NO

A Pay TOTAL FEE(S) DUE shown above or

B If applicant claimed SMALL ENTITY status before or is now claiming SMALL ENTITY status check box 5a on Part B Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above

II PART B FEE(S) TRANSMITTAL or its equivalent must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required) If you are charging the fee(s) to your deposit account section 4b of Part B Fee(s) Transmittal should be completed and an extra copy of the form should be submitted If an equivalent of Part B is filed a request to reapply a previously paid issue fee must be clearly made and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B

III All communications regarding this application must give the application number Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary

IMPORTANT REMINDER Utility patents issuing on applications filed on or after Dec 12, 1980 may require payment of maintenance fees It is patentee's responsibility to ensure timely payment of maintenance fees when due

PART B FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to **Mail Stop ISSUE FEE
Commissioner for Patents
P O Box 1450
Alexandria, Virginia 22313 1450**
or Fax (571) 273 2885

INSTRUCTIONS This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required) Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1 by (a) specifying a new correspondence address and/or (b) indicating a separate FEE ADDRESS for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Use Block 1 if any tag field)

60909 7590 08/23/2010

**CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE CA 95134 1709**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper such as an assignment or formal drawing must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above or being facsimile transmitted to the USPTO (571) 273 2885 on the date indicated below.

(Date)
(Signature)
(Title)

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
12/367 279	02/06/2009	Dennis Seguire	CD05044DIV	9537

TITLE OF INVENTION **METHOD FOR COMPENSATING FOR DIFFERENCES IN CAPACITANCE BETWEEN MULTIPLE CAPACITIVE SENSORS**

APPLN TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	11/23/2010

EXAMINER	ART UNIT	CLASS SUBCLASS
ZHU JOHN X	2831	324 684000

1 Change of correspondence address or indication of Fee Address (37 CFR 1.363)

Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached

Fee Address indication (or Fee Address Indication form PTO/SB/47 Rev 03 02 or more recent) attached. Use of a Customer Number is required.

2 For printing on the patent front page list:

(1) the names of up to 3 registered patent attorneys or agents OR alternatively _____

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____

3 ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNOR _____

(B) RESIDENCE (CITY and STATE OR COUNTRY) _____

Please check the appropriate assignee category or categories (will not be printed on the patent): Individual Corporation or other private group entity Government

4a. The following fee(s) are submitted:

Issue Fee

Publication Fee (No small entity discount permitted)

Advance Order # of Copies _____

4b. Payment of Fee(s) (Please first reapply any previously paid issue fee shown above):

A check is enclosed

Payment by credit card Form PTO 2038 is attached

The Director is hereby authorized to charge the required fee(s) any deficiency or credit any overpayment to Deposit Account Number _____ (enclose an extra copy of this form)

5 Change in Entity Status (from status indicated above)

a Applicant claims SMALL ENTITY status See 37 CFR 1.27 b Applicant is no longer claiming SMALL ENTITY status See 37 CFR 1.27(g)(2)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No _____

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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
12/367 279	02/06/2009	Dennis Seguine	CD05044DIV	9537
60909	7590	08/23/2010	EXAMINER ZHU JOHN X	
CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134 1709			ART UNIT PAPER NUMBER 2831	
DATE MAILED 08/23/2010				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>)

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272 7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1 (888) 786 0101 or (571) 272 4200.

Notice of Allowability	Application No	Applicant(s)	
	12/367 279	SEGUINE DENNIS	
	Examiner	Art Unit	
	JOHN ZHU	2831	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address

All claims being allowable PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed) a Notice of Allowance (PTOL 85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1 This communication is responsive to TD filed on 8/2/10

2 The allowed claim(s) is/are 10, 18, 21, 28

3 Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a) (d) or (f)

a) All b) Some c) None of the

1 Certified copies of the priority documents have been received

2 Certified copies of the priority documents have been received in Application No. _____

3 Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

Certified copies not received _____

Applicant has THREE MONTHS FROM THE MAILING DATE of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE MONTH PERIOD IS NOT EXTENDABLE.

4 A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO 152) which gives reason(s) why the oath or declaration is deficient.

5 CORRECTED DRAWINGS (as replacement sheets) must be submitted

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO 948) attached

1) hereto or 2) to Paper No./Mail Date _____

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of

Paper No./Mail Date _____

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6 DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1 <input type="checkbox"/> Notice of References Cited (PTO 892)	5 <input type="checkbox"/> Notice of Informal Patent Application
2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 948)	6 <input type="checkbox"/> Interview Summary (PTO 413)
3 <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08)	Paper No./Mail Date _____
4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material	7 <input type="checkbox"/> Examiner's Amendment/Comment
	8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
	9 <input type="checkbox"/> Other _____

/John Zhu/
Examiner Art Unit 2831

ALLOWANCE

1 Response to communications filed on 8/2/10

Terminal Disclaimer

2 The terminal disclaimer filed on 8/2/10 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 7 504,833 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

3 Claims 10-18 21-28 are allowed

4 The following is a statement of reasons for the indication of allowable subject matter

Claim 10 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method for compensating for differences in capacitance between each of a plurality of capacitive sensors comprising generating a correction factor for each capacitive sensor, and acquire run-time capacitance values by exposing the capacitive sensor to input events and recording a run-time capacitance value of each capacitive sensor to the baseline capacitance value of the sensor to generate a compensated capacitance value for each capacitive sensor.

Claims 11-18 and 28 are allowable as they depend from claim 10

Claim 21 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method comprising generating a baseline count value for each of a plurality of capacitive sensors and a subsequent run-time count value, and modifying a difference between the baseline count value and the run-time count value for each of the plurality of capacitance sensors by a compensation value for the sensors

Claim 22 is allowable as it depends on claim 21

Claim 23 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including specifically a method comprising a plurality of input switches having a signal path coupled between a corresponding capacitance source to a common node comparing capacitance values corresponding to each capacitance source to the reference value in run-time mode

Claims 24-27 are allowable as they depend on claim 23

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920. The examiner can normally be reached on M-F 8-4 30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number 12/367 279
Art Unit 2831

Page 4

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Zhu
Examiner
Art Unit 2831

/John Zhu/
Examiner Art Unit 2831

/Jeff Natalini/
Primary Examiner Art Unit 2831

CY00002783

PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO 875

Application or Docket Number
13/442 716

APPLICATION AS FILED PART I

FOR		(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
				RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a) (b) or (c))		N/A	N/A	N/A			N/A	380
SEARCH FEE (37 CFR 1.16(k) (i) or (m))		N/A	N/A	N/A			N/A	620
EXAMINATION FEE (37 CFR 1.16(o) (p) (q))		N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))		20	minus 20				x 60	0 00
INDEPENDENT CLAIMS (37 CFR 1.16(h))		3	minus 3				x 250 =	0 00
APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s)						0 00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))								0 00
If the difference in column 1 is less than zero enter 0 in column 2				TOTAL			TOTAL	1250

APPLICATION AS AMENDED PART II

AMENDMENT A	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(i))	M		-	x	=		x	
Independent (37 CFR 1.16(h))	M		-	x			x	-
Application Size Fee (37 CFR 1.16(s))								
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE			TOTAL ADD'L FEE	
AMENDMENT B	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(i))	M			x			x	=
Independent (37 CFR 1.16(h))	M		=	x	=		x	
Application Size Fee (37 CFR 1.16(s))								
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
				TOTAL ADD'L FEE			TOTAL ADD'L FEE	

If the entry in column 1 is less than the entry in column 2 write 0 in column 3
 If the Highest Number Previously Paid For IN THIS SPACE is less than 20 enter 20
 If the Highest Number Previously Paid For IN THIS SPACE is less than 3 enter 3
 The Highest Number Previously Paid For (Total or Independent) is the highest found in the appropriate box in column 1

PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO 875

Application or Docket Number
13/442 716

APPLICATION AS FILED PART I

FOR		(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
				RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b) or (c))		N/A	N/A	N/A			N/A	380
SEARCH FEE (37 CFR 1.16(k), (l) or (m))		N/A	N/A	N/A			N/A	620
EXAMINATION FEE (37 CFR 1.16(c), (p) or (q))		N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))		20	minus 20			OR	x 60	0 00
INDEPENDENT CLAIMS (37 CFR 1.16(h))		3	minus 3				x 250	0 00
APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s)						0 00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))								0 00
If the difference in column 1 is less than zero enter 0 in column 2				TOTAL			TOTAL	1250

APPLICATION AS AMENDED PART II

AMENDMENT A	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(j))	M			x		OR	x	=
Independent (37 CFR 1.16(h))	M			x	-	OR	x	=
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(j))	M			x	=	OR	x	-
Independent (37 CFR 1.16(h))	M			x	-	OR	x	=
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

If the entry in column 1 is less than the entry in column 2 write 0 in column 3
 If the Highest Number Previously Paid For IN THIS SPACE is less than 20 enter 20
 If the Highest Number Previously Paid For IN THIS SPACE is less than 3 enter 3
 The Highest Number Previously Paid For (Total or Independent) is the highest found in the appropriate box in column 1

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO 875				Application or Docket Number 13/442 716		Filing Date 04/09/2012		<input type="checkbox"/> To be Mailed				
APPLICATION AS FILED – PART I					OTHER THAN							
(Column 1)			(Column 2)		SMALL ENTITY <input type="checkbox"/>		OR			SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)					
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a) (b), or (c))	N/A	N/A	N/A			N/A						
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A						
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(c) (p) or (q))	N/A	N/A	N/A			N/A						
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =		X \$ =		OR	X \$ =						
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =		X \$ =			X \$ =						
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof See 35 U S C 41(a)(1)(G) and 37 CFR 1.16(s)											
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))												
If the difference in column 1 is less than zero enter 0 in column 2			TOTAL			TOTAL						
APPLICATION AS AMENDED – PART II					OTHER THAN							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR			SMALL ENTITY	
AMENDMENT	05/31/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	20	Minus	20	= 0	X \$ =		OR	X \$60=	0		
	Independent (37 CFR 1.16(b))	3	Minus	3	= 0	X \$ =		OR	X \$250=	0		
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))												
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0		
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR			SMALL ENTITY	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		Minus		=	X \$ =		OR	X \$ =			
	Independent (37 CFR 1.16(b))		Minus		=	X \$ =		OR	X \$ =			
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))												
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE			

* If the entry in column 1 is less than the entry in column 2 write 0 in column 3
 if the Highest Number Previously Paid For IN THIS SPACE is less than 20 enter 20
 if the Highest Number Previously Paid For IN THIS SPACE is less than 3 enter 3
 The Highest Number Previously Paid For (Total or Independent) is the highest number found in the appropriate box in column 1

Legal Instrument Examiner
 /PAMELA YOUNG/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U S C 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete including gathering preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U S Patent and Trademark Office, U S Department of Commerce, P O Box 1450, Alexandria, VA 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO Commissioner for Patents, P O Box 1450, Alexandria, VA 22313 1450.
 If you need assistance in completing the form call 1 800 PTO 9199 and select option 2

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO 875						Application or Docket Number 13/442 716				
APPLICATION AS FILED PART I										
		(Column 1)	(Column 2)		SMALL ENTITY		OR	OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)	
BASIC FEE (37 CFR 1.16(c) (b) or (c))	N/A	N/A	N/A		N/A	380		N/A	620	
SEARCH FEE (37 CFR 1.16(k) (l) or (m))	N/A	N/A	N/A		N/A	250		N/A	250	
EXAMINATION FEE (37 CFR 1.16(c) (p) or (q))	N/A	N/A	N/A		N/A	0 00	x	60	0 00	
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 =			x	250	x	250	0 00	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3							0 00	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s)					0 00			0 00	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
If the difference in column 1 is less than zero enter 0 in column 2										
			TOTAL		TOTAL			TOTAL		
						1250				
APPLICATION AS AMENDED PART II										
		(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)			
	Total (37 CFR 1.16(i))	M	=	x	=	x	-	OR	-	
	Independent (37 CFR 1.16(h))	M		x		x	=	OR	=	
	Application Size Fee (37 CFR 1.16(s))								OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR	
				TOTAL ADD'L FEE		TOTAL ADD'L FEE		OR		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)			
	Total (37 CFR 1.16(i))	M	=	x	=	x	-	OR	-	
	Independent (37 CFR 1.16(h))	M		x		x	=	OR	=	
	Application Size Fee (37 CFR 1.16(s))								OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR	
				TOTAL ADD'L FEE		TOTAL ADD'L FEE		OR		
<p>If the entry in column 1 is less than the entry in column 2 write 0 in column 3</p> <p>If the Highest Number Previously Paid For IN THIS SPACE is less than 20 enter 20</p> <p>If the Highest Number Previously Paid For IN THIS SPACE is less than 3 enter 3</p> <p>The Highest Number Previously Paid For (Total or Independent) is the highest found in the appropriate box in column 1</p>										

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO 875				Application or Docket Number 13/442 716		Filing Date 04/09/2012		<input type="checkbox"/> To be Mailed			
APPLICATION AS FILED – PART I						OTHER THAN					
(Column 1)			(Column 2)			SMALL ENTITY <input type="checkbox"/>		OR		SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)					
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A		N/A						
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l) or (m))</small>	N/A	N/A	N/A		N/A						
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(e), (p) or (q))</small>	N/A	N/A	N/A		N/A						
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	minus 20 =		X \$ =		OR	X \$ =					
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =		X \$ =		OR	X \$ =					
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s)										
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>											
If the difference in column 1 is less than zero enter 0 in column 2						TOTAL			TOTAL		
APPLICATION AS AMENDED – PART II						OTHER THAN					
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT	11/16/2012	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)			
	Total <small>(37 CFR 1.16(i))</small>	20	Minus	20	=	0	OR	X \$62=	0		
	Independent <small>(37 CFR 1.16(b))</small>	3	Minus	3	=	0	OR	X \$250=	0		
		<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>									
		<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>									
If the difference in column 1 is less than zero enter 0 in column 2						TOTAL ADD'L FEE			TOTAL ADD'L FEE	0	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)			
	Total <small>(37 CFR 1.16(i))</small>		Minus		=		OR	X \$ =			
	Independent <small>(37 CFR 1.16(b))</small>		Minus		=		OR	X \$ =			
		<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>									
		<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>									
If the entry in column 1 is less than the entry in column 2 write 0 in column 3											
If the Highest Number Previously Paid For IN THIS SPACE is less than 20 enter 20											
If the Highest Number Previously Paid For IN THIS SPACE is less than 3 enter 3											
The Highest Number Previously Paid For (Total or Independent) is the highest number found in the appropriate box in column 1											

Legal Instrument Examiner
/TERRY MALLOY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete including gathering preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313 1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO Commissioner for Patents P.O. Box 1450 Alexandria VA 22313 1450**
 If you need assistance in completing the form call 1 800 PTO 9199 and select option 2

Table of Contents

Family 1/1

5 record(s) per family, collapsed by 3 record(s)

Record 1/3

Publication Number:

Title:

Title - DWPI:

Priority Number:

Priority Date:

Application Number:

Application Date:

Publication Date:

IPC Class Table:

IPC	Section	Class	Subclass	Class Group	Subgroup
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F0003033	G	G06	G06F	G06F0003	G06F0003033
G06F0003045	G	G06	G06F	G06F0003	G06F0003045

IPC Class Table - DWPI:

IPC - DWPI	Section - DWPI	Class - DWPI	Subclass - DWPI	Class Group - DWPI	Subgroup - DWPI
G06F0003033	G	G06	G06F	G06F0003	G06F0003033
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F0003045	G	G06	G06F	G06F0003	G06F0003045

Assignee/Applicant:

JP F Terms:

JP FI Codes:

Assignee - Original:

Any CPC Table:

Type	Invention	Additional	Version	Office

ECLA:

Abstract:

Language of Publication:

INPADOC Legal Status Table:

Gazette Date	Code	INPADOC Legal Status Impact
2012-08-28	AS	-
Description:		
2006-05-18	AS	-
Description:		

Post-Issuance (US):

Reassignment (US) Table:

Assignee	Assignor	Date Signed	Reel/Frame	Date
	CYPRESS SEMICONDUCTOR CORPORATION	2012-08-22	028863/0870	2012-08-28
Conveyance:				
Corresponent:				

CYPRESS SEMICONDUCTOR CORPORATION,SAN JOSE,CA,US			
Conveyance:			
Corresponent:			

Maintenance Status (US):

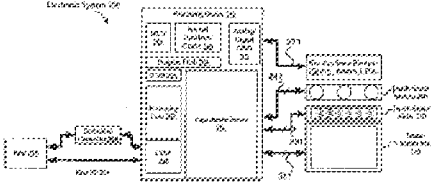
Litigation (US):

Opposition (EP):

License (EP):

EPO Procedural Status:

Front Page Drawing:



Record 2/3

Publication Number:

Title:

Title - DWPI:

Priority Number:

Priority Date:

Application Number:

Application Date:

Publication Date:

IPC Class Table:

IPC	Section	Class	Subclass	Class Group	Subgroup
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F000302	G	G06	G06F	G06F0003	G06F000302
G06F0003045	G	G06	G06F	G06F0003	G06F0003045
G09G000500	G	G09	G09G	G09G0005	G09G000500
H03K0017975	H	H03	H03K	H03K0017	H03K0017975

IPC Class Table - DWPI:

IPC - DWPI	Section - DWPI	Class - DWPI	Subclass - DWPI	Class Group - DWPI	Subgroup - DWPI
G06F000302	G	G06	G06F	G06F0003	G06F000302
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F0003044	G	G06	G06F	G06F0003	G06F0003044
G06F0003045	G	G06	G06F	G06F0003	G06F0003045
G09G000500	G	G09	G09G	G09G0005	G09G000500
H03K0017975	H	H03	H03K	H03K0017	H03K0017975

Assignee/Applicant:

JP F Terms:

JP FI Codes:

Assignee - Original:

Any CPC Table:

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Type	Invention	Additional	Version	Office

**ECLA:
Abstract:**

**Language of Publication:
INPADOC Legal Status Table:**

Gazette Date	Code	INPADOC Legal Status Impact
2012-08-28	AS	-
Description:		
2011-08-05	AS	-
Description:		

**Post-Issuance (US):
Reassignment (US) Table:**

Assignee	Assignor	Date Signed	Reel/Frame	Date
	CYPRESS SEMICONDUCTOR CORPORATION	2012-08-22	028863/0870	2012-08-28
Conveyance:				
Corresponent:				
CYPRESS SEMICONDUCTOR CORPORATION,SAN JOSE,CA,US				

Conveyance:

Corresponent:

Maintenance Status (US):

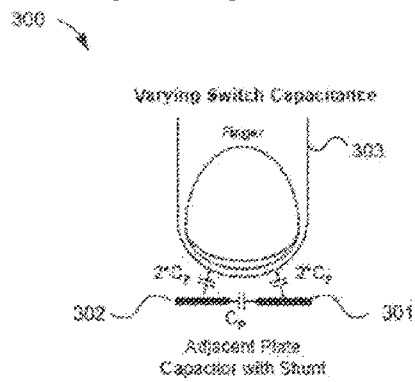
Litigation (US):

Opposition (EP):

License (EP):

EPO Procedural Status:

Front Page Drawing:



Record 3/3

Publication Number:

Title:

Title - DWPI:

Priority Number:

Priority Date:

Application Number:

Application Date:

Publication Date:

IPC Class Table:

IPC	Section	Class	Subclass	Class Group	Subgroup
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F0003033	G	G06	G06F	G06F0003	G06F0003033
G06F0003045	G	G06	G06F	G06F0003	G06F0003045

IPC Class Table - DWPI:

IPC - DWPI	Section - DWPI	Class - DWPI	Subclass - DWPI	Class Group - DWPI	Subgroup - DWPI
G06F0003033	G	G06	G06F	G06F0003	G06F0003033
G06F0003041	G	G06	G06F	G06F0003	G06F0003041
G06F0003045	G	G06	G06F	G06F0003	G06F0003045

Assignee/Applicant:

Jiang, Shanghai, CN

JP F Terms:

JP FI Codes:

Assignee - Original:

Any CPC Table:

Type	Invention	Additional	Version	Office

ECLA:

Abstract:

Language of Publication:
INPADOC Legal Status Table:

Gazette Date	Code	INPADOC Legal Status Impact
2012-08-28	AS	-
Description:		
2012-07-02	AS	-
Description:		

Post-Issuance (US):
Reassignment (US) Table:

Assignee	Assignor	Date Signed	Reel/Frame	Date
	CYPRESS SEMICONDUCTOR CORPORATION	2012-08-22	028863/0870	2012-08-28
Conveyance:				
Corresponent:				
CYPRESS SEMICONDUCTOR CORPORATION,SAN JOSE,CA,US				
Conveyance:				
Corresponent:				

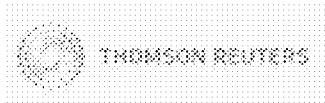
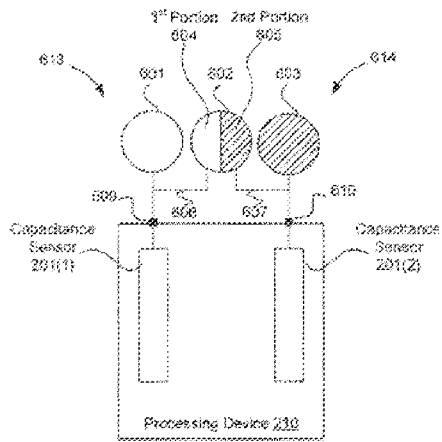
Maintenance Status (US):
Litigation (US):

Opposition (EP):

License (EP):

EPO Procedural Status:

Front Page Drawing:



USPTO Maintenance Report

Patent Bibliographic Data		01/14/2014 12:18 PM			
Patent Number:	8519973	Application Number:	13442716		
Issue Date:	08/27/2013	Filing Date:	04/09/2012		
Title:	APPARATUS AND METHODS FOR DETECTING A CONDUCTIVE OBJECT AT A LOCATION				
Status:	4th year fee window opens: 08/27/2016		Entity:	LARGE	
Window Opens:	N/A	Surcharge Date:	N/A	Expiration:	N/A
Fee Amt Due:	Window not open	Surchg Amt Due:	Window not open	Total Amt Due:	Window not open
Fee Code:					
Surcharge Fee Code:					
Most recent events (up to 7):	--- No Maintenance History Exists ---				
Address for fee purposes:	CYPRESS SEMICONDUCTOR CORPORATION 198 CHAMPION COURT SAN JOSE CA 95134-1709				