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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.



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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,119.

PATENT UNDER REEXAMINATION 8223117.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/019,119	Patent Under Reexamination 8223117	
	Examiner Colin LaRose	Art Unit 3992	AIA (FITF) Status No

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

- a. ☒ Responsive to the communication(s) filed on 20 January 2023.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

b. ☐ This action is made FINAL.

- c. ☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c)**. If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. ☐ Notice of References Cited by Examiner, PTO-892. | 3. ☐ Interview Summary, PTO-474. |
| 2. ☐ Information Disclosure Statement, PTO/SB/08. | 4. ☐ _____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 1-7,9 and 15-18 are subject to reexamination.
- 1b. ☒ Claims 8,10-14 and 19-20 are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☒ Claims 2-3 and 17 are patentable and/or confirmed.
4. ☒ Claims 1-7,9 and 15-18 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
 - 1 ☐ been received.
 - 2 ☐ not been received.
 - 3 ☐ been filed in Application No. _____.
 - 4 ☐ been filed in reexamination Control No. _____.
 - 5 ☐ been received by the International Bureau in PCT application No. _____.

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

9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: _____

cc: Requester (if third party requester)

NON-FINAL ACTION (REISSUE OF U.S. PATENT 8,223,117)**TABLE OF CONTENTS**

I. ACKNOWLEDGEMENTS	2
II. STATUS OF CLAIMS.....	3
III. PRIOR ART CITED HEREIN	3
IV. CLAIM INTERPRETATION – PHRASES INVOKING 35 U.S.C. § 112, SIXTH PARAGRAPH	4
V. CLAIM REJECTIONS – 35 USC § 103 (OBVIOUSNESS)	11
VI. ALLOWABLE SUBJECT MATTER.....	25
VII. CONCLUSION.....	25

I. ACKNOWLEDGEMENTS

This non-final Office action addresses *ex parte* reexamination proceeding no. 90/019,119 (“Instant Proceeding”). Based upon a review of the Instant Proceeding, the actual filing date is October 7, 2022 (“Actual Filing Date”).

The Instant Proceeding is an *ex parte* reexamination of U.S. Patent No. 8,223,117 (“Patent Under Reexamination”) titled “METHOD AND APPARATUS TO CONTROL DISPLAY BRIGHTNESS WITH AMBIENT LIGHT CONDITIONS.” The Patent Under Reexamination was filed on December 17, 2008 (“Non-Provisional Filing Date”) and assigned by the Office non-provisional U.S. patent application control number 12/336,990 (“Non-Provisional Application”) and issued on July 17, 2012 with claims 1-20 (“Originally Patented Claims”).

On January 5, 2023, an order granting reexamination for claims 1-7, 9, and 15-18 was issued.

On January 20, 2023, Patent Owner waived the right to file an optional Patent Owner Statement under 37 C.F.R. § 1.530.

II. STATUS OF CLAIMS

Claims 1-20 are currently pending (“Pending Claims”).

Claims 1-7, 9, and 15-18 are currently examined (“Examined Claims”).

Claims 8, 10-14, 19 and 20 are not subject to reexamination and therefore are withdrawn from consideration.

Regarding the Examined Claims and as a result of this Office action:

Claims 1, 4-7, 9, 15, 16, and 18 are rejected under 35 U.S.C. § 103.

Claims 2, 3, and 17 are confirmed patentable.

III. PRIOR ART CITED HEREIN

The following prior art patents and printed publications are cited herein:

U.S. Patent 4,386,345 (“Narveson”);

U.S. Patent 5,270,818 (“Ottenstein”);

U.S. Patent 7,110,062 (“Whitted”); and

JP-1999-316566 (“Pioneer”).

IV. CLAIM INTERPRETATION – PHRASES INVOKING 35 U.S.C. § 112, SIXTH PARAGRAPH

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The claims in this proceeding are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when pre-AIA 35 U.S.C. § 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under pre-AIA 35 U.S.C. § 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that”; and
- (C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with pre-AIA 35 U.S.C. § 112, sixth paragraph. The presumption that the claim limitation is interpreted under §

Art Unit: 3992

112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with § 112, sixth paragraph. The presumption that the claim limitation is not interpreted under § 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function. See *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348-49 (Fed. Cir. 2015). The challenger can rebut that presumption by demonstrating that a person of ordinary skill in the art would not understand the term to have sufficiently definite meaning as a name for structure. See *id.* at 1349. The challenger must demonstrate that, to a person of ordinary skill in the art, the term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function (emphasis added). *Id.*

Claim limitations in this proceeding that use the word “means” (or “step”) are being interpreted under § 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this proceeding that do not use the word “means” (or “step”) are not being interpreted under § 112, sixth paragraph, except as otherwise indicated in an Office action.

