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**Datasheet for the decision
of 25 November 2014**

Case Number: T 2078/10 - 3.4.03

Application Number: 05291747.3

Publication Number: 1628286

IPC: G09G3/34, H05B33/08

Language of the proceedings: EN

Title of invention:
Control device

Applicant:
Sony Corporation

Headword:

Relevant legal provisions:

EPC Art. 123(2)
EPC 1973 Art. 83, 84

Keyword:

Amendments - added subject-matter (no)
Clarity (no)
Sufficiency of disclosure (no)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 2078/10 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 25 November 2014

Appellant: Sony Corporation
(Applicant) 1-7-1 Konan
Minato-ku
Tokyo (JP)

Representative: Thévenet, Jean-Bruno
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 12 May 2010 refusing European patent application No. 05291747.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman G. Eliasson
Members: R. Bekkering
T. Bokor

Summary of Facts and Submissions

I. The appeal is against the refusal of application no. 05 291 747 for added subject-matter, Article 123(2) EPC (main request) and for lack of an inventive step, Article 56 EPC (first auxiliary request) over documents

D1: US 2003/0230991 A, and

D2: WO 03/075617 A.

A second auxiliary request filed at the oral proceedings before the examining division was not admitted.

II. With the statement setting out the grounds of appeal dated 22 September 2010, the appellant applicant requested the grant of a patent on the basis of a new set of claims 1 to 4 filed as sole request.

III. A summons to oral proceedings was issued by the board, provided with an annex in which a provisional opinion of the board on the matter was given.

In particular, the appellant was informed that claim 1 according to the appellant's sole request lacked clarity, Article 84 EPC 1973.

Moreover, doubts existed as to whether the application as a whole disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC 1973).

- IV. With a letter dated 30 October 2014, the board was informed that the appellant would not be represented at the oral proceedings.

Oral proceedings were held on 25 November 2014 in the absence of the appellant.

- V. Claim 1 of the appellant's main (and sole) request reads as follows:

"A control device (20) for controlling a backlight unit (3) having a group (11) of light emitting elements including light emitting elements of red color (12a), light emitting elements of green color (12b) and light emitting elements of blue color (12c), the light emitting elements of different colors being electrically connected separately, the control device comprising:

electric current supply means (26) for supplying a predetermined drive current to the group (11) of light emitting elements;

quantity of emitted light detecting means (21a, 21b) for detecting the quantity of light emitted from the group (11) of light emitting elements as a function of the electric current supplied from the electric current supply means (26);

temperature detecting means (22) for detecting the temperature of the backlight unit (3); and

reference quantity of light outputting means (24) for outputting a reference quantity of light for the light emitting elements of each color; characterized in that it further comprises:

control means (25) for controlling the electric current supply means (26) so as to make it supply a drive current to the light emitting elements of blue color (12c) on the basis of the quantity of emitted light

detected by the quantity of emitted light detecting means (21a, 21b), the temperature detected by the temperature detecting means (22), and the reference quantity of light output from the reference quantity of light outputting means (24), said control means comprising feedback means for conducting feedback operations so as to make the electric current supply means (26) supply a predetermined drive current to the light emitting elements of red color (12a) and those of green color (12b) in response to the detection output of the quantity of emitted light detected by the quantity of emitted light detecting means (21a, 21b) for the light emitting elements of blue color (12c) while keeping the electric current supplied to the light emitting elements of blue color (12c) to a constant level knowing that luminance of the light emitting elements of blue color (12c) does not change substantially in response to any temperature change."

VI. The appellant submitted in substance the following arguments:

Claim 1 as amended reincorporated the term "*predetermined*" in the expression "*supply a predetermined drive current*" and, thus, met the requirement of Article 123(2) EPC.

Moreover, the subject-matter of claim 1 was novel and involved an inventive step over the cited prior art documents.