This proceeding includes one or more claim limitations that do not use the word “means,” but are nonetheless being interpreted under § 112, sixth paragraph, because the claim limitations use a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitations are:

Functional Phrase #1 (claim 1) – “a first input configured to receive a user signal indicative of a user selectable brightness setting.”

- (A) “First input” is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.
- (B) “Configured to receive a user signal indicative of a user selectable brightness setting” is functional language that modifies the placeholder “first input.”
- (C) “First input” is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function. Instead, it is a generic term that does not implicate any particular structure.

Functional Phrase #2 (claim 1) – “a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.”

- (A) “Dark level bias” is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.
- (B) “Configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” is functional language that modifies the placeholder “dark level bias.”
- (C) “Dark level bias” is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function.

Functional Phrase #3 (claim 9) – “a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode.”

(A) “Second input” is a generic placeholder for means inasmuch as the term does not appear to denote any particular structure.

(B) “Configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode” is functional language that modifies the placeholder “second input.”

(C) “Second input” is not sufficient structure for executing the claimed function, nor is it modified by sufficient structure for executing the function. Instead, it is a generic term that does not implicate any particular structure.

Because these claim limitations are being interpreted under § 112, sixth paragraph, they are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

Based upon a review of the Patent Under Reexamination, the Examiner concludes that the corresponding structures for the above-identified Functional Phrases are disclosed as follows:

Functional Phrase #1 (claim 1) – “a first input configured to receive a user signal indicative of a user selectable brightness setting.”

– corresponds to “dimming control,” shown in FIG. 2, which by all accounts is a conventional dimmer control for a display device.

Functional Phrase #2 (claim 1) – “a dark level bias configured to adjust the combined signal to generate a brightness control signal that is used to control a brightness level of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.”

– corresponds to “dark level bias,” shown in FIG. 2, which by all accounts is a predetermined value that is provided via known methods such as hardware and/or software and used to adjust the combined signal (i.e., the output of multiplier 106) via a summation circuit. The dark level bias is “configured to adjust the combined signal to generate a brightness control signal ... such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero” by providing a scaled dark level bias value (i.e., the output of 100) to a summing circuit (104), which adds the scaled dark level bias value to the combined signal (i.e., the output of the multiplier 106, which generates the product of the user-selectable dimming control with a scaled light sensor value).

Accordingly, the “dark level bias” is construed to correspond to a predetermined input value (“dark level bias” in FIG. 2) that is added (104) to the combined signal (output of 106) in order to adjust the combined signal so that the resulting brightness control signal is maintained above a predetermined level when the “light sensor” value is zero.

Note that the embodiment of FIG. 1 is not applicable to Functional Phrase #2 because in FIG. 1 the dark level bias is not configured to adjust the combined signal, as claimed. The dark level bias of FIG. 1 is used for generating the combined signal at multiplier 106, rather than for adjusting the combined signal after the combined signal has been generated.

Likewise, the embodiments of FIGS. 4 and 8-10 are not applicable to Functional Phrase #2.

For FIG. 4, the dark level bias is not “configured to adjust the combined signal to generate a brightness control signal ... such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero,” as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by “duty cycle” in the equation at column 7:20) is zero, then the brightness control signal is zero. In this instance, the dark level bias (characterized as “the first major term within the brackets” – see column 7:29-31) can ensure that the value within the brackets of the brightness control signal equation at column 7:15-24 is maintained above a predetermined value. However, when the output of the light sensor “ISRC” is zero, the brightness control signal is computed as the product of the dark level bias value (i.e., first major term within the brackets) and the user-selected brightness value (i.e., duty cycle); the resulting brightness control signal is not maintained above a predetermined level because a “duty cycle” value of zero will nullify the effect of the dark level bias and produce an output of zero.

Likewise, for FIG. 8, the brightness control signal is not “maintained above a predetermined level when the ambient light level decreases to approximately zero,” as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light

level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by potentiometer “R3”) indicates a resistance of zero, then the brightness control signal is zero. See brightness control signal equation at column 10:5-13.

Likewise, for FIG. 9, the brightness control signal is not “maintained above a predetermined level when the ambient light level decreases to approximately zero,” as claimed. Instead, the brightness control signal is effectively zero in instances when both ambient light level and the user-selected brightness value are both zero. That is, when the user-selected brightness value (denoted by the binary value inputted to DAC 918) indicates a value of zero, then the brightness control signal is zero. See brightness control signal equation at column 11:6-15.

The embodiment of FIG. 10 includes circuitry substantially similar to that of FIG. 4, and therefore, the brightness control signal produced by FIG. 10 is assumed to be substantially similar to that of FIG. 4, wherein a user-selected brightness value of zero produces a brightness control signal of zero, even in instances where the ambient light level is zero. That is, FIG. 10 does not appear to include a dark level bias that ensures the brightness control signal is maintained at or above a predetermined level for low-light conditions, as claimed.

Functional Phrase #3 (claim 9) – “a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode.”

– The second input is not illustrated in the embodiment of FIG. 2, however, it appears corresponds to an enable signal (“auto”) and associated circuitry shown in FIG. 4 that are

operative to either include (auto mode) or exclude (manual mode) the output of the light sensor 402 in the calculation of the brightness control signal.

V. CLAIM REJECTIONS – 35 USC § 103 (OBVIOUSNESS)

The following is a quotation of pre-AIA 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, 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.

Claims 1, 4-7, 15, 16, and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pioneer (JP-1999-316566 – English translation) and Ottenstein (U.S. 5,270,818).

Regarding **claim 1**, Pioneer teaches a brightness control circuit with selective ambient light correction (FIG. 3) comprising:

a first input (38a-38d, FIG. 3) configured to receive a user signal indicative of a user selectable brightness setting (see paragraphs [0104]–[0106] – the user presses the adjusting keys 38a-38d to produce an operating signal Sop that indicates a user-selectable luminance (i.e., brightness) setting – the operation of which is substantially equivalent to a dimmer control inasmuch as both the adjusting keys 38 of Pioneer and a conventional dimmer control receive user input for selecting a luminance level; the operating signal Sop includes an “input value” obtained in step S7 of FIG. 7; the input value is denoted as yS2 and corresponds to a user-

Art Unit: 3992

selected luminance value that was inputted for a corresponding ambient light value $xS2$ – see paragraphs [0109]–[0120]);

a light sensor (25, FIG. 3) configured to sense ambient light and to output a sensing signal indicative of the ambient light level (see paragraph [0119] – the light sensor produces surrounding brightness value “ xn ”);

a multiplier configured to selectively generate a combined signal based on both the user signal and the sensing signal (see Equation 1 at paragraph [120] – a product based on the user signal $yS2$ and the surrounding brightness signal xn is generated to produce a combined signal denoted as $\{ (yS2 - yS1) / (xS2 - xS1) \} * (xn - xS1)$, where “*” indicates the multiplication operation; note that the claimed term “multiplier” is construed to denote a conventional multiplier that is implemented via software or analog/mixed circuitry and operative to receive input values and “selectively generate” the product of those values – i.e., generate a product using the values that are selected as input); and

a dark level bias (i.e., the “ $yS1$ ” of Equation 1 at paragraph [0120]) configured to adjust the combined signal to generate a brightness control signal (“ yn ”) that is used to control a brightness level of a visible display (i.e., as illustrated in FIG. 6(b), the value of $yS1$ is chosen for a corresponding ambient low-light value $xS1$ and as shown in Equation 1, the value of $yS1$ is used to adjust the combined signal; also, as shown in FIG. 7, the value yn denotes luminance adjustment value that directly corresponds to an actual luminance value that controls the brightness of a display on the basis of the determined ambient light level xn).

Pioneer does not appear to expressly teach that the dark level bias value (i.e., $yS1$) is configured to adjust the combined signal so as to generate a brightness control signal “such that

Art Unit: 3992

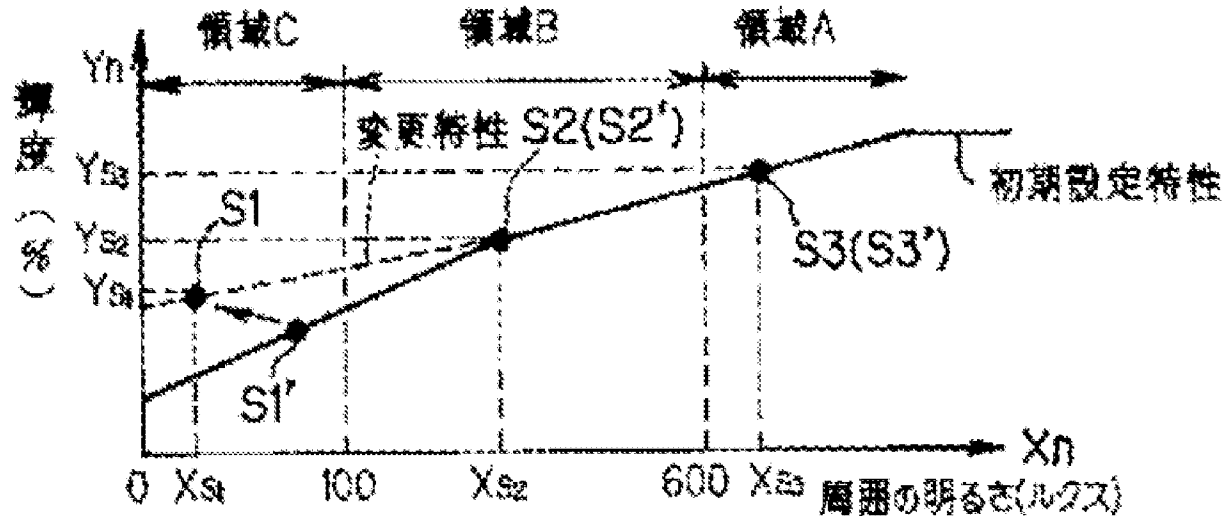
the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero,” as claimed.

Although the user-inputted value $yS1$ is not expressly disclosed as being a dark-level bias that maintains the brightness control signal y_n above a predetermined level when the ambient light level decreases to approximately zero, the value $yS1$ appears to function in this manner as a dark-level bias in the instance where a user sets the $yS1$ value when the ambient light level is zero (i.e., $xS1 = 0$).

According to Equation 1 at paragraph [0120], the user designates an input value $yS1$ corresponding to an ambient light value of $xS1$ in low-light conditions. Presumably, the user is permitted to select an input value $yS1$ corresponding to any ambient low-light level, including the instance in which there is no ambient light, i.e., $xS1 = 0$.

The Request at pp. 65-69 asserts that $yS1$ functions as a dark-level bias to keep the brightness control function y_n above a predetermined level $yS1$. Allegedly, for an input value $yS1$ being set by the user when the ambient light level is zero (i.e., when $xS1 = 0$), the input value $yS1$ effectively functions as a dark level bias that maintains the brightness of the signal y_n above a predetermined level when the detected surrounding brightness is approximately zero (i.e., $x_n = 0$). In this case, the combined signal $\{ (yS2 - yS1) / (xS2 - xS1) \} * (x_n - xS1)$ becomes zero because both x_n and $xS1$ are zero, and the luminance adjustment value y_n is computed as simply the user-selected input value $yS1$.

As shown in FIG. 6(b), the tentative characteristic curve in the dark region (i.e., region C) is generated by forming a straight line between the plotted values of $S1$ and $S2$:



Pioneer (untranslated version), FIG. 6(b)

As illustrated in FIG. 6(b), the brightness value $yS1$ is designated by the user for the corresponding ambient light low-level $xS1$, which is shown as being close to an ambient light level of zero. Due to the user's designation of $S1 = (xS1, yS1)$, the brightness control signal y_n has a value that is close to $yS1$ when the ambient light level $x_n = 0$. Based on this observation and the construction of the graph in FIG. 6(b), it is apparent that a designation of a brightness value $yS1$ when $xS1 = 0$ produces a brightness control signal that is equal to $yS1$ for an input of $x_n = 0$.

Accordingly, it appears that the user-designated value $yS1$ functions as a dark-level bias for instances in which $yS1$ is set as a non-zero value when the corresponding ambient light level is approximately zero. Those skilled in the art would have found it "obvious to try" setting a dark-level bias value $yS1$ for the instance in which the ambient light level is approximately zero because in the low ambient light region of the graph of FIG. 6(b) – i.e., region C – there are a finite number of $xS1$ values (namely, 0-100) for which a corresponding brightness value $yS1$ can be designated by the user, and based on the above observations, those skilled in the art would

Art Unit: 3992

have recognized that the $yS1$ value of Equation 1 functions as a so-called “dark level bias” to maintain the brightness signal y_n at a predetermined level above zero when the combined signal of the equation equals zero. According to FIG. 6(b) of Pioneer, a user is permitted to designate a value $S1 = (xS1, yS1)$ for setting a tentative luminance characteristic line in a low-light situation (i.e., for conditions in which $xS1 < 100$), and based on Equation 1 at paragraph [0120], those skilled in the art would have understood that the combined signal term of the equation becomes zero for instances in which $x_n = xS1$, such that the luminance adjustment value y_n is maintained at the predetermined value $yS1$ when $x_n = xS1 = 0$. Accordingly, for instances in which $xS1 = 0$ (or approximately zero), $yS1$ inherently functions as a dark level bias, as claimed.

Regarding **claim 4**, Pioneer renders obvious the brightness control circuit of claim 1, wherein the dark level bias is added to the combined signal such that the amount of adjustment to the combined signal is independent of the user selectable brightness setting (see Equation 1 at paragraph [0120] – the dark level bias $yS1$ is added to the combined signal $\{ (yS2 - yS1) / (xS2 - xS1) \} * (x_n - xS1)$, so that the amount of adjustment provided by $yS1$ is independent of the user-selected brightness setting $yS2$).

Regarding **claim 5**, Pioneer renders obvious the brightness control circuit of claim 4, wherein the dark level bias is added to an output of the multiplier (i.e., $yS1$ is added to the output of $\{ (yS2 - yS1) / (xS2 - xS1) \} * (x_n - xS1)$).

Regarding **claim 6**, Pioneer renders obvious the brightness control circuit of claim 1, further comprising an overdrive clamp circuit coupled to the brightness control signal to limit its

Art Unit: 3992

amplitude to a predefined range (see Pioneer at paragraph [0118] – a maximum luminance value is specified, and in instances where the brightness control signal y_n reaches the maximum value, the line that corresponds to the signal becomes parallel to the x-axis, thereby clamping the output to the maximum value).

Regarding **claim 7**, Pioneer renders obvious the brightness control circuit of claim 1, wherein the brightness control signal is provided to a display driver to control backlight illumination of a liquid crystal display (see paragraph [0121]–[0123] – brightness control signal y_n is converted to a quadratic signal, as shown in FIG. 7, and then inputted to drive circuit 37 to control the backlight of the LCD).

Regarding **claim 15**, Pioneer discloses a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (see paragraphs [0104]–[0106] – the user presses the adjusting keys 38a-38d to produce an operating signal S_{op} that indicates a user-selectable luminance (i.e., brightness) setting – the operation of which is substantially equivalent to a dimmer control inasmuch as both the adjusting keys 38 of Pioneer and a conventional dimmer control receive user input for selecting a luminance level; the operating signal S_{op} includes an “input value” obtained in step S7 of FIG. 7; the input value is denoted as y_{S2} and corresponds to a user-selected luminance value that was inputted for a corresponding ambient light value x_{S2} – see paragraphs [0109]–[0120]);

selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (see Equation 1 at paragraph [120] – a

Art Unit: 3992

product based on the user signal $yS2$ and the surrounding brightness signal xn is generated to produce a combined signal denoted as $\{ (yS2 - yS1) / (xS2 - xS1) \} * (xn - xS1)$, where “*” indicates the multiplication operation); and

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display (i.e., as illustrated in FIG. 6(b), the value of $yS1$ is chosen for a corresponding ambient low-light value $xS1$ and as shown in Equation 1, the value of $yS1$ is used to adjust the combined signal; also, as shown in FIG. 7, the value yn denotes luminance adjustment value that directly corresponds to an actual luminance value that controls the brightness of a display on the basis of the determined ambient light level xn).

Pioneer does not appear to expressly teach that the dark level bias value (i.e., $yS1$) is configured to adjust the combined signal so as to generate a brightness control signal “such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero,” as claimed.

However, this limitation is considered to be obvious in view of Pioneer’s disclosure for the same reasons as given above for claim 1.

Regarding **claim 16**, Pioneer renders obvious the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (i.e., Pioneer’s method is implemented via processing circuit 30 (FIG. 3), which appears to be a mixed-signal circuit).

Regarding **claim 18**, Pioneer renders obvious the method of claim 15, wherein the dark level bias is added to the combined signal after selective multiplication such that the amount of adjustment to the combined signal is independent of the input signal and the sense signal (see Equation 1 at paragraph [0120] – the dark level bias $yS1$ is added to the combined signal $\{ (yS2 - yS1) / (xS2 - xS1) \} * (x_n - xS1)$, so that the amount of adjustment provided by $yS1$ is independent of the user-selected brightness setting $yS2$).

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pioneer (JP-1999-316566) and Ottenstein (U.S. 5,270,818).

Regarding **claim 9**, Pioneer renders obvious the brightness control circuit of claim 1, but does not appear to disclose or suggest a second input configured to receive a selection signal to selectively operate the brightness control circuit in an auto mode or a manual mode, wherein the selection signal enables the light sensor in the auto mode and disables the light sensor in the manual mode.

Ottenstein discloses an arrangement for automatically controlling the brightness of cockpit displays. In particular, Ottenstein's system utilizes ambient light sensors (12 and 13) to produce signals indicative of the ambient light and a brightness control 15 that produces a signal indicative of a user-selected brightness setting. Ottenstein utilizes a multiplier to selectively generate a combined signal based on the maximum ambient light signal and the user-selected brightness setting, as shown in FIG. 1.

In addition, Ottenstein includes an auto mode/manual mode switch 14 that enables or disables the operation of the automatic brightness control. As shown in FIG. 1, when the auto

mode is enabled, then the maximum ambient light signal is multiplied by the product of the DPU brightness signal 15, DPU raster signal 16, and the harmonization gain 17. When the manual mode is enabled, then the maximum ambient light is divided by itself to produce an output value of 1 and effectively nullify the influence of the ambient light sensor (i.e., the product of user inputs 15-17 is multiplied by 1). Therefore, the output of the light sensor is effectively utilized or disregarded based on whether the user selects the Auto or Manual mode of operation.

It would have been obvious to modify Pioneer by the teachings of Ottenstein to include an auto/manual input switch that selectively operates the brightness control circuit in auto or manual mode, as claimed, because the disclosures of both Pioneer and Ottenstein are directed to controlling the brightness of displays based on an ambient brightness value and a user-selected brightness value, and Ottenstein establishes that incorporating an auto/manual switch for including or excluding the contribution of an ambient light signal was a conventional way in which a brightness control system automatically adjusts the brightness of a screen using ambient lighting conditions and such incorporation provides the benefit of allowing the user to choose whether a brightness control signal should be adjusted according to an ambient light level (auto mode) or not (manual mode).

Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Narveson (U.S. 4,386,345) and Whitted (U.S. 7,110,062).

Regarding **claim 15**, Narveson teaches a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (FIG. 4 – brightness control 30 produces user signal V);

selectively multiplying the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (FIG. 4 – multiplier 54 selectively generates a combined signal “ $(CR - 1)(RA)$,” which is based on the selected value V and ambient light level A).

Narveson does not appear to disclose:

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero.

Whitted discloses an LCD with power saving features. In particular, Whitted discloses a brightness control system (e.g., FIG. 12) that produces a brightness control signal based on an ambient light level produced by a light sensor 502 and a user-selected brightness control signal produced by brightness control circuit 504. The intensity of a display's backlight 510 is adjusted as a function of the ambient light signal and brightness control signal so that the perceived brightness of the display will remain generally constant despite changes in ambient light conditions (see Whitted at column 8:9-16). When the output of the ambient light sensor 502 indicates an increase in the intensity of the ambient light striking the screen, the power to the backlight 510 will be increased; on the other hand, when the intensity of the ambient light striking the screen decreases, the intensity control circuit decreases the power supplied to the backlight 502 (see id. at column 8:16-22).

Whitted teaches that a minimum power level for the backlight is predetermined to insure that the display will be readable in low light conditions. That is, even if the output of the ambient light sensor indicates little or no incident light, the intensity control circuit 503 does not lower the power output to the backlight below the predetermined threshold to insure that in dark or dimly lit conditions images on the display panel will remain visible (see *id.* at column 8:23-35).

It would have been obvious to modify the brightness control system of Narveson to adjust the combined signal with a dark level bias, as claimed, since Whitted teaches that maintaining a brightness control signal for powering a display backlight above a predetermined threshold level when the ambient light level decreases to approximately zero ensures that images on the display panel remain visible (see Whitted at column 8:23-35). Based on Whitted's teachings, those skilled in the art would have recognized that, in the absence of such a dark level bias, an automatic brightness control system controlling the brightness of a display panel may produce screen images that are not visible (i.e., not bright enough to be perceived) when the ambient light level is sufficiently low, and therefore, the dark level bias is useful for maintaining a minimum threshold of power for display to ensure the screen is visible in low-light conditions.

Regarding **claim 16**, the combination of Narveson and Whitted teaches the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (see Narveson at column 11:1-13 – the method can be implemented using a control program executed by a microprocessor, dedicated digital logic, or analog circuitry).

Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Whitted (U.S. 7,110,062) and Ottenstein (U.S. 5,270,818).

Regarding **claim 15**, Whitted teaches a method to selectively provide ambient light correction, said method comprising:

receiving a user input signal indicative of a user selectable brightness setting (brightness control 504, FIG. 12);

~~selectively multiplying~~ combining the input signal with a sense signal to generate a combined signal, wherein the sense signal indicates an ambient light level (see column 8:9-12 – a combined signal, i.e., a function of the output of a photo-sensor and a user-selected brightness control signal, is obtained); and

adjusting the combined signal with a dark level bias to generate a brightness control signal for controlling brightness of a visible display such that the brightness control signal is maintained above a predetermined level when the ambient light level decreases to approximately zero (see column 8:23-35 – a dark level bias is predetermined as a minimum power level to insure that the intensity control circuit 503 does not lower the power output to the backlight 510 of the display below the predetermined level in low-light conditions).

Whitted does not appear to disclose “selectively multiplying” to generate a combined signal based on both the user signal and the sensing signal, as claimed. Instead, Whitted merely teaches that the intensity control circuit 503 determines the amount of power supplied to the backlight 510 of the display device as a function of the output of the photo-sensor 502 and the received brightness control signal, such that when the output of the photo-sensor 502 indicates an increase in the intensity of ambient light striking the screen 206, the power to the backlight will

Art Unit: 3992

be increased, and as the intensity of the ambient light striking the screen 206 decreases, the power to the backlight 206 will be decreased (see column 8:9-22). Whitted does not appear to teach that the aforementioned “function” involves generating a combined signal of the outputs of the photo-sensor and brightness control signal using a multiplier, as claimed, or that the generating is executed on a selective basis, as claimed.

Ottenstein discloses an arrangement for automatically controlling the brightness of cockpit displays. In particular, Ottenstein’s system utilizes ambient light sensors (12 and 13) to produce signals indicative of the ambient light and a brightness control 15 that produces a signal indicative of a user-selected brightness setting. Ottenstein utilizes a multiplier to selectively generate a combined signal based on the maximum ambient light signal and the user-selected brightness setting, as shown below:

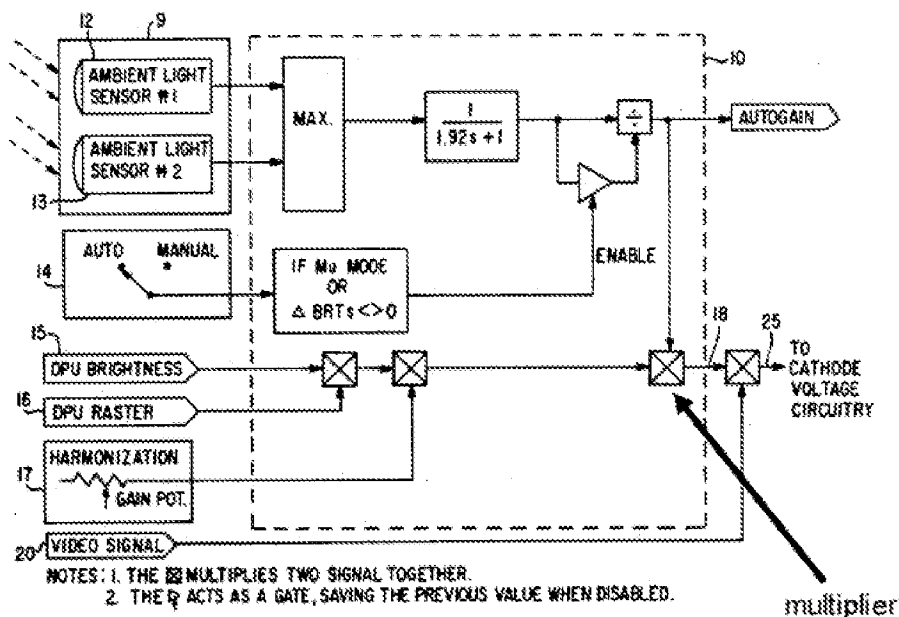


FIG. 1 of Ottenstein (annotated by Examiner)

It would have been obvious to modify Whitted by the teachings of Ottenstein to selectively generate a combined signal by “multiplying,” as claimed, because the disclosures of both Whitted and Ottenstein are directed to controlling the brightness of displays based on an ambient brightness value and a user-selected brightness value, and Ottenstein establishes that selectively generating a combined signal based on multiplying an ambient light signal with a user-selected brightness value was a conventional way in which a brightness control system automatically adjusts the brightness of a screen using (i.e., as a function of) ambient lighting conditions and a user-selected brightness value. Based on Ottenstein’s teaching that it was conventional to generate a combined signal for adjusting the brightness of a display device based on the multiplication of the output of a photo-sensor and a user-selected brightness control signal, those skilled in the art would have recognized that Whitted’s “function” described column 8:9-12 could likewise be derived using a multiplier that multiplies the output of a photo-sensor and a user-selected brightness control signal to achieve predictable results.

Regarding **claim 16**, the combination of Whitted and Ottenstein teaches the method of claim 15, wherein the step of selectively multiplying the input signal with the sense signal is performed by a software algorithm, an analog circuit, or a mixed-signal circuit (see Whitted at column 9:31-41 – automatic brightness control is executed via software).

VI. ALLOWABLE SUBJECT MATTER

Claims 2, 3, and 17 are confirmed patentable for the following reasons.

Regarding **claim 2**, Pioneer does not appear to disclose or suggest that the dark level bias is provided to the multiplier, as claimed. Rather, the dark level bias involves adding the value y_{S1} to the combined signal $\{ (y_{S2} - y_{S1}) / (x_{S2} - x_{S1}) \} * (x_n - x_{S1})$ in Equation 1 at paragraph [0120] of Pioneer after the combined signal has been generated via multiplication.

Claim 3 is confirmed patentable for dependence from claim 2.

Regarding **claim 17**, neither Pioneer nor Whitted appears to disclose or suggest the dark level bias is added to the sense signal before selective multiplication, as claimed. In Pioneer, the dark level bias involves adding the value y_{S1} to the combined signal $\{ (y_{S2} - y_{S1}) / (x_{S2} - x_{S1}) \} * (x_n - x_{S1})$ in Equation 1 at paragraph [0120] after the combined signal has been generated via multiplication. Whitted merely teaches that a minimum power level is predetermined to insure that the display will be readable in low light conditions but does not appear to disclose that the predetermined amount is added to an ambient light signal, as claimed.

VII. CONCLUSION

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings

Art Unit: 3992

“will be conducted with special dispatch” (37 C.F.R. § 1.550(a)). Extension of time in *ex parte* reexamination proceedings are provided for in 37 C.F.R. § 1.550(c).

All correspondence relating to this *ex parte* reexamination proceeding should be directed:

By Mail to: Mail Stop *Ex Parte* Reexam
 Central Reexamination Unit
 Commissioner for Patents
 United States Patent & Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
 Central Reexamination Unit

By hand: Customer Service Window
 Randolph Building
 401 Dulany Street
 Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Colin LaRose whose telephone number is 571-272-7423.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew J. Fischer can be reached at 571-272-6779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9900.

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. 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.

Art Unit: 3992

General inquiries may also be directed to the Central Reexamination Unit customer service line at (571) 272-7705.

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