In particular, in document D1 the light emission of LEDs was adjusted in response to the detection of variation of luminance and temperature for the LEDs of each colour. D1 did not make any hierarchy among the colours of LEDs relative to the drive current and did not

reveal or even suggest that current supplied to the red and green LEDs depended on the detected luminance of the blue LEDs.

Document D2 related to a light emitting device having multiple types of light sources (red, green and blue), comprising control means for allowing one light source among the multiple types of light sources to emit light at different emission intensities for a predetermined period. It was clearly understood from D2 that the light source emission intensity of any colour source might be increased, decreased or maintained constant with respect to time.

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

Claim 1 as amended is based on claim 1 as originally filed and on the description as originally filed (cf page 7, lines 13 to 18; page 13, line 28 to page 16, line 10).

Accordingly, the amendments to claim 1 comply with Article 123(2) EPC.

3. *Clarity, sufficiency of disclosure*

The object of the invention is to provide a control device of a backlight unit that can stably correct the chromaticity of the LED backlight of the backlight unit by means of a simple arrangement (page 6, lines 5 to 8;

page 15, lines 23 to 28).

The invention would appear to hinge on the idea of using the blue LEDs as a reference.

As argued by the appellant,

- luminance of the blue source does not change substantially in response to any temperature change (see description page 15, lines 3 to 5 and figure 6),
- blue LEDs are stable and free from dispersion in terms of degradation of luminance due to diminishing service life (see description page 15, lines 10 to 11),
- optical sensors can accurately and most sensitively detect blue light (see description page 15, line 9 to 10).

The appellant argued that it was, therefore, unnecessary to use optical sensors for the red LEDs and the green LEDs and the problems of the prior art mentioned in the description eg from page 3, line 17 to page 6, line 4 were overcome.

According to claim 1, the device comprises "*control means (25) for controlling the electric current supply means (26) so as to make it supply a drive current to the light emitting elements of blue colour (12c) on the basis of the quantity of emitted light detected by the quantity of emitted light detecting means (21a, 21b), the temperature detected by the temperature detecting means (22), and the reference quantity of light output from the reference quantity of light outputting means (24)*".

However, it remains unclear how this controlling is performed. As noted above the emitted quantity of blue light is independent of temperature, so the role of the

temperature in this controlling is unclear. Moreover, it remains unclear what the reference quantity of light is and how it is determined.

Moreover, according to claim 1, *"said control means comprising feedback means for conducting feedback operations so as to make the electric current supply means (26) supply a predetermined drive current to the light emitting elements of red color (12a) and those of green color (12b) in response to the detection output of the quantity of emitted light detected by the quantity of emitted light detecting means (21a, 21b) for the light emitting elements of blue color (12c) while keeping the electric current supplied to the light emitting elements of blue color (12c) to a constant level knowing that luminance of the light emitting elements of blue color (12c) does not change substantially in response to any temperature change"*.

However, it remains unclear in which respect the drive current is *"predetermined"*. Moreover, it is unclear how the feedback should be conducted. The supply of current to the red and green LEDs is defined to be in response to the amount of emitted light of the blue LED. The amount of emitted light of the blue LED would, however, appear to be constant, as it is stated to be independent of ageing and temperature, and thus only dependent on the current, defined to be supplied to it to a constant level.

According to the appellant, the exclusive use of the blue LEDs for detection permits to detect changes which were really attributable to the external environment and thereafter the electric current supplied to the red LEDs and the green LEDs might be controlled easily in response to the detection output of the quantity of

emitted light detected by the detector for the blue LEDs.

It is, however, unclear what the "*changes which are really attributable to the external environment*" are and how the current supplied to the LEDs should be controlled with respect to these changes.

The above was noted in the annex to the summons to oral proceedings. The appellant did not submit any arguments in response.

Accordingly, claim 1 lacks clarity, Article 84 EPC 1973.

Moreover, as the above does not become clear from the description and drawings either, the application as a whole does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, contrary to the requirement of Article 83 EPC 1973.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated